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FACULTY OF ECONOMICS – PRILEP**

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Economy, Business & Society in Digitalized Environment
PROCEEDINGS**

23-25 September, 2022 Prilep, North Macedonia

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THE RELATIONSHIP BETWEEN HEALTH
EXPENDITURE AND LABOR PRODUCTIVITY

Rasim Yilmaz¹

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Abstract

Theoretically, the relationship between health expenditures and labour productivity is ambiguous. On the one hand, health expenditures can enhance labour productivity by improving health of workers. Poor health impairs both the working hours and productivities of workers. When workers are healthy, they become physically and mentally more energetic and they have higher incentive to develop new skills and knowledge. On the other hand, increase in health expenditures may deteriorates labour productivity by crowding out physical capital investment. Causality between health expenditures and labour productivity is also ambiguous. This paper investigates the long-run relationship between health expenditures and labor productivity by utilizing a panel data covering the period between 2000 and 2015 and 35 OECD countries. Results of the study displays that there is a positive and statistically significant long-run association between health expenditures and labor productivity. Findings indicate that an increase in per capita health expenditure leads to a rise in labor productivity in terms of GDP per person employed. Results of the study also suggest that there is a mutual (bi-directional) causality relationship between health expenditures and labor productivity indicators.

Keywords: Health Expenditures, Labour Productivity, Panel Study, OECD Countries.

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1. Introduction

Theoretically, the relationship between health expenditures and labour productivity is ambiguous. On the one hand, health expenditures can enhance labour productivity by improving health of workers. Poor health impairs both the working hours and productivities of workers. When workers are healthy, they become physically and mentally more energetic and they have higher incentive to develop new skills and knowledge (Piabuo and Tieguhong, 2017). On the other hand, increase in health expenditures may deteriorates labour productivity by crowding out physical capital investment (Wei, Xia, & Kong, 2018).

Causality between health expenditures and labour productivity is also ambiguous. On the one hand, causality can run from health expenditure to labour productivity whereby increase in health expenditures can improve or deteriorate labour productivity by enhancing health of workers or crowding out physical capital investment as being set above. On the other hand, causality can also run from labour productivity to health expenditure. Increase in productivity may increase the economic performance which may lead to raise in health expenditures. Similarly, decline in labour productivity may reduce economic performance, causing countries to reduce their spending including health expenditures (Wang, 2015).

2. Literature review

Although empirical literature largely focuses on the impact of health expenditures on economic growth as well as the impact of health status on economic growth and labour productivity, there are few country-level empirical studies focusing on the effect of health expenditures on labour productivity.

Eneji, Juliana, & Onabe (2013) analysed the association between health expenditure and labour productivity proxied by output per employed person for the period between 1999 and 2012 in Nigeria. They found that health expenditure explains about 53 percent changes in labour productivity in Nigeria.

Wei, Xia, & Kong (2018) investigated the association between public health expenditure and labour productivity in China's prefecture-level cities between 2007 and 2013. Their results display that public health expenditure play a significant role in improving labour productivity through enhancing cognitive abilities of people. However, their results indicate that public expenditures in the eastern region is negatively correlated with agricultural labour productivity. They ascribe this result to the fact that excessive health investment in rural areas in the eastern region squeezes out physical capital investment.

Mohammadzadeh, Moradi, & Khezrian (2019) examined the relationship between health expenditures and labour productivity for the

period of 1972-2015 in Iran. The results of the study indicate that per capita expenditure has a positive and significant relationship with labour productivity in the long-term with a coefficient of 0.36.

Raghupathi and Raghupathi (2020) explored the relationship between public health expenditure and economic performance across the United States for the years 2003–2014. Their results suggest that healthcare expenditure is positively associated with the indicators of labor productivity in the USA.

Literature review reveals that empirical studies on the relationship between health expenditures and labour productivity are country-level studies, none of them include causality analysis, and there is no panel study on the subject. This study analyses not only the long run relationship between health expenditures on labour productivity but also causality between these two variables in a panel data context by utilizing three different labour productivity indicators.

The remaining part of the study proceeds as follows: next part explains research hypothesis, data, and methodology of the study; section three reports and discusses estimation results; and the last part concludes.

3. Research hypotheses, data and methodology

3.1 Research hypotheses and data

Based on the theoretical foundations outlined in the introduction and previous empirical studies on the subject, the following hypothesis is constructed and empirically tested:

Hypothesis: Health expenditure enhances labour productivity.

A balanced annual data spanning the period 2000 to 2015 across 35 OECD countries are used to conduct empirical analysis. The coverage of sample period and number of countries used in the analysis is determined by the availability of balanced data on health expenditure.

HEALTHEXPPC is current health expenditure per capita, PPP (current international \$). LABPROD is GDP per person employed (constant 2011 PPP \$). The data on HEALTHEXPPC and LABPROD are gathered from the World Development Indicators (WDI) of the World Bank.

The natural logarithmic transformation of each variable is in order to normalize the variables so that each variable is expressed in a uniform unit. Another advantage of this transformation is that the coefficient of each variable now displays the elasticity of the relevant variable.

3.2 Estimation methodology

Proper panel test and estimation approaches are employed to reveal the long-run association between health expenditure and labour productivity. Firstly, cross-sectional dependence test is performed to find out which panel

unit root test (i.e., first generation or second-generation panel unit root test) will be preferred. Secondly, given the cross-sectional dependency identified, a panel unit root test accounting for cross-sectional dependency is applied to each variable. Having each variable integrated order one, we thirdly conduct panel cointegration test explicitly counting in cross-sectional dependency in order to reveal the long-run equilibrium relationship between health expenditure and labour productivity. Besides the panel cointegration test, the test of parameter constancy is performed to see if we have heterogeneous parameters across panels. Once a panel cointegration relation and heterogeneous parameters are detected, then long-run elasticities are obtained by using a convenient panel estimation approach taking both cross-sectional dependency and heterogeneous parameters into account. Lastly, heterogeneous panel causality test is implemented to find out the direction of causality.

In accordance with the objective of the study, the following equations is constructed as the benchmark model:

$$\text{LABPROD}_{it} = f(\text{HEALTHEXPPC}_{it}, \nu_i) \quad (1)$$

where ν_i , ψ_i and ρ_i stands for country specific fixed effects and it subscript represents i-th country's observation at time t.

3.3 Estimation results

The existence of cross-sectional dependence in series makes the conventional unit root tests inconvenient since the conventional unit root tests assume cross-sectional independence. Therefore, rather than conventional unit root tests, it will be better to conduct second-generation unit root test, which explicitly accounts for cross-sectional dependence. Thus, we started our empirical analysis by implementing various cross-sectional dependence tests. Table 1 displays cross-sectional dependence test results for four distinct tests, namely Breusch-Pagan (1980) LM test, Pesaran (2004) scaled LM test, Baltagi, Feng, & Kao (2012) Bias-corrected Scaled LM test, Pesaran (2004) CD test. The all test results shown in Table 1 strongly rejects the null hypothesis of "No cross-section dependence" at the 1% significance level in the data.

Table 1. Cross-Section dependence test (H_0 : No cross-section dependence (correlation))

LABPROD	Test-statistic	P-Value
Breusch-Pagan (1980) LM	6096.520	0.000
Pesaran (2004) scaled LM	159.4811	0.000

Baltagi, Feng, & Kao (2012) Bias-corrected Scaled LM	158.3144	0.000
Pesaran (2004) CD	68.96151	0.000
HEALTHEXPPC	Test-stat.	P-Value
Breusch-Pagan (1980) LM	8526.302	0.000
Pesaran (2004) scaled LM	229.9170	0.000
Baltagi, Feng, & Kao (2012) Bias-corrected Scaled LM	228.7503	0.000
Pesaran (2004) CD	91.85382	0.000

Residual cross-section independence test for the error terms of the model is also conducted. As can be seen from the results in Table 2, null hypothesis of cross-section independence is rejected.

Table 2. Residual cross-section independence test (H_0 : Cross-section independence)

LABPROD3- HEALTHEXPPC	Test-stat.	P-Value
Breusch and Pagan (1980) LM test	2258	0.000
Pesaran, Ullah, & Yamagata (2008) bias-adjusted LM test	97.45	0.000
Pesaran (2004) CD test	26.84	0.000

Given the detection of cross-sectional dependence in the data suggested by the test results in Table 1 and 2, the CIPS test for unit roots in heterogeneous panels developed by Pesaran (2007) accounting for cross-sectional dependence is applied. The CIPS test results are displayed in Table 3 below. The test results disclose that all series are not stationary in levels but they are stationary in first differences at 1% significance level. In other words, the CIPS unit root test findings imply that variables of LABPROD and HEALTHEXPPC are integrated of order one (i.e. $I(1)$).

Table 3. CIPS test (H_0 : homogeneous non-stationary)

	Levels	First Differences
LABPROD	-2.350	-3.571*
HEALTHEXPPC	-2.347	-3.332*

Notes: * indicates statistical significance at 1% level. Critical values at %1 level for levels and first differences are -2.85 and -2.93 respectively. The model used in CIPS unit root test contains a constant term and time trend.

After identifying that our variables are I(1), the cointegration relation among variables is checked by utilizing two different panel cointegration test paying attention to cross-sectional dependence across panels. First, Persyn and Westerlund (2008) error-correction-based panel cointegration tests with robust P-values, which is obtained through bootstrapping, is applied. The findings are reported in Table 4 and the last column shows the P-values, which are robust to cross-sectional dependence. $G\tau$ and $G\alpha$, which allow error correction terms to be heterogeneous across panels, stand for group-mean test results while $P\tau$ and $P\alpha$, which assume error correction terms to be homogeneous across panels, stand for panel test results. Besides, group-mean test looks for cointegration in some panels whereas panel test seeks for cointegration in all panels. Robust P-values in Table 4 support the existence of a cointegrating relationship between health expenditure and labour productivity.

Table 4. Persyn and Westerlund (2008) ECM panel cointegration tests (H0: No cointegration)

LABPROD3-HEALTHEXPPC	Test-stat.	Robust P-Value
$G\tau$	-1.783	0.100
$G\alpha$	-4.816	0.000
$P\tau$	-7.947	0.000
$P\alpha$	-3.716	0.050

Next, the heterogeneous ECM panel cointegration test of Gengenbach, Urbain, & Westerlund (2015) in which cross-sectional dependence is explicitly taken into consideration is carried out and the test findings are reported in Table 5. The results show that there is cointegrating relation between LABPROD and HEALTHEXPPC variables at 1% significance level. In overall the findings of two distinct cointegration tests in Table 4 and 5 support the presence of cointegration for the model.

Table 5. Gengenbach, Urbain, & Westerlund (2015) heterogeneous ECM panel cointegration test (H0: No cointegration)

	EC-coefficient	T-bar Stat.	Significance
LABPROD-HEALTHEXPPC	-1.119	-10.020	significant at 1%

Before proceeding to estimations of long-run elasticities, Swamy test of parameter constancy is implemented to find out whether parameters across panels are heterogeneous. Reported results in Table 6 show that parameters do not remain constant across panels for all three models. Therefore, the estimation method that will be chosen to estimate long-run elasticities should allow for heterogeneous slope coefficients across panel members and also account for correlation across panel members (i.e., cross-section dependence). For that reason, it is preferred to use the Augmented Mean Group (AMG) estimator developed in Eberhardt and Teal (2010) as an alternative to the Common Correlated Effects Mean Group (CCEMG) estimator.

Table 6. Swamy parameter constancy test

	Test Stat.	P-value
LABPROD-HEALTHEXPPC	26634.76	0.000

The long-run elasticities for the model are presented in Table 7. As to the mean group estimation results, coefficient of error correction term takes the expected negative sign at 1% significance level and hence this guarantees existence of a log-run association between LABPROD and HEALTHEXPPC. The long-run coefficient of HEALTHEXPPC is positive and statistically significant at 1% significance level. This finding hint that an increase in per capita health expenditure by 1% leads to a rise in labour productivity in terms of GDP per person employed by 0.0754%. Meanwhile, according to the group specific estimation results, both coefficient of error correction term and long-run coefficient are statistically significant for just Australia, Belgium, Chile, Denmark, France, United Kingdom, Japan, Korea, Netherlands, Poland, Portugal, Slovak Republic, Sweden, and United States.

Table 9. Long-run elasticities for equation 3

Mean group estimation results		
	EC-coefficient	Long-run coefficient
	-0.6402	0.0754
	<i>0.0000</i>	<i>0.0000</i>

Table 10. Dumitrescu and Hurlin (2012) Granger non-causality test

H0: HEALTHEXPPC does not Granger-cause LABPROD.

Z-bar tilde	P-value
4.3711	0.000
H0: LABPROD does not Granger-cause HEALTHEXPPC.	
Z-bar tilde	P-value
7.0068	0.000

Notes: Optimal number of lags is selected based on BIC criteria.

4. Conclusion

Theoretically, the relationship between health expenditures and labour productivity is ambiguous. Causality between health expenditures and labour productivity is also ambiguous. In this study, the long-run relationship between health expenditures and labour productivity and causality between these two variables were examined in a panel data context. Panel data covers 35 OECD countries and the period between 2000 and 2015.

It is found that there is a mutual (bi-directional) causality and positive relationship between health expenditures and labour productivity indicators in the long run. Our finding indicate that health expenditures are important factor for labour productivity and equally labour productivity is also important for the level of health expenditures. In this understanding, an increase in health expenditure enhances the health of the workforce which lead to higher productivity and income per head. In turn, increase in incomes induces subsequent surge in health expenditures.

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FINANCING SUSTAINBLE GROWTH

Gligor Bishev¹

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Abstract

North Macedonia is relying on Market Failure theory for the role of Government in the economy. The Government should take a back seat and simply create condition for private sector to invest and generate growth. Thus, public expenditures are kept at 1/3 of GDP for many years. Private sector investments in fix assets are anchored on average in last two decades at 22.4 percent of GDP. Result has been a moderate growth, that is not sufficient in foreseeable future to close the gap in living standard between the North Macedonia and EU.

Innovative ecosystem and de-risking private sector investments is perceived more adequate model for achieving smart, sustainable and green growth. Such policies must put innovation at heart of growth policies. The Government should have a mission to fund innovations, direct economy to green and smart. This will require public expenditures steadily to reach threshold of 40 percent of GDP. Higher private investments: domestic and foreign, should be attracted by de-risking private sector and by strong private public partnership. This should accelerate growth to 5 percent on long-run, make it more inclusive and secure swift living standard convergence towards EU.

Key words: growth, public expenditures, private public partnership, de-risking, mission driven state.

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1. Introduction

Great recession (2007-2009), definitely bring back the essential role of state in securing sustainable economic development. Market alone, has been perceived not sufficient to deliver inclusive growth, on long run. Covid-19 further strengthen role of modern well fare state. Without securing health care services, free for all, financial support to companies and households, defeating Covid without prolonged severe economic recession was not possible. Modern state, definitely can not seat on back seat and simply create condition for private sector to invest and generate growth. Modern entrepreneurial state has to play many governmental roles in order to achieve sustainable, inclusive and fair development. Policymakers have a critical role to help private sector players overcome various market failures. To assist the process of discovering new and promising opportunities. To de-risk investing in such opportunities, reduce cost of investing (Miriana Mazzucato, 2012).

On other hand every country has a different set of factor endowments and “binding constraints” at any given time: policies that work well for some countries could wreck havoc on others. Countries need to upgrade their policy interventions based on the constantly evolving sources of comparative advantage (Justin Yufi Lin, 2012).

Building development institutions that are focused on ensuring implementation of policies and accountability are an integral part of modern state development policies. Policies and programs must be implemented well, not just designed. Policy makers need to continue to invest in improving institutions and their capacities to ensure that their policies and programs can have the intended impact (Daron Acemoglou, James Robinson, 2012).

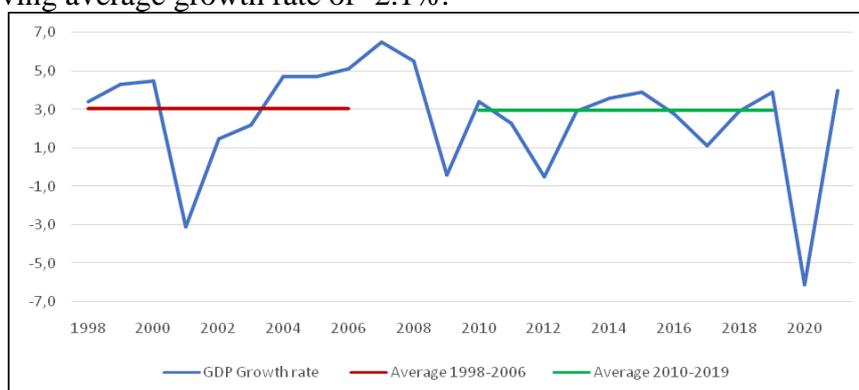
Based on empirical data of outperforming countries in respect of growth, McKinsey Global Institute (September 2018), as crucial development policies is emphasizing following three blocks of measure: I) Measures directed to increase productivity: a) promoting competition and market efficiency; b) Investing in infrastructure and mechanization; c) Increasing total factor productivity by improving technology, innovation, and processes, especially direct government investment in R and D, enablers for private sector R and D, innovation clusters, incentivize “first movers”; d) Boosting scale of production and investing in talent; II) Income policy measures that translate productivity into strong and inclusive income growth through: a) Boosting household incomes and middle class formation through higher wages; b) Increasing corporate profit growth broadly distributed among companies; and III) Demand side policies by: a) Driving higher domestic consumption and investment from income and credit growth; b) Supporting investment by mobilizing domestic savings and capital accumulation; c) Tapping into regional and global demand by enhancing global connectivity. Purpose of this paper is to analyze growth model of North Macedonia from the point of view of the role of private sector and government in financing and investing in growth opportunities. In chapters that follow we investigate first,

characteristics of growth – pace of growth, key drivers and distribution of growth – second chapter. In third chapter we analyze the role of state in financing growth and measures oriented to growth. Fourth chapter is devoted to role of private sector in financing growth, risk undertaking, implementing innovations, and new technologies implementation. Concluding remarks are presented in last, fifth chapter.

2. Poor growth performance

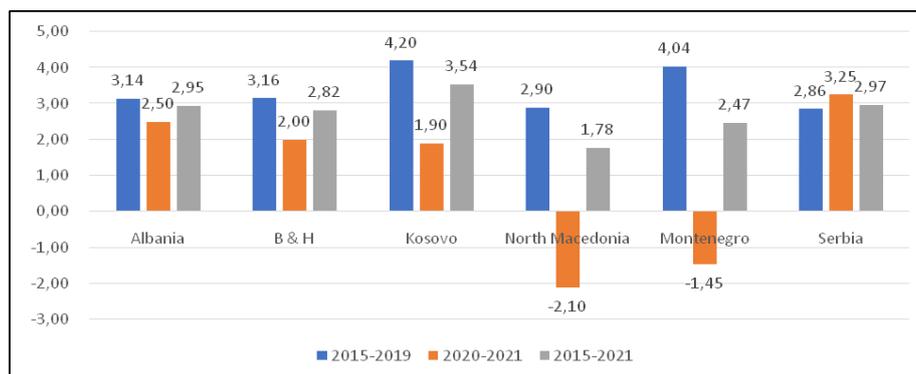
In last two decades Macedonia has not succeeded to become fast growing economy. Despite high price and financial stability an average pre-pandemic growth rate (2001-2019) was around 3.0 percent. In the period 1998 – 2006, if we exclude 2001, a year of internal conflict, average GDP growth was 3.03 percent. In the period of 2009 – 2019, if we exclude two recessionary years (2009 and 2012), average growth rate was slightly lower 2.98 percent. This was not sufficient to close the income gap between average EU country and North Macedonia. At the end of 2019, GDP per capita in North Macedonia was accounting 37.2 percent of EU average.

In the period 2015-2021, North Macedonia has poor performance from point of view of growth within Western Balkan countries, as well. In the period before Covid-19, North Macedonia, achieved average growth rate of 2.9 percent, sufficient for the fifth position out of six Western Balkan Countries. During Covid-19 period (2020-2021), North Macedonia was the poorest growth performer within the group of Western Balkan Countries, achieving average growth rate of -2.1%.



Picture No. 1 Real GDP growth

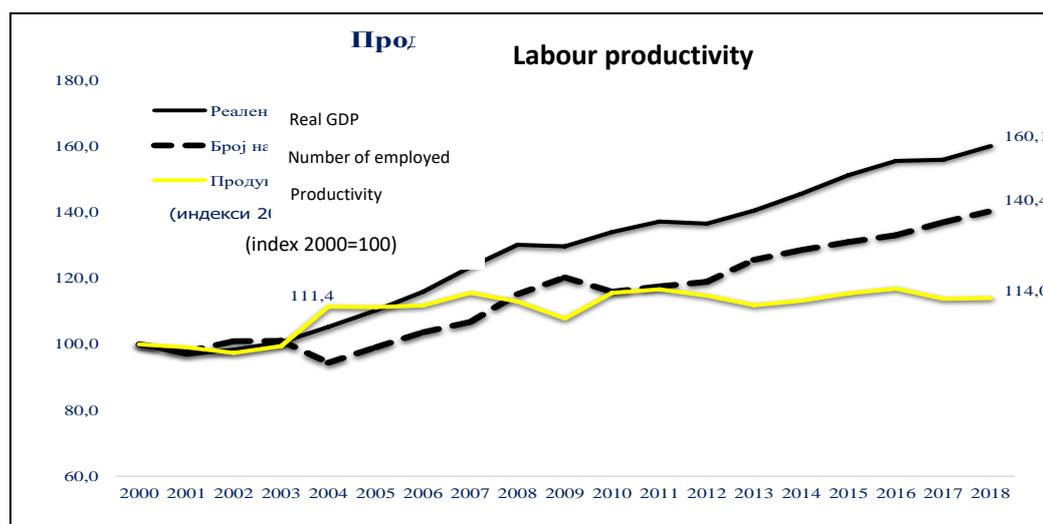
Source: GDP Survey, State Statistical Office, April 2022.



Picture No. 2 Average GDP growth rates of Western Balkans Countries
Source: World Bank, Western Balkans Regular Economic Report: Spring 2022, Steering through Crisis.

Poor economic growth is highly correlated with low productivity growth, low research and development, and low level of innovations. On other side, high uncertainty and high risks associated with private investments blocked exploiting opportunities of private sector.

Thus, in last two decades, economic development has been mainly driven by employment. Productivity on average grew by 0.2 percent. In the same period, employment increased by 40 percent. This brings us to conclusion that North Macedonia was relying on labor intensive model of economic growth. Through arbitrage of labor force price and arbitrage of tax rates, the model of growth attracted FDIs and employment in industries with low to middle technological development, that were not generating significant added value and sustainable development. However, such model of development, based on arbitrage of labor force and arbitrage of tax rate can bring some results on short run. On long run such a model is not viable (McKinsey Global Institute, 2019).



Picture No. 3 Real GDP growth, productivity and employment
Source: WEO October, IMF Извор: WEO October, IMF, SSO N. Macedonia

and calculations.

Even in such circumstances, employment level is still low. Employment at the end of 2019 (last pre-Covid year) hardly reached 47.3 percent, in comparison to 69 percent in EU (while EU target is to reach 75 percent until 2025). Thus, significant part of labor force is discouraged to seek for employment and is not active or is on temporal employment abroad or is employed in an un-informal economy.

Growth driven by employment was very successful in poverty reduction. Citizens living with 5.5 USD per day were reduced from 35 percent in 2009 to 17.9 percent in 2018. In comparison with other Western Balkan Countries, in 2018, North Macedonia was in the middle by poverty index. However, income inequality remained high. In accordance to data of Tax Revenue Office, 1 percent of citizens with highest income account for 14.4 percent of total income in the country. This is the highest rate of income concentration in Europe. Also, citizens in extreme poverty, that live with less than 2 USD per day account for 4.4 percent of total population. This is very high poverty on European level (Tevdovski, Bishev, 2020).

3. Growth model – role of state

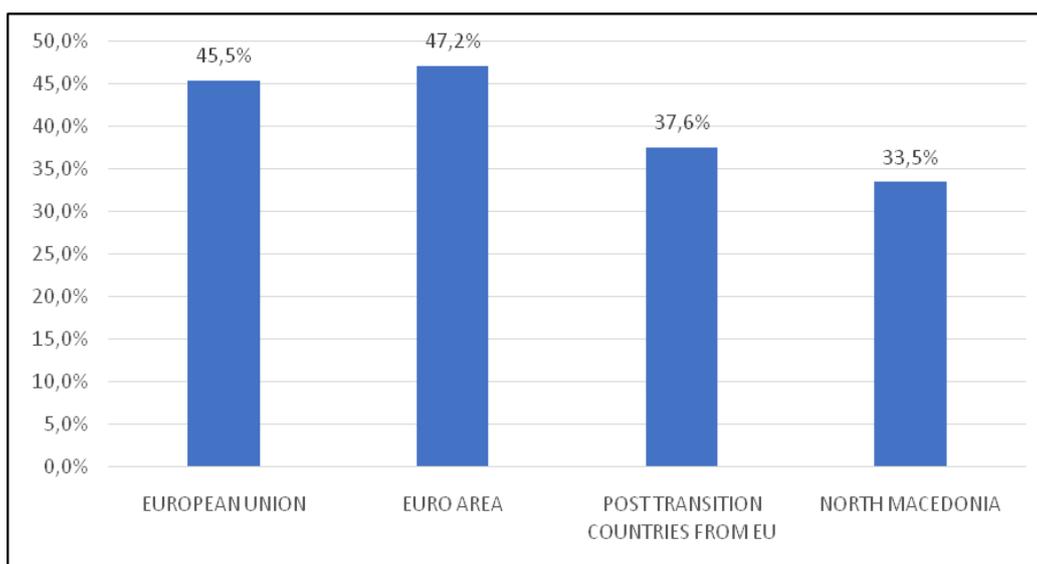
North Macedonia has been relying on Market Failure theory for the role of Government in the economy. During good times, Government expenditures are not as “productive” as private sector investments. Thus, during good times, Government role should be as small as possible. The Government should take a back seat and simply create condition for private sector to invest and generate growth. Role of the Government should be increased during bad times, crisis, when market mechanism is not sufficient alone, to generate growth and stability.

Policymakers of North Macedonia have been proponents of such a view since establishing monetary independence in 1992. However, we may distinguish two periods: a) period of Market Failure Theory with progressive taxation on personal income with tax rates of 15; 18 and 24 percent, and b) Ultra-Orthodox Market Failure Theory with flat income tax rate of 10 percent in the period 2008 – 2022. Policymakers believe that the smaller Government income and expenditures and interference in economic development, the better condition for private sector to deliver higher economic growth.

In this paper we measure role of the Government in economic development mainly by two indicators: share of public expenditures to GDP and structure of Government expenditures, especially share of expenditures for public investment, education and research and development to GDP. Policymakers in North Macedonia systematically kept government expenditures on level of 1/3 of GDP before Covid-19 crisis. In Covid-19 years (2020-2021) public expenditures reached 38.9 percent and 37.7 percent of GDP, respectively. Allowing significant space for private sector to invest and

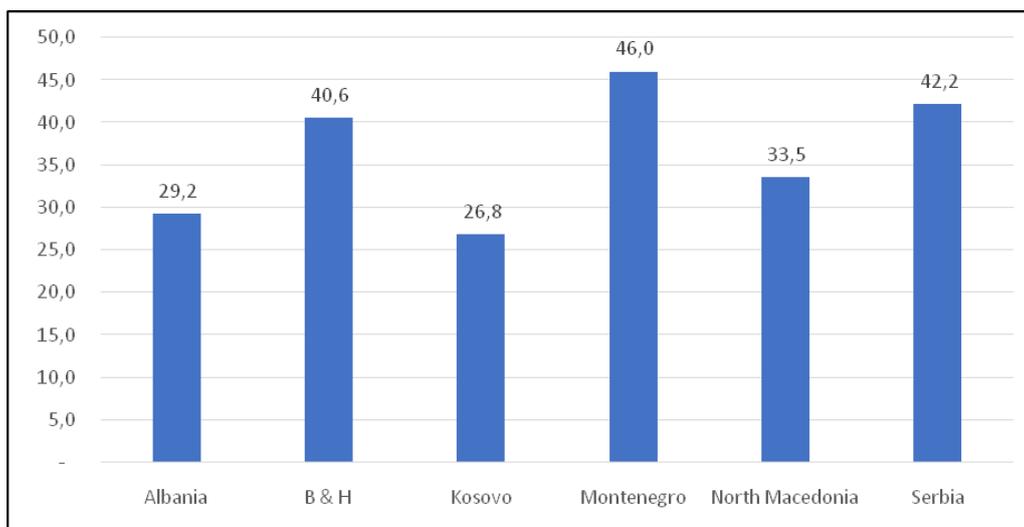
generate growth. However, as we present in previous chapter, the growth was very poor, compared to needed to approach towards EU, as well as, in comparison to other Western Balkan Countries. Furthermore, average growth in a period of implementation of Ultra Orthodox Market failure Theory, was slightly lower, than in the previous period when progressive personal income tax rates were in place.

From six Western Balkan Countries, based on total public expenditure to GDP, three are relying on Market Failure Theory for the Government role: North Macedonia (on average 33 percent of public expenditures to GDP in pre Covid period), Albania (on average 29.5 percent before Covid period) and Kosovo (29 percent before Covid period). Other three countries: Bosnia and Hercegovina, Montenegro and Serbia, with public expenditures to GDP between 42 percent to 45 percent in pre Covid period, are proponents of important role of the Government in generating development through adequate infrastructure, investment in research and development, de-risking private investments, supporting innovations, green economy and digitalization.



Picture No. 5 General government expenditures as percent to GDP: EU, EUROZONE, NORTH MACEDONIA

Source: IMF, World Economic Outlook, 2022.



Picture No. 6 General government expenditures as percent to GDP: Western Balkans Countries

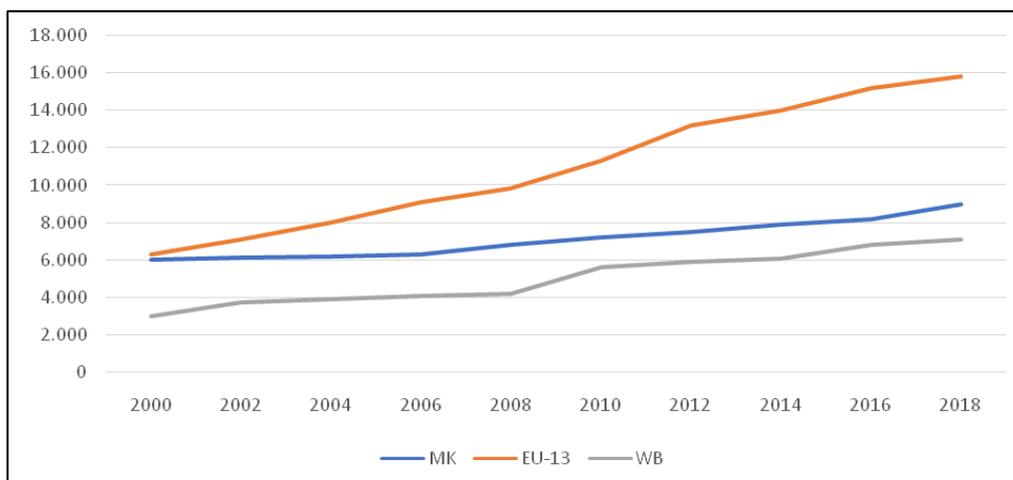
Source: IMF, World Economic Outlook, 2022.

Capacity of Government of North Macedonia, from point of view of public expenditures to GDP is far below capacity of EU governments, where share of public expenditures to GDP is between 45 to 48 percent before Covid period.

State capacity to alleviate recessions and crisis on short run is very important. "...differences in state capacity are important variable of economic development. In a big number of less developed economies, Government revenues are small part of GDP...Societies with limited state capacity are those that invest little in public goods and does not undertake policies for income redistribution...(Acemoglu et al., 2011)".

Limited fiscal capacity of the North Macedonia was obvious during Covid-19 recession in 2020-2021. Thus, North Macedonia at the end of 2021 did not reach pre Covid level of GDP. It was by 2.1 percent lower.

Government capital expenditures for a decade were kept around 3 percent of GDP with declining trend in last three years around 2.4 percent. This has been insufficient to improve quantity and quality of public infrastructure and support growth acceleration. North Macedonia would need at least to double public capital expenditures in order to catch up with EU countries and become fast growing economy (Fiti Taki, Antovska-Mitev Marica, Drangovska Tatjana, 2021) .



Picture No. 7 Public Capital Stock (2017 PPP dollars per capita)

Source: IMF Investment and Capital Stock Dataset

North Macedonia lags EU countries in quantity and quality of capital stock. The country's per capita capital stock of public capital at the end of 2018 has nearly 50 percent gap with new EU member states, although at the beginning of 2000 gap was around 10 percent. Physical measure of infrastructure – such as kilometers of roads and railways, kilowatts of power generation capacity, and digital economy indicators reveal similar deficiencies. North Macedonia also lags EU in terms of the quality of infrastructure (IMF, Article IV Report, 2022).

Investment in education and research and development are low. Expenditures for education account for 3.7 percent of GDP and are very low in comparison with the same in EU countries (Slovenia 4.9 percent of GDP, France 5.6 percent of GDP). Quality of expenditures are also important. Public expenditures for research and development, almost do not exist. In 2018 they account 0.04 percent of GDP (Stikov, Jovanovic, Tevdovski, 2020).

Since 2017, Policymakers in North Macedonia started with swift increase of minimum wage with an aim of more equal income distribution. Cumulative increase of minimum wage in period 2017 – 2022 was 50 percent, significantly above increase of cost of living and productivity growth. This resulted in significant increase of unit labor costs, increase of domestic consumption and demand driven growth in last few years.

By undertaking measures for rapid wage increase, policymakers open a process of giving up of attracting FDIs based on arbitrage of price of labor force and income tax rate arbitrage. Policymakers shifted their focus to economic development based on higher added value and new technologies, that require skilled and well educate labor force. Such a shift requires new, different role of Government and de-coupling from Market Failure Theory.

4. Growth model – role of private sector

Labor intensive economic growth, based on low labor costs, low and flat taxes, with limited role of Government in economic development and relying on FDIs in economic zones, has not secure inclusive, sustainable economic growth. FDIs in economic zones did not bring sophisticated equipment and new technology that would boost economic growth and productivity. In North Macedonian case, FDIs were concentrated in low to middle technology level of production – spare parts assembling for auto industry, textile industry, chemical industry and metal industry. There was not significant transfer of know-how and technology. However, FDIs boosted gross export which at the end of 2019 reached 50 percent of total export.

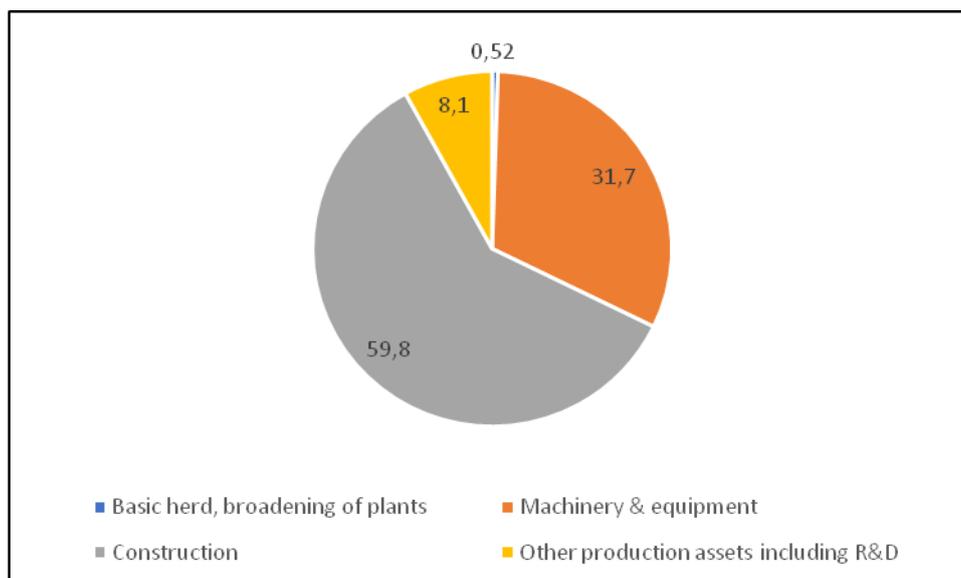
Contribution to GDP and employment of FDIs in economic zones was not spectacular. They are contributing around 2.5 percent to GDP and 3.5 percent of total employment (Uzunov, Jovanovic, Vuckova, 2020).

Domestic private sector investments in fix assets, for two decades, on average account for 22.4 percent of GDP. Together with Government investments of 3 – 2.4 percent of GDP has been not sufficient to increase capital stock significantly, to introduce advanced technologies, innovations that would accelerate growth, reduce income inequality and significantly increase productivity, employment opportunities and living standard of citizens.

The largest part (60 percent) of private investments in fix assets were in real estate, 32 percent in equipment and machinery, and only 1.8 percent of GDP or 8.1 percent of total investments were in other assets including research and development (3 to 5 times lower than in EU countries). Such composition of private sector investments in fix assets do not create conditions for high, sustainable and inclusive growth. Furthermore, investments of private sector were mainly oriented in traditional sectors: industry, agriculture, construction. Very little in services, green and digital economy, tourism, new design of products.

Key source for financing investments were depreciation of fix assets, retained earnings and bank loans. It appears that access to finance has been limiting factor, as well, for higher investments in fixed assets

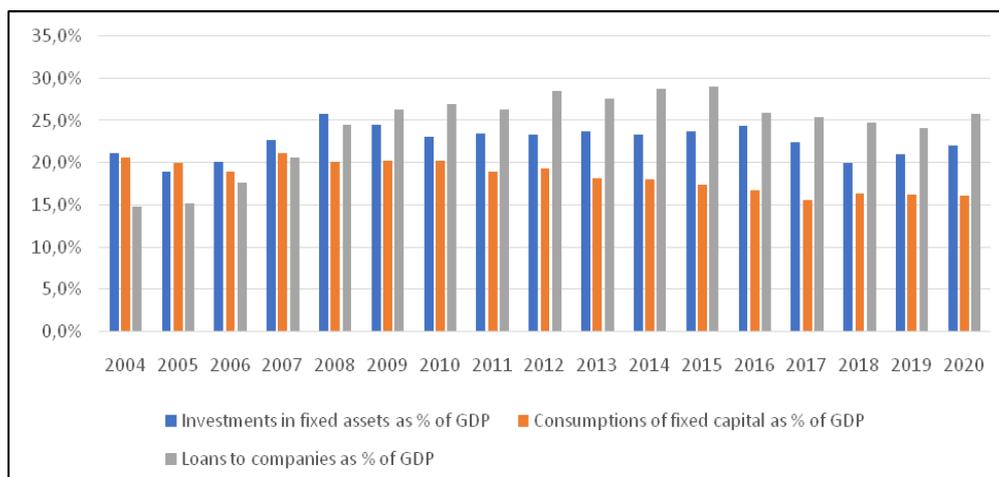
“Over the past four decades, we have seen an explosion in availability of capital. Today, global financial assets total USD 400 trillion. This exponential growth brings with it risks and opportunities for investors and companies alike, and it needs that banks alone are no longer the gatekeepers to funding.



Picture No. 8 Structure of private sector investments in fix assets
Source: Survey, State Statistical Office, May 2022.

Young, innovative companies have never had easier access to capital. Never has there been more money available for new ideas to become reality. This is fueling a dynamic landscape of innovation. It means that virtually every sector has an abundance of disruptive startups trying to topple market leaders. CEOs of established companies need to understand this changing landscape and the diversity of available capital if they want to stay competitive in the face of smaller more nimble businesses (Lary Fink, 2022)”.

From picture No. 9 we may conclude that 76 percent of private sector investments have been financed by fixed assets depreciation. 24 percent have been financed by retained earnings and bank loans. Contrary to global trends in developed markets, banks in North Macedonia were “gatekeepers to funding”, having in mind undeveloped other capital markets, especially undeveloped market of investment funds and corporate bonds. However, even in such circumstances, bank loans to companies account for 25.2 percent of GDP, which is two to three times lower than in matured market economies and fast growing economies. Access to finance and de-risking private sector investments appears crucial factors for higher private sector engagement in economic development.



Picture No. 9 Private investment in fix assets, fix capital consumption and loans to companies

Source: Survey, State Statistical Office 2022 and NBRM Statistical Data Series, 2022.

5. Conclusion

Economic growth based on Market Failure Theory for a state role in development, in North Macedonia was very poor. Accelerating growth and boosting it to above 5 percent would require policy makers in North Macedonia to de-couple from Market Failure Theory for Government role and to accept modern, entrepreneurial state that is directing government investment through “mission oriented” not market fixing, Government institutions.

Achieving a mission of high, inclusive, sustainable economic growth that would lead to higher living standard and more equal income distribution, requires public and private sector to work together, and North Macedonian state both willing and visionary enough to set the direction and create institutional framework. Today’s societal challenges, which combine social, political, economic and technological ambitions, should guide our new “mission” which necessitate greater investment level and role of state.

This will require public expenditures steadily to reach threshold of 40 percent of GDP, and public capital expenditures to 5-6 percent of GDP. Through de-risking private investment, stimulating innovations, green and digital investments, private investments in fix assets would reach a level of 27-30 percent of GDP.

For such a new role of welfare state and its long term “mission”, policy makers in North Macedonia should build a broad-based consensus in Macedonian society.

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Steering through Crisis.

SOFTWARE MAINTENANCE MANAGEMENT
IN MICRO SOFTWARE COMPANIES

Zeljko Stojanov¹

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Abstract

Software maintenance is one of the main processes in software companies. It is regarded as more complex and costly comparing to software development, and therefore should be carefully planned and managed in software companies. Micro software companies are companies with up to 10 employees, and they represent a significant driver of economic development in many countries around the world. However, micro companies have specific internal organization and business model, but also have significant constraints on human and financial resources. After outlining the basic concepts of software maintenance and characteristics of small and micro software companies, the paper presents the author's experience in software maintenance management in a local micro software company in Serbia. Maintenance management was implemented through a project aimed at improving maintenance processes in the company. The main objective was improvement of maintenance request processing, which resulted with the implementation of a technical solution related to timeline of maintenance requests. Since process improvement project fosters organizational learning and knowledge management activities, as a subproject was implemented knowledge identification and systematization project. Presented experience gained through field work in the company contribute to overall knowledge base about software engineering practice in micro software companies, which can be beneficial to both researchers from academia and practitioners from industry.

Keywords: software maintenance, maintenance management, micro software companies, software process improvement, knowledge management

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1. Introduction

Software maintenance encompasses activities aimed at sustaining software systems operable and useful after delivery, while preserving their integrity (IEEE, 2006). Maintenance of software systems should align with overall business strategy of software organizations that produce and maintain software. This assumes planning and management of maintenance activities in early stages of software development, and later, their adjustment to business processes in software organizations. According to *IEEE 12207-2008 International Standard for Systems and software engineering -- Software life cycle processes* (IEEE, 2008), software maintenance is one of the primary processes in software life cycle. An organization or a person that implements maintenance activities and tasks is called maintainer.

Software maintenance has been recognized by both practitioners from industry and researchers from academy as the most complex and costly phase in software life cycle (Bourque & Fairley, 2014; Ulziit *et al.*, 2015; L'Erario *et al.*, 2020). The complexity of software maintenance activities is due to the large set of services provided to clients (Hassan & Khan, 2017). Software organizations recently recognize the importance of software maintenance to increase positive financial effects of developed software by supporting software operation and use as long as it is possible. Software maintenance is performed to (Bourque & Fairley, 2014): correct faults, improve the design, implement enhancements, interface with other software and hardware components, adapt to different platforms, migrate legacy software, and retire software. However, software maintenance does not include major or large modifications to architecture of software systems, but rather small modifications that enable their proper functioning (Tripathy & Naik, 2015). Various typologies of software maintenance types (activities) have been proposed, firstly stated by Swanson (1976), refined by Chapin (2000), and documented in *IEEE Std. 14764-2006 International standard for Software Engineering - Software Life Cycle Processes - Maintenance* (2006). The most common types of software maintenance are corrective (correcting faults), adaptive (adaptation to new business and technical environment), enhance (adding new features), supportive (providing support and training to clients and users), and preventive (actions aimed at improving software product and preventing faults). After software delivery majority of activities relate to correcting faults, while later other types of maintenance dominate (see Fig. 1).

According to European Commission (2015) small and medium enterprises are significant drive for economy, fostering competitiveness, and providing two-thirds of the jobs. Small software companies, with less than 50 employees, are essential for the growth of economy worldwide since they comprise 85% of all software organizations (Richardson & Von Wangenheim, 2007). Micro software companies are subset of small software companies, with less than 10 employees, while Laporte *et al.* (2008) introduced the term

Very Small Enterprises (VSEs) for companies up to 25 employees. Despite their significant part in the economy, software micro companies have several constraints regarding resources, primarily financial and human, and therefore, are quite specific working context deserving more research. However, research on their maintenance practice is very limited according to literature review conducted by the author. The research by the author of this paper on maintenance process improvement (Stojanov, 2021) and knowledge management in software maintenance practice (Stojanov, 2019) have been recently published as a result of many years of research work on practice in the local micro software company.

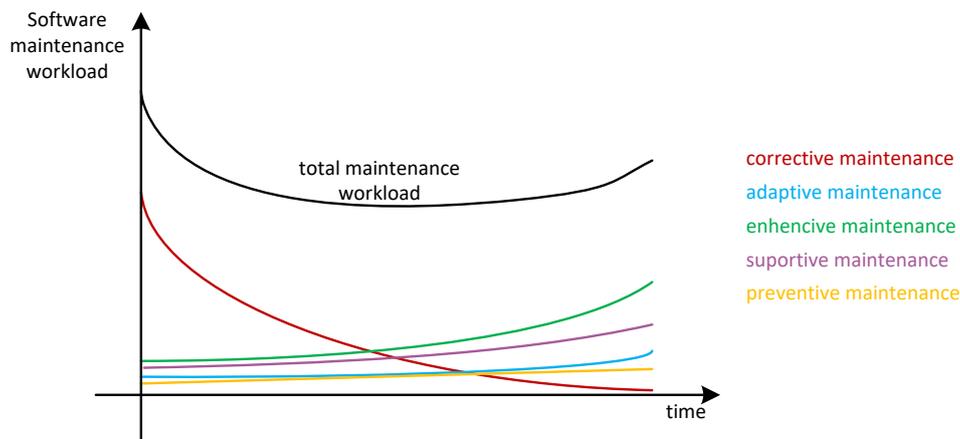


Figure 1. Software maintenance workload for typical maintenance activities

Based on the above discussion, the objective of this paper is to present the reflections on the author's experience on software maintenance management practice in a local micro software company. Section two briefly outlines issues and challenges in software maintenance management, while the third section outlines overview of challenges faced my micro software companies. Reflections on the author's experience are presented in the fourth section. The last section presents concluding remarks and suggestions for further research.

2. Software maintenance management

Software maintenance relates to tasks performed to provide support to software users and sustain operation of delivered software systems, requiring planning and implementation of management activities related to alignment to organization objectives and strategy, human resources, processes, organizational issues, and outsourcing (Bourque & Fairley, 2014). To optimize costs of maintenance activities, software organization should continuously assess and improve their maintenance processes (April & Abran, 2008). However, clients usually do not understand the real value and complexity of maintenance activities and think that software organizations provide expensive

and inefficient maintenance services (April, 2010). All these suggest that software organizations should seriously plan and implement software maintenance management, which requires planning activities on the daily basis and recording all relevant data related to these activities.

The main maintenance subprocesses are (April & Abran, 2008): process implementation, problem and modification analysis, modification implementation, maintenance review/acceptance, migration, and software retirement. However, in many cases software organizations do not have well defined and established maintenance processes, and do not follow international standards for process assessment and improvement. The key software maintenance processes according to *IEEE Std. 14764-2006 International standard for Software Engineering - Software Life Cycle Processes – Maintenance* (IEEE, 2006) are presented in Fig. 2. Software organizations usually tailor these processes based on their needs.

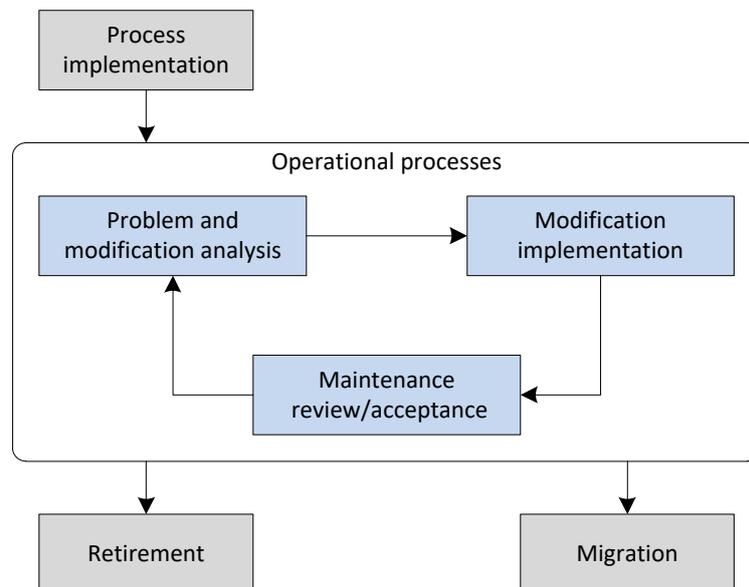


Figure 2. Software maintenance processes organization

Process implementation relates to planning maintenance activities for delivered software systems. Operational processes (problem and modification analysis, modification implementation, maintenance review/acceptance) relates to usual daily activities performed to maintain software systems useful for users. Migration is rarely used process that is used when there is a need to port a software system to a different platform, while retirement is used when there is no need for existing software.

Software maintenance management studies focus on different aspects of maintenance such as knowledge management, human factor management, process management and improvement, prediction of costs and time, use of

approaches and tools for specific maintenance tasks (e.g. code analysis as one of the most costly and demanding task or change request processing), etc.

L'Erario *et al.* (2020) conducted multiple case studies with Brazilian small and medium IT companies to inquire which strategies are the most important for software maintenance process effectiveness. The results indicate that the most important aspects of maintenance process management relate to managing users' knowledge, managing knowledge of maintenance teams, and managing maintenance processes.

Lenarduzzi *et al.* (2020) presented a literature review of code analysis tools used for predicting software maintenance, which is important for practitioners to select the most suitable one for the specific purpose. The tools are classified based on their support for software maintenance activities (static or dynamic, language support, targeted use, licensing). Tian *et al.* (2021) conducted a systematic mapping study to understand the benefits, costs, and challenges of using traceability in software maintenance and evolution. The authors identified 13 approaches and 32 tools that support traceability in 11 software maintenance and evolution activities. The main challenges related to traceability are improving the quality of traceability links, the performance of traceability approaches and tools, which is important for reducing the costs and time of maintenance activities, while increasing accuracy of performed tasks.

Hasan *et al.* (2012) conducted a qualitative case study within a small software organization aimed at identifying heuristics used for guiding and implementing maintenance processes. The authors identified three types of heuristics related to organization, individuals and different staged of projects, which represent a framework that should be used in the cases when there are no formal procedures for maintenance processes. Hassan & Khan (2017) conducted a systematic literature review to explore the state of the art of using Service Level Agreements (SLAs) in software maintenance, and by applying grounded theory they proposed preliminary SLA management framework with the following six major phases of SLA management: Service Templates Development, SLA Negotiation, Service Deployment, Service Execution, Service Assessment and Service Decommissioning. Balachandran (2020) discussed a need to integrate automatic knowledge management systems with modern collaboration tools to improve software maintenance. The main objective is to systematize the team knowledge, which includes troubleshooting tips, explanations of unexpected product behaviors, workarounds or fixes to common problems, and design rationale.

3. Micro software companies

Micro software companies are important part of software industry, providing software and services for their own clients, or delivering software solutions for large companies as contractors on larger projects. Micro companies are companies with up to 10 employees (European Commission,

2015). Another classification introduces very small enterprises (VSEs) with up to 25 employees, which are recognized in software industry as dominant form of companies (Laporte *et al.*, 2008). The main characteristic of these companies is the lack of resources, budget, and time, leading to not established processes in their practice and difficulties in implementing international standards as the best practice (Laporte *et al.*, 2016). In addition, these companies have specific business style and internal organization with mostly informal management process (O'Connor & Laporte, 2010). For these companies *ISO/IEC 29110 Standard "Lifecycle Profiles for Very Small Entities"* has been developed, which is focused on standardization of processes in VSEs.

Due to the recognized importance of micro companies, research studies started to address different aspects of their practice recently. L'Erario *et al.* (2020) presented a study aimed at inquiring how small and medium-sized software organizations in Brazil perform software maintenance processes regarding user and collaborator turnovers. Based on the study conducted with 40 small and micro software companies in South-Eastern Mexico, Cima *et al.* (2018) indicated that investments in research and development and quality improvement are more important for companies' competitiveness than initiatives related investments in marketing, human resources practices, and technological infrastructure. de Melo *et al.* (2020) conducted a field study to understand how the measurement process is implemented in 7 Brazilian small and micro software companies and conclude that measurement programs are aligned with the company strategy and provides results to top management for decision making.

Through a systematic literature review to identify factors that affect the development process in small software companies in Africa, Tuape & Ayalew (2019) identified that the most important factors are organizational, governance and business environment. Based on a survey with 385 employees from small software companies in China, Huang & Li (2021) indicated that innovative climate has positive impact on knowledge management and idea realization, leading to improvement of enterprise performances. Ochoa *et al.* (2017) inquired small companies in Chilean software industry, and based on research results suggested that generalist software companies should move to niche software companies to increase their competitiveness and business reputation. Based on the results of an exploratory study, O'Connor & Basri (2014) suggested that knowledge management practice provides a basis for process improvement in very small companies. Study aimed at diagnosing requirements engineering practice in very small software companies in Chile (Quispe *et al.*, 2010) revealed that there is a lack of focused communication with clients, while requirements engineering practice is implemented in ad-hoc manner, leading to imperfect requirements specifications and problems in implementing projects.

4. Reflections on experience

The author's experience has been gained through organizing and conducting a research project within a local micro software company. The project was jointly prepared by the author and the company manager, while in the implementation all company employees and other researchers with specific research skills (statistical methods, fuzzy methods) were involved. The main objective of the project was to assess and improve software maintenance processes. However, project implementation led to inquiring organizational issues, human factor, and knowledge management because their influence on processes in the company (see Fig. 3).

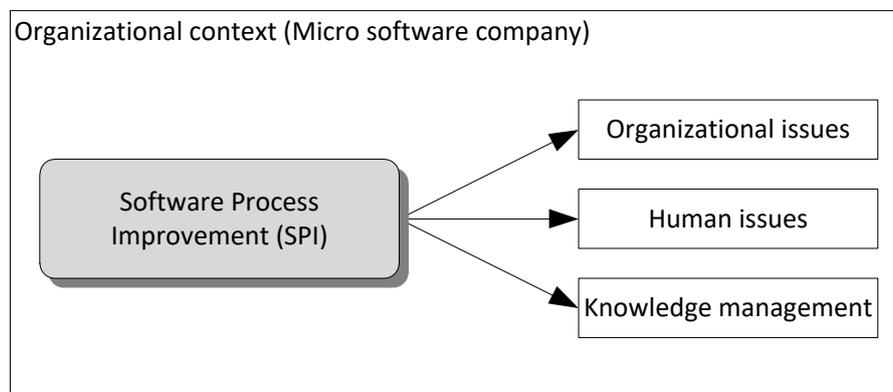


Figure 3. Software Process Improvement within organizational context

The company develops and maintains over 40 business software applications for over 100 clients in Serbia. Trend analysis of recorded developers' tasks clearly point out that more than 80% of tasks relate to software maintenance (Stojanov *et al.*, 2013; Stojanov *et al.*, 2017; Stojanov & Stojanov, 2018), which indicates the importance of researching and improving software maintenance practice in the company.

4.1 Process improvement

The primary project proposed to be implemented in the company related to Software Process Improvement (SPI), which is one of the most effective ways for improving practice in software companies. Process improvement was focused on maintenance processes in the company since they consume the largest part of programmers' daily activities. For the improvement the basic maintenance process related to handling Maintenance Requests (MRs) submitted by the clients was selected. All MRs were recorded in the internal software application for tracking MRs and associated tasks, which is the basis for charging software maintenance services. Work on solving MRs includes three types of work: working in the company, accessing clients' infrastructure over Internet, and working at the client side.

Due to the very specific internal organization within the company, and very busy working hours of programmers, it was decided that for SPI project should be used a *lightweight and inductive approach* that will not disturb regular working days in the company. All employees were included in the SPI project, but in a way that do not seriously change they typical working days. SPI project contains the following phases (Stojanov, 2021):

- *Planning*. It includes planning all relevant aspects of process improvement project, including objectives, involved people, indicative timelines, sources of data, and selection of appropriate scientific methods for collecting and analyzing data. This resulted with a plan for SPI project and a plan for process assessment.
- *Process assessment*. It includes activities aimed at collecting and analyzing data in the company with the goal to determine potential process improvements.
- *Implementation of the selected improvements*. This includes all necessary activities to implement the selected improvements at technical and organizational level in the company.
- *Long term monitoring of implemented improvements and maintenance practice*. This includes activities of monitoring and measuring parameters of the maintenance practice for a long term to conclude the effects of implemented improvements on the maintenance practice and overall business performance of the company.

Lightweight and inductive SPI approach assumes active observation of everyday practice in the company and active involvement of the company employees in the research process, which ensures that proposed improvements will emerge from the real need identified in the everyday practice. This required familiarization with the company organization and business process, which assumed spending several days in the company and observing “how things work”.

The main phase in the SPI project was process assessment, which was implemented as a set of activities aimed at assessing the current state of the maintenance processes in the company and identifying potential improvements. For the process assessment *Lightweight Inductive Method for Process Assessment based on Frequent Feedback (LIMPAF²)* was proposed (Stojanov et al., 2019). Process assessment was based on frequent feedback to the company employees to ensure that all research steps were correctly implemented, and that all intermediate data and proposed improvements reflect the current state of the practice and the real needs. The main characteristics of process assessment are:

- *Inductive*. All findings of the research process are grounded and generalized from the data collected in the company through field work.

- *Participative.* Active participation of the company employees in all phases of the project ensures that findings will reflect their real needs.
- *Triangulation of data sources and methods.* Several sources of data (interviews, practice observations, documents, databases) and variety of data types (numerical and raw text) required using both quantitative and qualitative methods for collecting and analyzing data, which increased validity of the findings.
- *Frequent feedback.* Feedback was ensured through organized meetings in the company in which the current state of the research and the current findings were presented to the company manager and the relevant programmers.
- *Support for organizational learning in the company.* Systematization of data about the processes in the company fostered identification and systematization of knowledge about the maintenance practice.

For the implementation the following improvement proposal was selected: *Optimization of maintenance requests' processing timeline with the focus on recording and triaging maintenance requests.* This included modification of internal software application for tracking MRs and database for storing all relevant business data in the company. Implemented improvement is regularly used in everyday practice in the company.

2.2 Knowledge management

As it was stated in the previous subsection related to process improvement, any SPI project provides support for organizational learning and knowledge management. Success of SPI project is closely related to getting the real data about the practice, and these data is also valuable starting point for identification and systematization of knowledge about the practice (Stojanov, 2019). However, implementation of knowledge management project should consider variety of factors that can impact its success and increase usefulness of the findings (Stojanov & Dobrilovic, 2019).

The main idea in systematizing knowledge on software maintenance was conversion of tacit knowledge residing in programmers' heads into implicit knowledge available to all employees in the company. Variety of sources were used for identifying knowledge, such as interviews with the employees, observation of everyday practice, company documents, records extracted from internal database, and records from feedback sessions in the company (meetings organized in the company for discussing the state of the research). Knowledge identification and systematization was realized through joint analysis of collected data by the researchers and employees, whose important role was validation of created framework with systematized knowledge (Fig. 4).

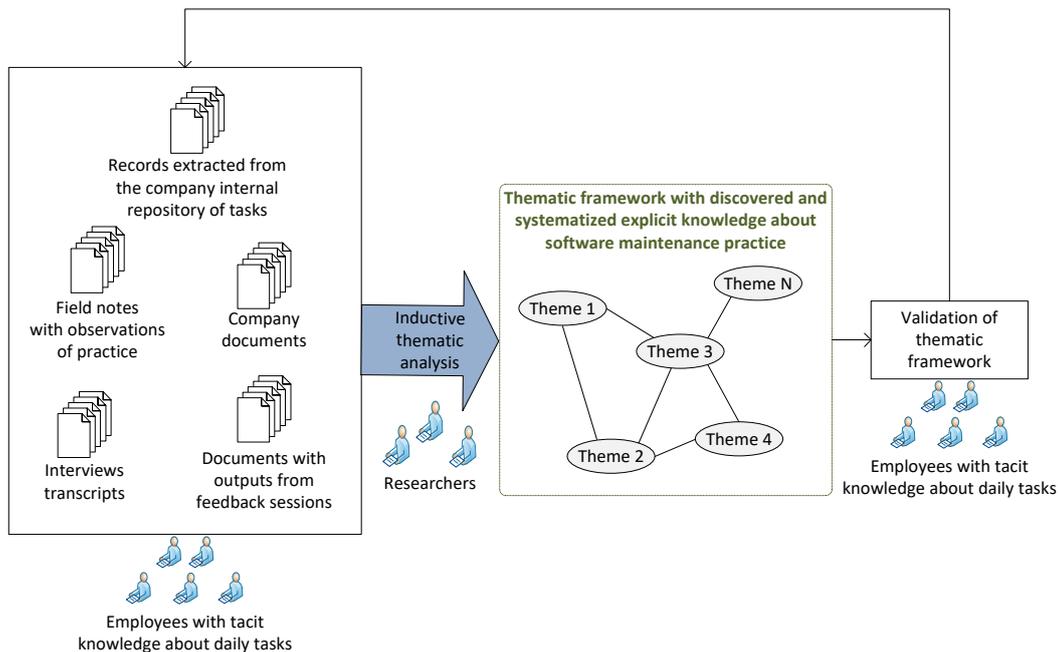


Figure 4. Knowledge management subproject in the company

Systematized knowledge was developed as a thematic framework by using inductive thematic analysis (Attride-Stirling, 2001; Braun & Clarke, 2006), a qualitative research methodology originated in social sciences.

Knowledge framework contains knowledge relevant for software maintenance practice since it emerged from data collected in the company. Knowledge is organized in three thematic areas with themes important for maintenance practice. Thematic areas are:

- *Processing maintenance requests.* It contains technical issues related to MRs and activities needed for processing them.
- *Human factor.* It contains issues related to humans involved in maintenance practice (programmers and clients).
- *Company business policy and organization.* It contains issues related to internal organization in the company and some policies that govern processes and activities.

2.3 Organizational issues

Software maintenance processes are situated in the organizational context in the company which influences all activities. At the other hand, execution of processes also impacts internal organization in the company, its relations with clients and positioning at the market. Identification of organizational issues in the company was done within the SPI project, and particularly through subproject related to knowledge management practice in

the company. Identification of organizational issues as a specific thematic area of the practice was done by using inductive thematic analysis.

Through inductive thematic analysis of software maintenance practice the following themes related to organizational issues were identified:

- *Managing relationships with clients.* Clients are the main source of profit for the company and managing relationships with them is essential for overall business performance of the company. This includes management of Service Level Agreements (SLAs) for arranging maintenance services, classification of clients in order to prioritize MRs, and selection of reliable users within clients' organizations that can submit valid MRs.
- *Distributing programmers' responsibilities and work.* Programmers perform maintenance task within organizational context, which assumes distribution of responsibilities and work to achieve balanced workload and fast processing of MRs.
- *Maintaining versions of software products.* The company has over 100 clients and tracking which version of software products are used by which clients is essential for sustaining and increasing the quality of maintenance services and delivered software products.

2.4 Human factor

It has been recognized in software industry that the most important asset in software companies are people that possess skills and knowledge for performing tasks. The selected micro company has 3 senior programmers with over 15 years of experience in average and 3 junior programmers. Inquiry of human factor was performed during knowledge management subproject within the main SPI project, because it has been evident that programmers are the main source of data on how software maintenance processes were performed. Human factor issues were identified through inductive thematic analysis, in the same way as organizational issues.

Through inductive thematic analysis of software maintenance practice the identified themes related to human factor were classified to themes related to programmers' characteristics and themes related to clients' characteristics (Stojanov, 2019). Programmers' characteristics are cognitive characteristics, organizational skills and working experience. Clients' characteristics are domain knowledge, communication skills and technical knowledge. All these characteristics interrelate and influence how maintenance processes are performed. For example, programmers' working experience with technical issues and variety of activities will positively influence organizational skills related to organizing personal tasks or organizing teamwork for more complex tasks.

5. Conclusion

In this paper, the importance of software maintenance practice in micro software companies is emphasized. Since micro and small software companies comprise majority of companies in software industry, any empirical research related to their practice has important contribution to the knowledge base. This knowledge base is valuable for both researchers and practitioners from industry.

The presented experience has been gained through several years of inquiring maintenance practice in a local micro software company, while several published papers present details of different aspects of the experience. More comprehensive research conducted in a larger number of micro and small software companies is further research assignment, with the objective to gain a more comprehensive insight into the state of software maintenance practice.

Acknowledgment

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ANALYZING THE IMPORTANCE OF THE BANK
LOANS AS FINANCING SOURCES OF SMES
BETWEEN KOSOVO AND NORTH MACEDONIA

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Abstract

SMEs financing is one of the most important factors that influence SMEs growth and development in every country. Among researchers around the world this is always an important topic which needs continual research from different approaches. Knowing the importance of SMEs on the economic development of every developed and developing country and being aware that without financing the SMEs growth and development isn't possible it is very importance to analyze the financing sources of SMEs in both neighbor countries. Bank loans are considered as the most important external financing source for SMEs around the globe.

In this paper we are going to analyze the importance of bank loans as financing sources of SMEs based on comparative analysis between Kosovo and North Macedonia.

Research methodology is compound by primary and secondary data, where, primary data was collected through quantitative research conducted on 300 SMEs in the Republic of Kosovo and 300 SMEs in the Republic of North Macedonia, while, the secondary data we have collected from state institutions, EU reports, research reports, etc.

The results revealed that in both countries more than 50% of SMEs use bank loans as external sources of financing.

The findings suggest at the end for some future lines of research and provides recommendations for the main stakeholders of this field of study

Keywords: SMEs, Financing, Banks, Kosovo, North Macedonia, Comparison

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1. Introduction

More than 99% of businesses in Kosovo and North Macedonia are SME-s. This percentage shows us that the SME-s development has a key role in the economic development of our countries.

Bank loans are one of the main sources of external financing for SMEs in both countries. The binominal business - bank relationship is critical for the growth and development of SMEs. Like in the other countries, SMEs in Kosovo and North Macedonia when they do not have enough internal funds to finance their business activities, they seek external funds, which usually are bank loans (Kunoviku Demiri, Tmava & Durguti, 2021).

The role of finance has been a critical element for the development of SMEs. Financial institutions play various roles and multiple functions in an economy. Banks main role as intermediary is to provide credit and liquidity, moreover, banks are the main source of financing/SMEs amongst others. As previous studies have shown that access to available financial resources is limited for SMEs to large enterprises and this can have consequences on their development (Levy, 1993). More importantly, studies using firm-level survey data have shown that one of the factors that constrain SMEs (affect their performance) is access to finance and the cost of credit to be greater (Beck, Demirgüç-Kunt, and Pería, 2011).

Like in the other countries, SME-s in Kosovo and in North Macedonia when they do not have enough internal funds to finance their business activities, they seek for external funds which usually are bank loans. This is exactly the reason why we chose to make research in this field, because, it is very important to analyze the importance of bank loans as external financing sources of SMEs in Kosovo and North Macedonia.

2. Literature review

Creating a competitive and integrated economy based on knowledge and innovation is a key condition for macroeconomic stability, economic growth and employment. In process of generating economic growth and job creation especially is important the role of SMEs (Risteska-Jankuloska, Sotiroski, Gveroski, Spaseska, & Risteska, 2016).

Bartlett and Bukvic identify two views about the main barriers to growth. The first they call the "finance-first" approach which maintains that the key barriers to SME growth are linked to financial constraints. These could in principle be overcome by the provision of subsidized or low-cost finance, by the creation of credit guarantee agencies, through micro-credit schemes, or through the establishment of venture capital funds. The second view, which they call "institutional" approach maintains that non-financial barriers are the key barrier to growth, like: unfair competition, corruption, etc (Bartlet, Bateman, & Vehovec, 2002, p. 6).

Numerous studies have been conducted on financing research; the two most fundamental sources of financing are debt and equity (Broom et al., 1983; Longenecker et al. 1994). Debts are described as funds borrowed to be paid in future specified time period with interest amount (Anderson & Dunkelberg, 1993). Whereas in equity, investment is made in order to get share/ownership part in firm and whose profits are essentially in view of the benefits. SMEs can be funded internally and externally; internally generated funds include investment profits, sales of assets, extended payment terms, reduction in working capital and accounts receivable; whereas, external sources are firm owners, companions and relatives, banks and financial institutes, suppliers and merchants, government and non-government offices (Hisrich & Peters, 1995) (Abbasi, Wang, & Abbasi, 2017).

Access to finance is key to business development. Investment and innovation are not possible without adequate financing. A difficulty in getting finance is one of the main obstacles to the growth of many businesses, particularly small and medium sized enterprises (SMEs). Financial flows to SMEs are increasing but remain subdued. Access to finance is still perceived as an important problem by several SMEs. Comparing different types of enterprises, micro-enterprises and more innovative businesses in particular consider their financing as the most pressing problem. Bank loans remains the most important source of external financing for SMEs in the EU (Commission, Survey on the access to finance of enterprises, 2014).

3. Research methodology

The research paradigm is quantitative and qualitative. We designed a questionnaire for SMEs in Kosovo and North Macedonia which contained 25 questions. Our targeted population in this research are trading and manufacturing SMEs from all the regions in both countries Kosovo and North Macedonia. The total population of SMEs in our research is presented in the table below.

Table 1. The number of the research population, RKS, and RNM

	Kosovo	North Macedonia
Trading	15,969	21,000
Manufacturing	4,893	7,447
Total	20,862	28,447

(Source: Kosovo Statistics Agency, State Statistical Agency of North Macedonia)

In both countries, we used random samples in selecting SMEs for surveys in both sectors because it is considered a fair way of selecting a sample from a given population since every member is given equal

opportunities of being selected. The period of collecting data is from June 2018 to March 2019.

Our research sample is explained as below:

- A survey with 300 SMEs in the Republic of Kosovo.
- A survey with 300 SMEs in the Republic of North Macedonia.

This study is compound from primary and secondary data. The primary data was collected through questionnaires conducted with representatives of SMEs, while the secondary data is based on the literature review from different authors and also data from institutions of the RKS and North Macedonia.

4. Discussion of research results

Plentiful research has been done on SME financing through bank and documented that banks are the main external source of funding for SMEs in both developed and growing economies (Vera & Onji, 2010; Ono & Uesugi, 2009; Zhou, 2009; Wu et al., 2008; Carey & Flynn, 2005). Bank credit is considered to be more expensive as compare to other available sources of finance but it generates huge return for SMEs, further SME can perform better at all level under bank credit due to being monitored by and answerable to banks (Abbasi, Wang & Abbasi, 2017).

Through our research, SME-s were asked if they have ever financed their business through Bank loans, and, from the results we can see that in Kosovo 158 or 52.7% of SMEs answered that they have financed their business through bank loans, 140 or 46.7% answered that they haven't financed their business through bank loans and 2 or 0.7% answered that they applied for bank loan but their request was refused. While in North Macedonia, 172 or 57.3% of SMEs answered that they have financed their business through bank loans, 112 or 37.3% answered that they haven't financed their business through bank loans and 16 or 5.3% answered that they applied for bank loan but their request was refused.

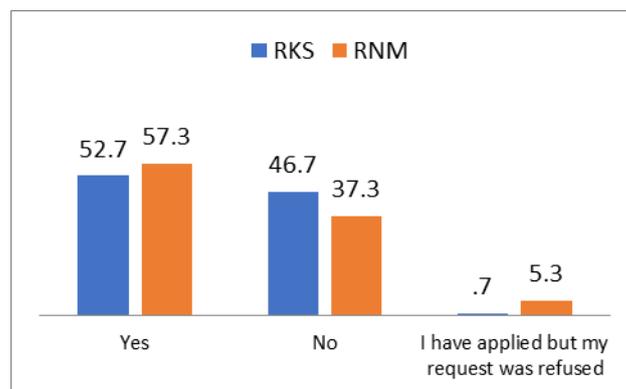


Figure 1. The percentage of the SMEs regarding the usage of bank loans, RKS and RNM (Source: Author)

From the results obtained we can see that more than 50% of the SMEs in both countries use bank loans to finance their business activities.

The SMEs were also asked about the type of loan that they received from Bank, and, from the results obtained in Kosovo: 32.9% of the SMEs received operating loan⁴, 66.5.0% of the SMEs received investment loan⁵ and 1 or 0.6% of the SMEs received mortgage loan⁶.

Regarding the type of loan that the SMEs received from bank in North Macedonia, we have the results as: 29.1% of the SMEs received operating loan, 33.7% of the SMEs received investment loan and 37.2% of the SMEs received mortgage loan.

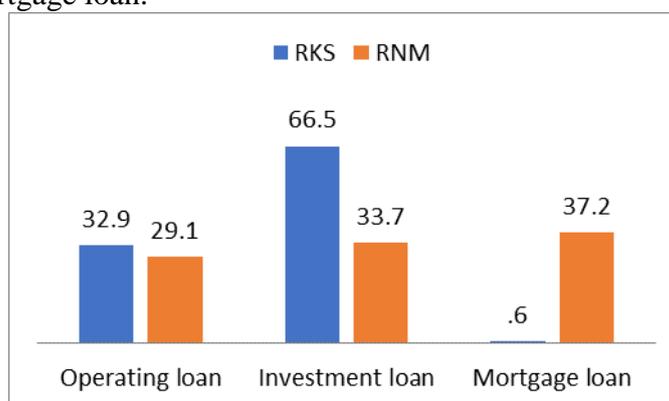


Figure 2. Valid percentage of the loan type that the SMEs received, RKS and RNM (Source: Author)

As we can see from the results obtained in Kosovo the SMEs are more oriented on investment loans, while, in North Macedonia the SMEs are more oriented on mortgage loans.

Furthermore, the SMEs were asked about the percentage of the loan amount that was destined for investment.

⁴ A loan that is intended for short-term financing. This type of loan is often used for cash flow support or to cover operating expenses from day to day

⁵ A loan granted by banks for the acquisition of fixed assets such as property, equipment and other machinery. The loan can be used for any development activity

⁶ A loan that is secured by property or real estate is called a mortgage. In exchange for funds received by the homebuyer to buy property or a home, a lender gets the promise of that buyer to pay back the funds within a certain time frame for a certain cost. The mortgage is legally binding and secures the note in giving the lender the right to have legal claim against the borrower's home if the borrower defaults on the terms of the note. Basically, the borrower has possession of the property or the home, but the lender is the one who owns it until it is completely paid off

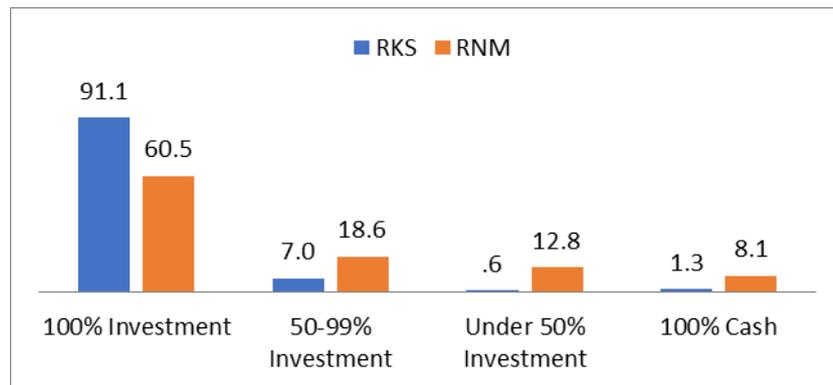


Figure 3. The valid percentage of the SMEs loan destined for investment, RKS and RNM (Source: Author)

From the results obtained we can see that in both countries SMEs have invested for around approximately more than 70% of the total amount of the loan received.

Through our comparative analysis in both countries, we revealed that more than 50% of the SMEs from our sample use bank loans as external sources to finance their business. Furthermore, SMEs in Kosovo borrow more investment loans, while in North Macedonia are more oriented on mortgage loans. Moreover, results revealed that more than 70% of the total amount of the loan received by SMEs in both countries was used for investment.

5. Conclusion and recommendations

The importance of bank loans as external sources of SMEs financing, for years, have been an object of the debate both in developed and developing countries. It is important to mention that they have been an object of debates not only between academics but also in the business world. In our research, we have analyzed the importance of bank loans as external source of SMEs financing in the Republic of Kosovo and the Republic of North Macedonia, which are part of the Western Balkan Countries. From the analysis of the results, we can conclude that in both countries more than 50% of the SMEs use bank loans as external sources to finance their business activities. Furthermore, we revealed that the SMEs in Kosovo are more oriented to borrow investment loans, while in North Macedonia SMEs are more oriented to borrow mortgage loans. Moreover, results revealed that more than 70% of the loan amount borrowed by SMEs in both countries was used for investment purposes.

Our findings comply with the findings of other authors which state that the most commonly used source of external finance for small firms is bank loan (see Hughes and Storey 1991; Riinvest 2006). The resources of small firm owners are usually limited, especially for new and small businesses. Thus, the growth-oriented small firms will need external sources of finance supplied by banks (Krasniqi B. A., 2010).

Accordingly, access to finance is a significant issue for North Macedonian SME's. Most of the companies have used bank loans, although, they have initially suggested that commercial banks are offering banking loans with high interest rates (Boshkoska & Lazaroski, 2016).

The crediting, as an external source for financing small and medium enterprises is traditionally most frequent, but at the same time it is an expensive way of financing (Risteska, Nikoloski, Gveroski, Spaseska, & Risteska, Analysis of SMEs Financing in the Republic of Macedonia - Conditions and Perspectives, 2014).

From the results revealed from our qualitative research, we can conclude that bank loans as external sources of SMEs play a key role on the SMEs growth and development.

From the debates of different scholars in this field, we are aware of the importance of the bank loans borrowed by SMEs. Therefore, given the importance that SMEs have on employment, innovations, and economic growth, we recommend to:

policymakers to:

- create policies to fight informality and to stimulate formality
- increase the competition in the financial market through licensing new Banks.

commercial banks to:

- decrease the interest rates of SMEs loans

SMEs to:

- declare properly the financial statements when applying for bank loans
- pay loan installments on time, considering that good credit history and performance, helps SMEs to qualify for lower interest rates and fees.

The topic analyzed as explained is very important for SMEs development and economic development of every country. In our research, we have analyzed only the bank loans borrowed by SMEs in both countries. Moreover, we are aware that other variables must be analyzed which influence SMEs financing through bank loans. According to this, we open some lines for future research.

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CHALLENGES OF THE INTRODUCTION OF THE
DIGITAL EURO - SEARCH FOR A COMPATIBILITY
MODEL FOR NORTH MACEDONIA

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Abstract

The introduction of the digital euro will have an impact on the implementation of the financial policy of North Macedonia. Based on an assessment of its own interests and capabilities, North Macedonia can decide on a model for compatibility with the digital euro. The paper analyses three possible models for cross-border system compatibility. Assuming that a digital euro provides a new channel for the transmission of domestic monetary policy shocks, the basic cross-border effects of the introduction of the digital euro can be summarised as an increase in euroisation, a reduction in monetary policy independence and a reduction in the creditor function of last resort. These effects need to be countered with integrated smart features such as automatic remuneration and bilateral cooperation with the ECB or a combination of these models. According to the analysis, this functionality can be achieved through the model, which is a technological bridge between the systems, as opposed to the model, which is a separate system, or the model, which is integrated. Although the proposed model is the most desirable in terms of potential gains and addressing potential risks, this model involves the development of an own digital currency (digital denar).

Keywords: Digital Euro, Compatibility Model for North Macedonia, Digital euro Challenges.

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1. Introduction

Research on the advantages and disadvantages of introducing centralised central bank digital currencies (CBDCs) has been particularly topical recently. Indeed, numerous advantages are highlighted and a number of pilot projects exist, regardless of the degree and size of the countries. Given the importance of the euro area and the euro integration process, the introduction of the digital euro is of particular importance in research. The digital euro could benefit the entire economic policy of the European Union (EU), as it is a secure digital asset with state-of-the-art features, in addition to currency, capable of meeting the evolving payment needs of a modern economy. The public sector may be best placed to provide the security, scale, level of accessibility and convenience required for individuals, businesses and financial institutions to engage in digital payments.

Depending on the model chosen, not only the non-euro countries of the EU are affected, but also third countries, especially those in the process of European integration, including North Macedonia. Unfortunately, there are very few studies of this kind, even in conceptual form, both because of the uncertainty about the final model of the digital euro, whose introduction is more important especially for retail than for wholesale, and because of the passive attitude of small open economies, whose fate is expected sooner or later in the euro area, so that the strategy of waiting is the most acceptable.

One of the main objectives of the introduction of the digital euro is to expand the international role of the euro. According to ECB the digital euro will be introduced alongside cash, and it would not replace it³. Thus, there is one goal of expanding the international importance of the euro, which is to be expected to be affected in a certain way in North Macedonia. North Macedonia is highly euroized country (high share of credit and deposit euroization) with a fixed exchange rate pegged to the euro. The issue of currency sovereignty is not crucial for the country. Remittances from abroad in euro are a significant source of foreign exchange in the country. Additionally, North Macedonia has agreement with the ECB for the use of repo agreement which provide exchange rate stability.

Taking into account the adopted account-based model of the introduction of the digital euro on the one hand, and the interests of North Macedonia on the other, the paper analyses the strategy and fundamentals of a model-based solution approach that would be compatible with the digital euro and would allow for rapid integration with minimal adjustment costs. The main objective of this paper is to open the conceptual issues of the impact of the introduction of the digital euro for North Macedonia, as well as to highlight the limitations and obstacles.

³ European Central Bank, Report on a digital euro, October 2020, p. 6, available at https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf, accessed: 9 August, 2022, further in the text: Report on a digital euro.

Macedonia has to rely more on its own development, although this implies the use of an interlink model, which implies the use of the positive effects of digital currency through a system that will be compatible or linked to the ECB.

The ECB analysis highlights the necessity for a cap on the usage of a digital euro outside the eurozone, particularly when considering the cross-border effects. To be coordinated through international coordination with other central banks, such a limit may be required to stop uncontrollable capital flows (Report on a digital euro, 2020). To ensure that it does not cause unduly volatile money flows or exchange rates, the architecture of the digital euro should incorporate certain conditions for access and use by citizens outside the euro region.

However, the National Bank of North Macedonia cannot be forced to start building its own CBDC. Nevertheless, the National Bank of Northern Macedonia is still free to decide now whether it wants to participate in the architecture of the system. Later, when the technological gap between the Eurozone and North Macedonia widens, it is more likely that North Macedonia will have to resort to ready-made EU solutions in order to maintain control over currency flows and its own monetary policy. Therefore, it would be best for the National Bank of North Macedonia to re-evaluate its position on a digital denar and work aggressively with the EU now to create a cross-currency system suitable for its own monetary policy (Pečarić et al, 2022).

Within the proposed models of BIS (2021) as a theoretical starting framework and considering the constraints of North Macedonia, an active adjustment strategy is proposed. The challenges of the digital euro are an opportunity to improve and reform the financial system of North Macedonia with the help of FinTechs in order to make finances more efficient. For the case of North Macedonia, we propose networked CBDC systems. It could expand these potential improvements and provide more protection.

The content of the paper is reproduced below: The second part is dedicated to the possible choice of the digital euro model and the cross-border implications of the digital euro. The focus is on the trade-off between the choice of model and the expected impact, with financial technologies aimed at achieving the objectives. Based on the findings of the second part, the possible strategies and models of compatibility with the digital euro in Northern Macedonia are analysed in order to select a conceptual model. New insights on this topic can be found in the concluding remarks at the end.

2. Digital Euro

2.1. The digital Euro probable model

According to Pečarić et al. (2022), we can assume that the most likely design of a digital euro will be a legal tender built on a hybrid account-based system with potential tokenisation features at a later stage. Cipollone (2021) stresses that the creation of the digital euro is a very complex project from an economic, technical, legal and organisational point of view. The choice of an institutional solution is a weighing of the advantages and disadvantages of the identified models in the context of achieving the set objectives with the introduction of the digital euro. The new means of payment must be widely available, even to those who do not have a bank account, easy to use, secure and resistant to cyber-attacks or network failures. It must also protect privacy and allow for verification. One of the biggest challenges will be to limit bank disintermediation. Although this risk is probably overestimated, it is crucial for Europe as European businesses, especially SMEs, rely heavily on bank intermediation. Papers and publications from ECB mention two main models, the account-based model and the token-based model. The account-based model is further divided into direct trading, indirect trading and hybrid digital euro trading. Each of the models has its advantages and disadvantages.

The analyses show that the objectives of the digital euro are best achieved in an account-based model - a hybrid retail form - as it enables improved digital efficiency at a very high level, has similar characteristics to cash and enables competition and digital transformation of the European Union and the banking sector. In addition, the security system will be fulfilled, the international role of the euro will be significantly strengthened, cost savings will be clearly visible and environmental sustainability will also be fulfilled. Financial inclusion is much more promoted, financial stability is visible, anonymity of transactions is not fulfilled in any model, including this one. The main arguments in favour of the account-based model, or more precisely the hybrid model, are the use of the infrastructure already in place, which allows lower costs for the introduction of the digital euro, technological resilience and resource efficiency.

2.2. Cross-border effects of a digital euro

Through integrated smart features such as automatic remuneration, bilateral engagement with countries that have adopted the euro, or a mix of these two strategies, cross-border effects, particularly in terms of currency

substitution and currency hoarding, need to be addressed. Without these safeguards, negative effects could occur both within the euro area and in the affected countries outside the euro area. The analysis of ECB underlines the need for a cap on the use of a digital euro outside the euro area, especially when considering the cross-border implications. Such a cap needs to be coordinated internationally with other central banks to stop uncontrollable capital flows (Report on a digital euro, 2020). To ensure that it does not cause excessively volatile money flows or exchange rates, the architecture of the digital euro should include certain conditions for access and use by citizens outside the euro area. The introduction of a digital euro is expected to have several cross-border implications.

First, a digital euro could amplify the cross-border spillover effects of monetary policy shocks by providing a new channel for the transmission of domestic shocks. New digital forms of payments could circumvent existing techniques for managing capital flows, such as CBDCs, if they are not prohibited by design or policy. Existing transaction verification procedures could be rendered useless by new payment instruments and service providers. To ensure that measures to monitor capital flows remain resilient in the digital age, existing rules and implementation procedures need to evolve. Carefully designed CBDCs equipped with modern technology, on the other hand, can help.

Secondly, the availability of a digital euro could lead to currency exchange and 'erosion' in third countries, especially those with weak currencies and economic fundamentals, and those with significant trade links with the EU. The cross-border availability of CBDCs could minimise the cost of obtaining, holding and issuing foreign money, depending on the design and regulation. International currencies already have strong network effects, and falling prices could make existing established international currencies even more attractive. The issuance of CBDCs by foreign central banks could strengthen the reputation of some international currencies and harm others. This could lead to greater substitution of currencies with foreign CBDCs, especially in countries with high inflation and unpredictable exchange rates. As the IMF (2020) notes, currency substitution is already widespread and persistent (foreign currency deposits exceed 50 per cent in more than 18 per cent of countries worldwide). While lack of confidence in one's currency is the main cause of currency substitution, rapid currency substitution due to domestic political problems may jeopardise governments' efforts to improve domestic policies.

Third, the widespread adoption of a digital euro outside the euro area could have significant implications for the monetary sovereignty of the

countries concerned. Large-scale currency substitution would jeopardise monetary independence and pose a threat to both home and host countries. Shifts in foreign demand for CBDCs could lead to major changes in capital flows that could alter monetary policy in the issuing country. This could choke off the monetary policy transmission mechanism, i.e. how policy-induced changes in monetary policy instruments such as short-term nominal interest rates affect macroeconomic variables. Foreign currencies issued by countries whose business cycles differ from those of the host country would lead to inadequate monetary policy control and more unpredictable inflation in the host country, with a disproportionate impact on poorer and weaker families.

Fourth, currency substitution could jeopardise the ability of the domestic central bank to act as a lender of last resort. Since the central bank is unable to create foreign exchange to provide liquidity support when domestic banks have large liabilities in foreign currency, which may be the case with large-scale currency substitution, the central bank must rely on foreign reserves or the provision of liquidity by foreign central banks.

3. Model for North Macedonia

For CBDCs to promote the improvement of cross-border payments, a number of factors need to be taken into account. The BIS (2021) report approaches these issues from two angles: first, from a practical perspective, on how a cross-border payment infrastructure with CSDs could be established; and second, from a macro-financial perspective, looking at the potential increase in cross-border payment flows, potential threats to financial stability and currency substitution, and reserve currency configurations and backstops.

There are two fundamentally different ways to think about cross-border payments with CBDCs. The first scenario assumes that anyone inside and outside a given jurisdiction can buy a retail CBDC, with no coordination between issuing central banks. In this scenario, non-residents would automatically have access to it, provided the design supports anonymous payments such as cash. In reality, however, few central banks are considering such systems. Unlike cash, the technology and legal framework of the CBDC could be used to apply a variety of cross-border usage restrictions. The national design of a CBDC affects this first situation. The second scenario assumes some degree of CBDC interoperability based on access and settlement agreements to enable cross-border use of CBDCs from two or more jurisdictions. Such arrangements can link wholesale and retail CSDs across international borders, require close coordination between CBDCs and involve technical, market structure and regulatory issues. This second scenario, which

is the main subject of the study, depends on the decisions on the design of the interoperability infrastructure.

All other factors being equal, cheaper and faster cross-border transactions could increase the likelihood of local banking and currency flooding. Substitution of currencies or exchanges from one currency to another can be rapid. In many emerging and developing economies, a run on the banking system is effectively already a run on the national currency as money flows out of the country (Leaven and Valencia, 2018). In addition, lower transaction costs in foreign currencies can lead to increased foreign currency risk for families, businesses and perhaps institutions, posing a threat to financial stability.

Transactional security, mass inclusion and cost efficiency are just some of the key benefits of a CBDC system (Bindseil, 2020). The risk of bankruptcy of the deposit-taking bank is also eliminated by a digital euro, making it safer than deposit money. However, the benefits of a digital euro must be weighed against the dangers of its introduction, and it should only be introduced in a way that is tailored to the specific characteristics of the financial system. This poses dangers for the Macedonian financial system, considering the possible issuance of the digital euro. On the other hand, a concentration risk may arise if citizens rely more and more on digital payments and the use of banknotes eventually declines. Due to economies of scale, there will always be a higher degree of concentration in this situation. Larger companies would therefore likely form oligopolies or monopolies and possibly increase the cost of payment services. Consequently, prices for goods and services will increase, which could reduce the productivity of the Macedonian economy. Second, due to the strategic importance of payments to national economies, there is a risk that larger international players in the sector could quickly gain control of the Macedonian payments industry, putting the country in a weakened position where it would be difficult to maintain its own monetary sovereignty (Pečarić et al, 2022).

3.2. Models of cross-border CBDC system compatibility

Compatible CBDC systems (Model 1) could complement existing central bank money markets as a way to settle cross-border transactions. If open, competitive and interoperable domestic payment systems are developed that allow a wider group of banks and non-banks to access central bank money for payment settlement, a wider range of cross-border and cross-currency

"front-end" payment services could be available. This could help reduce payment fragmentation and concentration.

Networked CBDC systems (Model 2) could extend these potential benefits while enhancing security. For example, PvP settlement could be integrated via a technological bridge between household systems. New technologies (e.g. from the Bank of Canada (BOC) and the Monetary Authority of Singapore (MAS) (2019)) could make this possible. Common clearing methods, especially if linked to FX venues, could potentially improve efficiency.

Finally, a single mCBDC system (Model 3) could offer the same benefits as linked systems, but with more integration. For example, instead of requiring routing or special settlement instructions through an interface, all FX settlements would be PvP by default (see glossary). Trading venues could potentially be linked to mCBDC systems, which would reduce complexity, fragmentation and concentration in FX markets (assuming the right design) (Bank of Thailand and Hong Kong Monetary Authority (2020)). Such a model was used for Project Dunbar and Project Aber (see SAMA and CBUAE (2019, 2020)), and it even goes a step further with the joint issuance of a CBDC used in the single mCBDC arrangement (see SAMA and CBUAE (2019, 2020)). The issued CBDC was virtually guaranteed a fixed exchange rate to both local currencies for the duration of the proof of concept, as both the Saudi riyal and the UAE dirham are pegged to the US dollar.

Table 1. Potential improvements of various CBDC arrangements related to the current frictions in cross-border payments.

Frictions cross-border Payments	Model- 1 mCBDC arrangement based on compatible CBDC systems	Model-2 mCBDC arrangement based on interlinked CBDC systems	Model-3 single mCBDC multi-currency system
Legacy technology platforms	Compatible systems allow for efficiency gains in existing banking relations	A common clearing mechanism could reduce the number of relationships and provide economies of scale	A single system does not require such relations (however, a single system may add to operational costs)
Limited operating hours	CBDCs can be open 24/7, eliminating any mismatch of operating hours		
Fragmented and truncated	Compatible message standards allow	The message standard (e.g. ISO 20022) adopted by the	Single message standard across the

data formats	payments to flow without data loss or manual intervention	interlinkage would act to harmonize standards across systems	system eliminates mismatches
Unclear FX rates and unclear incoming fees	Compatibility requirements for wallet providers could enable users to calculate fees and rates prior to a payment	Common calculation of rates and fees for transfers using any interlinkage would aid transparency	A single system would likely be designed to include options for FX conversion
Long transaction chains	CBDCs could settle instantly, reducing the need for status updates		
Complex processing of compliance checks	Compatible compliance regimes reduce uncertainty and costs	Interlinking systems do not impact multiple or conflicting compliance requirements	Single set of access requirements means compliance could be equivalent across the system

Source: Adapted from Auer R., Haene and Holden (2021), “Multi-CBDC arrangements and the future of cross-border payments”, BIS Papers No 115

After the preceding discussion, it is impossible to determine what kind of cooperation will exist between the other central banks and the ECB. It will depend on the degree of integration into the European financial system. Depending on how well a state meets the requirements for the introduction of the euro in general, there may be differences. Later, as the technological gap between the euro area and other non-EU countries widens, it is increasingly likely that they will be forced to adopt ready-made EU solutions in order to maintain control over money flows and their own monetary policy. It is therefore in the best interest of the central banks of other countries that are heavily oriented towards the euro to actively cooperate with the EU at this early stage in order to develop a cross-currency system that is suitable for their national monetary policies.

3.3. Models of cross-border CBDC and North Macedonia

Connecting payment systems is a difficult task and often requires compatibility measures. In reality, this can take two forms: (a) a common technological interface or (b) a common clearing mechanism (which in the case of CBDCs could be through decentralised mutual accounts or a more centralised common clearing house or system). Participants in one system can send payments to participants in another system thanks to a common technical interface supported by contractual arrangements between the systems. A

common clearing house (Figure 1) follows a different strategy and connects systems through dedicated settlement accounts instead. Arrangements for CBDCs could include foreign exchange provided by central banks or private companies. A trusted third party could serve as a clearing mechanism for participating central banks in a more centralised model. For example, if the CBDC is offered domestically through a hybrid CBDC architecture that allows the private sector to connect to the central bank server in a flexible manner, this would favour common technological interfaces and a centralised common clearing mechanism. Directly offered CBDCs would arguably be better suited to a decentralised approach, with central banks providing users with foreign exchange or access to other currencies through bilateral arrangements with other central banks. Building a robust ecosystem with the right balance of incentives for users to use the system safely and efficiently is a significant undertaking with significant risks. In particular, if CBDC is distributed by the private sector, significant difficulties may arise from disrupting the business models of incumbents (e.g. a new connection might require participants to invest too much or compete with their existing profitable services). A lack of full compatibility may also imply costs and risks that would make the use of interconnection unattractive. In the past, simply interconnecting systems without spending money on broader coordination to achieve interoperability was not enough to enable effective cross-border payments. However, if systems have a high level of interoperability, improvements in security and efficiency are possible. Systems that are interconnected can perform various functions that are not possible in purely informal arrangements (e.g. PVP maintained through a technical interface) (Auer, Haene and Holden, 2021).

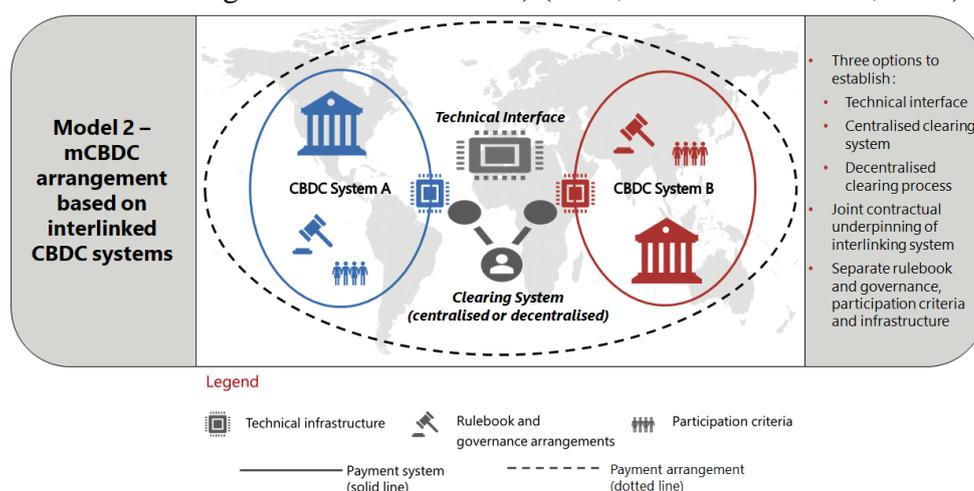


Figure 1 mCBDC arrangements based on linking multiple CBDC systems – Model 2
Source: Auer, Haene, and Holden (2021).

Interestingly, the results of the BIS survey by Auer et al. (2021) show that most central banks are undecided about the mCBDC. Moreover, more than a quarter of central banks are considering incorporating interoperable features when setting up their CBDCs to reduce frictions in cross-border and cross-currency settlement. According to the responses, linking the local CBDC system with a foreign system is the mCBDC configuration, the most favoured option. Most central banks are also considering taking over operational responsibility. The degree of involvement could vary widely, from providing liquidity directly to monitoring and facilitating foreign exchange conversions.

Similarly, we propose this model because:

- It is better to work on this issue and to be ready
- The Central Bank of Macedonia will show that it is capable of designing its own CBDC.
- Given that the Macedonian economy is highly dependent on remittances from abroad, this will reduce the cost and percentage of cash transfers across borders (thefts, penalties, etc.).
- In the meantime, North Macedonia can integrate into the payment infrastructure to be ready later when it joins the EU. In order to achieve a higher level of payment integration with the EU, the system for cross-border payments in euro should be restored by connecting the Macedonian Interbank Payment System (MIPS) with the payment system TARGET 2 (Trans-European Automated Real-time Gross settlement) Express Transfer system).
- This will encourage the private sector (especially banks, but also other financial institutions) to innovate in the area of payments.

PvP settlement could be integrated through a technical link between domestic systems. According to the Bank of Canada (BOC) and the Monetary Authority of Singapore (MAS) (2019), new technologies could enable this through creative methods. In addition, joint clearing processes, when linked to FX venues, could offer greater efficiency.

On the other hand, however, this is optimistic given the past behaviour of the National Bank of Republic of North Macedonia (NBRNM). After all, although the NBRM was connected to TARGET 2 through the Central Bank of Italy, this facility was terminated in 2018 and there is still no will to restore it. At the beginning of 2017, the National Bank of the Republic of Macedonia

started operating a system for cross-border payments in euro by connecting the Macedonian Interbank Payment System (MIPS) to TARGET 2 of the Eurosystem. To this end, the bank's MIPS was upgraded to make euro payments and connect to TARGET 2 through the Central Bank of Italy, making MIPS a dual currency system for payments in denar and euro (NBRNM, 2017). Later, with the changes to the operating rules of the Macedonian interbank payment system, without further explanation except that the Italian central bank increased the fees, the NBRNM restricted this channel (NBRNM, 2019).

4. Conclusion

North Macedonia, as a small open economy in the process of EU integration, must take into account the changes in the Eurozone monetary system with the introduction of the digital euro. One of the objectives of the introduction of the digital euro is to strengthen the international role of the euro as a world reserve currency. Although the model for the introduction of the digital euro is likely to take the form of a hybrid account base model, which primarily concerns the retail sector, the need to develop a strategy or compatible model arises due to the cooperation of North Macedonia and its monetary policy with the Eurozone.

With regard to the introduction of CBDC, central banks have to choose between reactive and inactive or proactive. If the central bank takes a passive stance, it relies on the experience of other central banks that were CBDC pioneers and follows the development. While this may seem prudent, it has a number of unintended consequences given recent technological advances in the financial industry (Ilievski and Delova-Jolevska, 2021). Networked CBDC systems (Model 2) could extend these potential benefits while enhancing security. For example, PvP settlement could be integrated via a technological bridge between household systems. A common clearing mechanism could reduce the number of relationships and provide economies of scale. The message standard chosen by the link (e.g. ISO 20022) would help to unify standards between systems. Transparency would be improved by using a standard formula for calculating rates and charges for transfers. The impact of different or conflicting compliance requirements is not affected by interconnected systems. Economies of scale and a common billing system could help reduce interconnectedness. Interconnection would help to unify standards between systems as the messaging standard (e.g. ISO 20022) is accepted by them. Transparency would be improved by adopting standardised rates and charges for transfers over a given link. Multiple or conflicting standards are not affected by interconnected systems.

Systems that are interconnected can perform various functions that are not possible in purely informal arrangements (e.g. PvP maintained through a

technical interface) (Auer, Haene and Holden, 2021). However, when CBDC is distributed by the private sector, major difficulties can arise because incumbents' business models are disrupted (e.g. a new connection may require too much investment from subscribers or compete with their existing profitable services). A lack of interoperability may also entail costs and risks that would make the use of the connection unattractive. However, high interoperability of systems can lead to greater security and efficiency.

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THE IMPACT OF FINANCIAL EDUCATION ON THE
SAVINGS, FINANCIAL DEVELOPEMENT AND
ECONOMIC GROWTH

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Abstract

The first phase of process of financial development includes simple capital accumulation which in turn is closely related to the savings rate. Economic growth is proportionally depended of the financial system development. This research aims to emphasize the impact on lack of knowledge and education about: the various financial instruments and institutions, about regulations of the financial institutions and financial processes, on the level of savings and on the decision which financial institution will be chosen by the savers. It aims, expands the time frame of the analysis in the research conducted in 2012 of a statistical sample of 1250 respondents against measured variability for 7 variables: Std. Dev, Skewness, Kurtosis and KV%. This paper, ten years later and using the previously defined variables on the same number of statistical samples, aims to exam the basic thesis: are household savings in North Macedonia, still at a low level; and to exam the condition of the variables linked with insufficient education, which are directly correlated to savings, financial development and economic growth.

Keywords: financial development, economic growth, savings, financial knowledge and education.

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1. Introduction

The financial system through its functions, enables the transformation of savings into investments and provides greater production potential, moves the purchasing power through the time, performs market allocation of free financial resources, maintains a certain degree of liquidity and stability in the economy and provides allocative, pricing, information and operational efficiency. Financial development and stability through the financial system and financial institutions are reflected in macroeconomic stability in general, through the support of quality investment decisions, efficient allocation of capital, and greater commitment to economic resources, lower unemployment and greater economic growth. It is therefore essential to have a developed financial system to ensure the support to the economic growth. The overall financial development and complementarity of the banking and non-banking financial institutions explain the successful growth in many countries.

The stability, growth and development of the financial system is profoundly influenced by a range of factors: the quality, scope, level and effectiveness of regulation, the protection of property and investor rights, supply and extent of the diversity of financial products and services, the education and knowledge of economic agents about various financial institutions, financial instruments, about trading of capital markets and their rights and obligations, transparency and accuracy of information performance and preferences of the business sector, using of comprehensive and internationally comparable accounting standards, the macroeconomic agenda, political stability, the existing cultural specifics and behaviours of the economic agents etc. All of the above, impact to the efficient functioning of the financial system, the level of trust in financial institutions and the level of savings.

The financial sector in North Macedonia retained this relatively simple structure with the dominant role of the banking system and a fairly small role of non-deposit financial institutions. In 2009, the banking system participated with 88.7% in the total assets of the financial system, in 2012 with 88.5%, in 2017 with 83%, and in 2020 this share was 80,5% (NBRM, 2010,2018, 2021), which confirms that the banks remain the dominant and most important institutional segment in maintaining the stability of the entire financial system. Although with a significantly lower share compared to the banking sector, the next most important financial institutions are the insurance companies and the mandatory pension funds, as the second largest contributor in the financial sector with an equal share. In 2017, household deposits with 50.8% share in the total banking assets, and in 2020 - with 48,8%, remain the primary source of banking assets with a high share in national savings. From the analyzed data, we summarize that banks are dominant financial institutions in the

financial system in North of Macedonia and that the main source of bank assets are household savings. In the process of developing the financial system in developing economies, the simple accumulation of capital (savings) precedes the phase of financial deepening. It is therefore, essential to examine the impact of the level of financial education and knowledge about financial instruments, institutions and regulation on the level of household savings and their investments in financial instruments.

2. Literature review

Finances accelerate growth in rich countries primarily by increasing productivity growth and in poorer countries by increasing the accumulation of capital (Rioja and Valev, 2004). The indicators of financial intermediation are correlated with the total factor productivity, while the accumulation of capital is correlated with both physical and human capital (Benhabib and Spiegel, 2003). Better developed financial intermediaries and financial markets facilitate the access to external financing of companies, which is cheaper than internal financing (equity financing: shares and / or reinvested earnings) and with that supports the growth of companies as well as the economic growth (Raghuram and Zingales, 1996). Industries inherently nurturing smaller companies grow faster in countries with a better-developed financial system (Beck, Levine, and Loayza, 2003). It is therefore essential to have a developed financial system to ensure the support to the growth of these companies, It has also been found that the percentage of population living with less than two dollars a day decreases faster in countries with a higher level of financial development, and that financial development super-proportionately accelerates the growth of poor countries thus reducing inequality in the world. The value of the private credit measure in India in the period 1960-1995 was 19.5% of GDP and in Argentina 16% of GDP, while this value in the developed countries was 25%. The results show that the convergence of the private credit measure to that of the developed countries would provide India with faster GDP growth of over 0.6%, while in Argentina it would increase by 1.8%. It has been established that if Mexico with a return on equity of 36% would achieve a return at the average rate of OECD countries (68%), the growth rate would have been higher by 0.6% per annum. Similarly, if the bank loan indicator would have been, instead of the actual 16%, at the level of OECD countries of 71%, then the growth would have been faster by 2.6% per annum (Levine, 1997). The permanent reduction in the expansion of the banks by 1% is associated with an increase in the financial depth from 1.7% to almost 4% and that financial innovations increase the financial depth, which is closely related to economic growth (Rousseau and Wachtel, 1998). The financial liberalization accelerates economic growth by improving resource allocation and investment rates (Levine and Zervos, 1998; Bekaert, Harvey and Lundblad, 2000). International differences in financial development have a

significant impact on the extent of industrial expansion in the countries, noting that underdeveloped financial systems, which limit access to institutional sources of capital, hinder industrial expansion. Costs of financial underdevelopment and instability in terms of economic growth are high. Underdevelopment and instability lead to a high average rate of insufficient utilization of production capacities, which then reduces the productivity of capital. On the other hand, the uncertainty associated with the variability of the growth rates has negative effects on the accumulation of capital (Loayza et al., 2003).

3. Methods

In order to examine the set hypotheses from today's perspective: 10 years after the original research in 2012 (Mojsoska, Dujovski, Nikolovska Vrateovska, 2016) and to determine and evaluate the trends of the set variables within the timeframe of ten years, the questionnaire was re-distributed to 1250 randomly selected respondents. The null hypotheses is again that the household savings rate (as the main source of credit potential of the dominant banks) is still at a low level; furthermore, the lack of education and knowledge of households about various financial institutions, financial instruments, about trading of capital markets and their rights and obligations, continues to have a significant impact on mistrust thereof, and affects the savings rate. Hence, the influence of financial institutions implies a low level of economic growth and development. One of the hypotheses is that raising the level of the education about financial instruments and institutions will lead to an increase in the level of savings. The questions were elaborated in the Statistical program SPSS 19 and 7 variables were defined. The data from this research were elaborated by the basic descriptive statistical procedures. In the descriptive statistics for each of the variables, the basic measures of central tendency and dispersion were estimated, and the results were grouped in classes (frequency analysis). Analysing the data where the basic statistical parameters of 7 variables were given, we can state that the distribution of the results in most variables is mostly within the normal margins of distribution. Certain decline from the normal distribution is observed in variables 6 and 7, due to the content of the 5th variable - it is not in favour of saving, as well as to the 7 modules of responding within the variable 6. The estimated measures of variability (*Std. Dev.*, *Skewness*, *Kurtosis* and *KV*) with only a few exceptions show a relatively high degree of homogeneity in relation to the average values in each variable.

4. Results and Discussion

Analysing the results obtained from the Fig. 1 and the first variable in 2012, it has been found that: the percentage of saving households was 47% while those who didn't have savings amounted to 53%; in 2021 these

percentages indicated 56% of savers and 44% of non-savers. In 2021, there was a trend of growth in the number of households saving by 8,8% and decline of non-saving households.

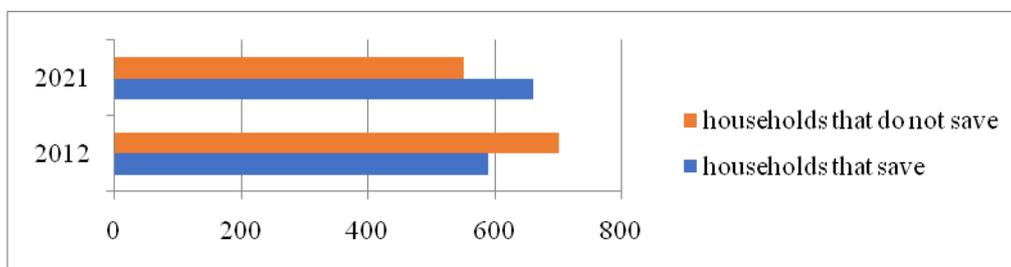


Figure 1. Comparison of saving and non-saving households 2012-2021 (in %)

Statistical data processing in relation to the first two variables, gave the following results: there is a trend of increase in the number of saving households and with that, a trend of growth in the amount of household savings. In an environment of low and declining interest rates on time deposits, the assessment is that during the analysed time interval in the national economy, this was affected by the continued political instability, COVID crisis, energetically crisis (rational expectations of economic agents whereby consumption is postponed till future times and saving is preferred), as well as the growth of 33.9% of the average salary in March 2021 compared to March 2012 as noted by the State Statistical Office. The results obtained from households that do not have any savings at all and the saving households - how much of their income goes to savings - unequivocally indicate that household savings (as the primary source of bank assets) are still insufficient to provide the required accumulation of capital for a financial system in function of growth and development of the economy (Nikolovska Vrateovska, Mojsoska, Nikoloska, 2021).

The third variable has been defined in order to determine the share of the saving households that are investing in the financial institutions, and the number of those that don't invest in the financial institution. The analysis sublimate that in 2012, the percentage of the respondents that invested savings in financial institutions is 31.2%, this part of not investors is 14.4%, while the remaining 54.4% have not savings. The valid percentage of the respondents who invest their savings within the variable is 67.2% and the part of households that have savings but don't invest it in a financial institution is 32.8%. Analysing the results obtained from the same variable in 2021, it has been found that 36% of the respondents invest the savings, 20% do not invest, while the remaining 44% have no savings; or in 2021 the valid percentage distribution in this category is: 64% of the respondents invest the savings and 36% of households don't invest the savings. Moreover, compared to 2012, the analysis shows that in 2021 the number of saving respondents that are

investing in a financial institution increased by 13.3%, while the part of households that save but don't invest increased by 20%.

The purpose of the fourth variable was to examine the part of non-saving respondents: if they would save, would they invest in financial instruments. In 2012, 66,7% of respondents answered affirmative on this question and 33,3% of answer were negative. In 2021 these percentages of respondents are analogous: 27% with 73%. Comparing 2012 to 2021 year, we will summarize: there is a trend of drastic decline of the number of households which (if they would have savings) would invest in a financial institution by 66.7%; compatibility, there was a growth of 45% of the respondents that, if they would have savings, would not invest it in a financial institution. The results obtained from the third and the fourth variables indicate the lower growth rate of households that save and invest in financial institutions in relation to the higher growth rate of households that have savings but don't invest them.

Analysing the results obtained from the third and the fourth variable, it has been found that they are compatible: there is a growing rate of the number of non-investors. In addition to this auxiliary hypothesis, the following groupings of homogeneous modules also go into the following groups: 1) the number of respondents from the module two of the third variable (the number of households that the savings do not invest in the financial institution) with the module two of the fourth variable of households who would not have invested in a financial institution if they had any savings); 2) and the second group of respondents from the module one of the third variable (saving and investing in the institutions) with the respondents from the module one of the fourth variable (which if they would save, they would invest in a financial instrument). An overview of the results obtained is given in Tab. 1:

Table 1. Reasons for not investing in financial institutions, comparative
2012-2021

2012 Crosstabulation							TTot
Count							al
		1	2	3	4	5	
2012	Yes	90	10	10	80	10	200
	No	80	10	10	90	20	210
Total		170	20	20	170	30	410

2021 Crosstabulation							TTo
Count							tal
		1	2	3	4	5	

Yes	100	20	20	100	10	250
No	20	30	30	100	40	400
Total	30	50	50	200	50	650

The results confirm the sub-hypothesis that after 10 years, we have an even higher number of respondents who do not nor would invest in a financial institution, which further weakens the deposit base collected from the invested insufficient mass of household savings as a potential in the economy for credit rating in the real sector.

The fifth question has been designed in function to determine the reasoning behind the decision not to invest the savings in a financial institution. In the analysis of 2012, the percentage of respondents who do not nor would invest in a financial institution was as follows: 38.1% said that they would not invest due the constant need of household cash reserves (liquid assets), 7.1% noted the lack of financial instruments in which they would invest to meet the requirements of their household, 4.6% had insufficient knowledge of the manner and conditions for investing in the financial institutions and financial instrument, as well as the lack of knowledge about the regulation of the financial institutions, a dominant 40.5% of the respondents noted as a reason the mistrust in the financial institutions, and 9.5% chose Other: specifying that they would invest in starting their own business. The research into this variable in 2021 showed the following: 45% don't nor would invest their savings due to the constant need for cash; 8% do not nor would invest due to the lack of financial instruments that would be appropriate to their needs; 8% stated as a reason their insufficient knowledge of the investment conditions of, benefits, risks and regulations of the financial institutions; 31% said that the reason was mistrust in financial institutions while 8% specified that they would invest in their own business. Within this variable, and according to the principle of homogeneity of the content of the modules, the first and the fifth module were grouped together (a group comprising respondents who have a constant need for cash in the household or for investments, for example, in their own business), with the second, third and fourth modules being grouped together to encompass respondents who do not have sufficient knowledge on finances, instruments, and risks of investing, lack knowledge of the regulations of the institutions and do not trust them. An overview of the results obtained is given in Fig. 2:

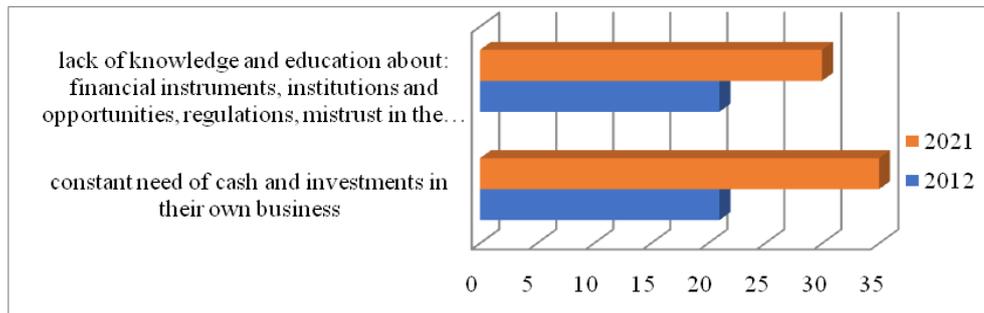


Figure 2. Reasons for not investing in financial institutions, comparative 2012-2021 year (%)

It has been summarized that in 2012 year, 50% of the respondents, as a reason for not investing in financial institutions noted: the constant need of cash in the household and / or for investments in their own businesses (in 2021, this share is 53.8%), while 50% respondents answered that the reason for not investing is: lack of knowledge and education about the financial instruments, institutions and opportunities, regulation of the financial institutions or mistrust in the financial institutions (in 2021, this share was 46.2%). The results, once again confirm the sub-hypothesis that insufficient financial education and knowledge results in mistrust in the financial institutions, thus affecting the low rate of savings and investments in the financial instruments. The analysis indicates that lack of the financial knowledge and education are strong factors of influence of household's decisions: how much will be saved, and would be invested in the financial instruments, or not.

The results obtained from the processing of variable 6 are in addition to the above. This variable determines where savers invest. In 2012, the analysis showed that the banks are dominant in the selection of households (share was 60%); and in 2021 this share is 50%, the comparative analysis in the analyzed time segment also notes growing trend of investors who would choose the investment funds and the private pension funds, as is given in Fig.3:

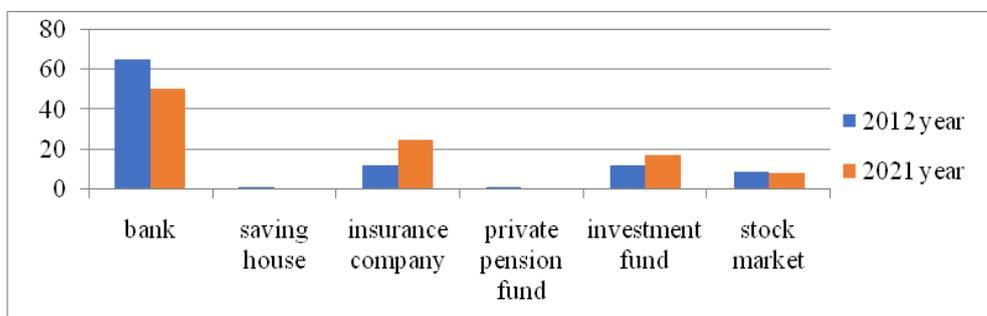


Figure 3. In which Financial institutions the households invest, comparative 2012-2021 year (%)

The seventh variable defines the reasons for choosing a given financial institution. The processing of the grouped data from this variable is complementary to the previously presented data from the other variables. The results confirm the thesis that, the greatest influence of households decision where to invest savings are: asset security, trust, financial knowledge about the chosen institution, information and transparency, ethics and regulation. In 2012 the share of households that as a reason for choice the financial institution have stated one of these modules is 68%; and in 2021 this share is 83% (after ten years, there is increase of 18%) as is given in Fig.4:

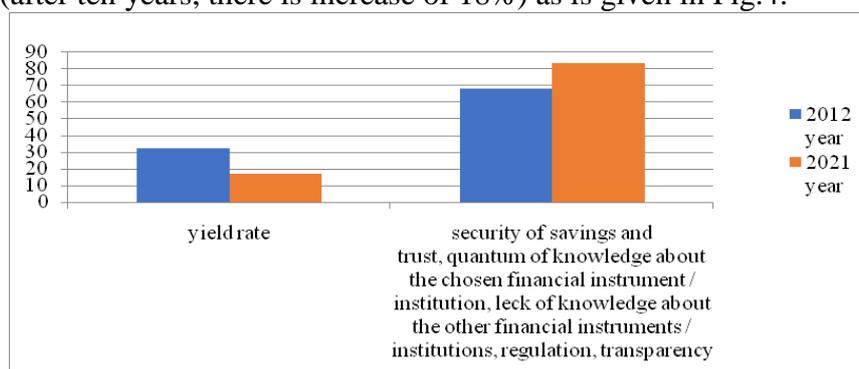


Figure 4. Reason for choosing a given financial institution, comparative 2012-2021 year (in %)

Conclusion

The basic function of the financial institutions are to ensure the optimal allocation of financial resources by channeling the collection of liquid financial assets from surplus economic units (savers) and channel them to the deficit economic units (businesses, population, etc.) from where they become financial intermediaries and major providers of efficient system for saving and investment in the economy. They place the funds or allocate the most successful and least risky projects, from which they actually participate in the efficient allocation of economic resources and in the rate of economic growth. The stable and developed financial system is positively correlated with the increase of financial competition, the quality and type of offered financial services and instruments, reduction of financial intermediation and information costs, (which in turn encourages savings as a potential for further investment activity in the economy) and with economic growth. On the other hand, the development of the financial system is initially conditioned by the simple accumulation of capital, which is closely related to the rate of savings in the domestic economy.

The data obtained from the conducted research are generally compatible with the data obtained from the examined variables ten years ago. The main funding source of the financially dominant banks, i.e. the primary condition for growth of the financial system and thus of economic growth in

the country are still the households savings. The basic thesis was reaffirmed that (although after 10 years of growth rate) the household savings are still at low level and insufficient. Not only that the households don't have enough savings, but also, to a significant extent, do not invest their savings in financial instruments and institutions. Statistically, the most significant factor of influence for such behavior is the lack of financial knowledge of households as well as insufficient information regarding the conditions, opportunities, benefits, risks and regulations for investing in various financial instruments and institutions. The main influential factor on where to invest new and accumulated savings is the level of knowledge and information that depositors have about the existing financial instruments and institutions. Amplified knowledge on the conditions on savings in the banks and the insufficient knowledge and information about opportunities and benefits of savings in the non-banking institutions implies the domination of the banks in the saving choice, but also to be the dominant institutions in the financial system, in general. All this underlines the need for systematically organized activities in order to enhance the financial knowledge on various financial instruments and institutions among the economic agents, especially households. Parallel to increase the financial literacy, and macroeconomic and macro-financial established policies, there is also a need of delivering measures and activities aiming to: modernize the financial system, increase presence and promote a wide range of financial instruments in the domestic financial market, support its international integration, accelerate development of non-banking institutions, increase operation transparency, strengthen the regulatory framework, provide consistent application of the legal provisions for protection of depositors rights and secure an efficient judicial system (Rule of Law).

**The views expressed in this paper do not necessarily reflect the views of the institutions in which authors are employed.*

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DESIGN OF A FINANCIAL DATABASE FOR STORING
FINANCIAL STATEMENTS' DATA

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Abstract

In today's highly competitive world, the pursuit of accurate, on-time, up-to-date, and complete information has become a cornerstone of the business's success. By gathering and organizing structured and relevant data, different by their nature, origin, volume, and scope, databases remain to be a valuable and trustworthy source of information in many areas. In the sphere of financial management, financial databases play a key role not only in evaluating the financial health of a business and in analyzing a business's performance but also in research and financial modeling. The paper aims to propose a generic relational database design suitable for the acquisition of relevant data about financial statements of business subjects based on the relational data model and using the methodology of designing relational databases, including the first two phases: the conceptual and the logical design. The resulting relational database schema can be easily implemented in any relational database management system, whilst the physically implemented database can provide a solid platform for organizing, storing, processing, and retrieving valuable financial information using SQL scripts.

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1. Introduction

Providing accurate, comprehensive, and up-to-date information on time is of the utmost importance and highest priority in today's digitalized business environment. The complex processes of globalization, the increased competition, and the amplified uncertainties impose the necessity of using large amounts of information to determine the business entities' policy of development. A significant portion of such information comes from financial statements, which provide a realistic and objective picture of a company's business condition (Zager & Zager, 2006). The information presented in financial statements allows one to see the state of financial assets, sources of funds, income, expenses, and the overall business result and, based on this information, to make reasoned decisions to use production factors more efficiently and achieve better business results.

The set of the three major financial statements that represent a legal obligation for both commercial and financial firms consists of (1) an Income statement (also known as a Profit & Loss statement), (2) a Balance Sheet, and (3) a Cash Flow statement. Since all of these statements allow the identification of the problems and difficulties faced by business entities, they help in finding appropriate solutions to overcome them and to take measures to improve the results of operations. As such, they remain one of the fundamental sources of information about an actual firm's business health, which both internal and external users are interested in. By representing active instruments of the business policy of companies, they remain a solid basis for making realistic and adequate business decisions, and also a key factor in improving business operations.

Recognizing the immense value of information held within financial statements and other financial instruments, the need for efficient organizing and storing of relevant financial data has led to the emergence of financial databases. Financial databases enable sophisticated analysis across a broad range of financial instruments and wide-ranging, complete statistics. Such comprehensive historical numerical data can deliver top-quality research and analytical products to be used by the global financial services marketplace. Financial data management using financial databases allows companies to provide access to all stakeholders in the organization to perform financial analyses they need, on-demand. Moreover, allowing users the ability to create their financial models using financial databases results in better insights, faster results, and more profound outcomes. In this context, the paper aims at proposing a database design of a generic financial micro-database suitable for keeping and retrieving financial statements' data.

The paper is structured as follows. Section 2 elaborates on the recent research made on financial databases. The next section focuses on the meaning, structure, and goals to be achieved by using financial databases in the contemporary business environment. In Section 4, the authors present the sources of data and methodology used. The process of designing a generic financial database for the acquisition of financial statements is being elaborated in Section 5, in two sub-phases: construction of an Entity-Relationship diagram as a constituent part of the conceptual design (Subsection 5.1) and mapping it into a corresponding relational database schema, also known as logical design (Subsection 5.2). The last section concludes.

2. Related Research

During the last two decades, due to their increasing importance, financial databases have been put in focus and correspondingly, they have become a subject of continuous research. In this section, some of the most prominent research work made on this topic is being elaborated on.

In 2000 Beck, Demirgüç-Kunt, & Levine introduced a new database, encompassing indicators of financial structure and financial development across countries over time. Compared to previously introduced databases, it was quite distinctive since it combined a wide variety of indicators that measure the size, activity, and efficiency of financial intermediaries and markets, including indicators of the size and activity of non-bank financial institutions and measures of the size of bond and primary equity markets. Their work describes the sources, the construction, and the rationale behind the different indicators included in the database (Beck, Demirgüç-Kunt, & Levine, 2000).

The work of Abiad, Detragiache, & Tressel (2008) focuses on the introduction of a new database of financial reforms, covering 91 economies from 1973 to 2005. By describing the content of the database, the information sources utilized, and the coding rules used to create an index of financial reform, the paper also compares the proposed database with other measures of financial liberalization, provides descriptive statistics, and discusses some possible applications. The database provides a multi-faceted measure of financial reform, covering seven aspects of financial sector policy.

In 2011, Isac, Isac, & Guță elaborated on the e-Finance software application for online submission and tracking of semi-annual and annual financial statements and fiscal declarations, using MySQL RDBMS and PHP (Isac, Isac, & Guță, 2011).

Sequeira, Pai, & Surekha (2012) reported on the development of a special-purpose Management Information System in organizations, the

Financial Management Information System (FMIS), based on the utilization of a corresponding financial database implemented in Oracle 9i DBMS, to improve the system's functions, performance, and productivity.

In their work, Olbrys & Majewska (2014) present various empirical problems concerning financial databases, pointing out the data accuracy and the availability of high-quality data as crucial factors for all those who use such databases.

Recognizing the necessity and the importance of rigorous and proper linking of financial databases, the research made by Rodriguez-Lujan & Huerta (2014) proposes a machine learning (ML) solution to solve the problem of matching heterogeneous financial databases in two stages: schema matching and entity matching, based on the utilization of the newly introduced Financial Attribute Selection Distance (FASD) method developed on the Kullback-Leibler divergence of string and numeric attributes.

Pierson, Hand, & Thompson (2015) point out the problem of limited research due to the absence of a common public financial database for empirical analysis. Because the difficult process of collecting, interpreting, and organizing the public financial data has made its adoption to be prohibitive and inconsistent, they offer a single, coherent resource that contains all of the government financial data for the period 1967–2012.

Recognizing the fact that tackling financial flows between countries relies on the availability of coherent and consistent data along with up-to-date information, Nardo *et al.* (2017) propose the usage of a database as a repository to share data that can be found in different sources and propose a methodology to build a symmetrical matrix about bilateral financial flows.

The paper of Sabol (2019) lists the contents of the Capital Markets Data Project monthly database, CMD-MD, which contains 367 series/columns centered around the capital markets, suitable for performing research on a macro-financial level.

3. The Five W's and One H of Financial Databases

Financial databases consist of financial data, i.e. pieces or sets of information (datasets) related to the financial health of a business. These pieces of data are usually used by internal management to analyze business performance and determine whether tactics and strategies must be altered. When financial data go public, people and organizations outside a business can also use financial data reported by the business to judge its creditworthiness, decide whether to invest in the business and determine whether the business is complying with government regulations.

Financial databases are specialist databases that provide very detailed current/historic financial information and/or aggregated data for a wide range

of companies and financial market data items. Their scope can be on a local, regional, national, international, and global level. Some of them cover macroeconomic data, whilst others deal with micro-socioeconomic data. The data is usually acquired in a form of monthly, quarterly, and annual time series, providing current and historical financial and economic information. Some of the financial databases reach up to 60 years of coverage in the past and/or include detailed information on thousands and even millions of public and private firms (both corporate and financial ones) in a huge number of countries. While some of them do require a level of programming expertise to extract the data, plenty of them offer user-friendly interfaces that allow one to search them easily by category, industry, country, region, history, delivery channel, delivery platform, and point-in-time, or sort the data by various criteria: geographic location, activity description, number of employees, financial statement items, ratios, credit score/rating, relevance, dataset column names, company names, recency, etc. Some of them allow data breakdowns by size classes of businesses (micro, small, medium, SMEs, large) and/or businesses' sectors (sections, divisions). Some of the financial databases are part of high-speed, high-performance information systems - Internet portals that offer online services to financial professionals, which deliver a potent combination of real-time information and powerful analysis tools *vis-à-vis* various financial categories. A great portion of them provides advanced user interfaces that offer easy-to-use pre-formatted charts and tabular reports with flexible charting to enable their users to uncover new and valuable insights.

When it comes to the data held within, these databases may include a vast variety of categories, starting from equities (prices, key financials (P/E, EPS, etc.), equity indices (trade value, prices, turnover, etc.), stock market indices, stocks, bonds (both corporate and government) and convertibles, bonds indices & CDS, securities, mutual funds/hedge funds/fund of funds, derivatives (warrants, futures, options), indices, currencies, trusts (both unit and investment trusts), interest rates (treasury bonds, state bonds, etc.), commodities, and company fundamentals, to fixed income securities and key economic indicators, including various economic indicators (macroeconomic time series from highly credible sources such as International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD), European Central Bank (ECB), Eurostat, Economist Intelligence Unit (EIU), national statistical agencies, etc.).

Some of the biggest and most popular financial databases on a global level are the following ones (SGSB, 2012; PUL, 2022): *Bloomberg, Datastream, FactSet, CRSP (Center for Research in Securities Prices), Global Financial Data, AMADEUS (Analyse MAjor Database from EUropean Sources), S&P Capital IQ Pro, Compustat, Bankscope, Company Analysis,*

Eikon, FAME, Osiris, ProQuest Business, SNL Financials, CEIC, BoardEx, etc.

Access to world-class financial databases is commercial and it is usually granted only to legal subscribers. Moreover, the charge for using such databases ranges from a couple of US\$ per hour to several hundreds of US\$ per month and even several tens of thousands of US\$ per year, which the majority of their potential users can find quite expensive. This notion imposes the necessity for designing, implementing, and maintaining own financial micro-databases.

4. Data and Methodology

Since financial statements are the basis for carrying out financial analysis, which, as an extremely important process, involves specific techniques for evaluating risks, performance, financial health, and prospects of an organization to make better economic decisions and earn income in the future (White, Sondhi, & Fried, 2003), the paper focuses solely on the design of a financial database for organizing and storing data coming from this specific type of financial instruments. The data needed for modeling purposes during the preliminary phase of collecting facts have been extracted from secondary sources: the financial statements of Macedonian commercial firms listed by the Macedonian Stock Exchange (MSE), retrieved from the System for Electronic Information (SEI Net) (SEI, 2022). It should be notified that the financial statements' data of Macedonian financial firms have not been taken into account; in addition, there is some difference *vis-à-vis* specific positions in the financial statements between the two types of firms.

The designing process strictly follows the methodology of designing relational databases, including (1) the development of a conceptual data model (an E-R diagram using the original Chen notation) and (2) mapping the resulting E-R diagram into a corresponding relational schema of the database following the rules for obtaining the logical design directly from the conceptual one (Elmasri & Navathe, 2016, pp. 59–105; Elmasri & Navathe, 2016, pp. 289–306). Such an approach guarantees that all the relations will be at least in a Third Normal Form (3NF), which is *de facto* an industry standard. The E-R diagram has been constructed using the Microsoft[®] Visio[®] software package, however, many other designing tools, both online and on-premises, can be utilized for this task.

5. Designing a Financial Database from Scratch

This section elaborates on the process of designing a financial database suitable for storing financial statements going through the first two phases: the phase of conceptual modeling and the phase of logical design.

5.1 Conceptual Design

The overall conceptual design is quite straightforward and can be sublimed by the Entity-Relationship (E-R) diagram presented in Fig. 1, which was constructed following the principles of the conceptual database design given by Bagui & Earp (2011) and using the original Chen notation.

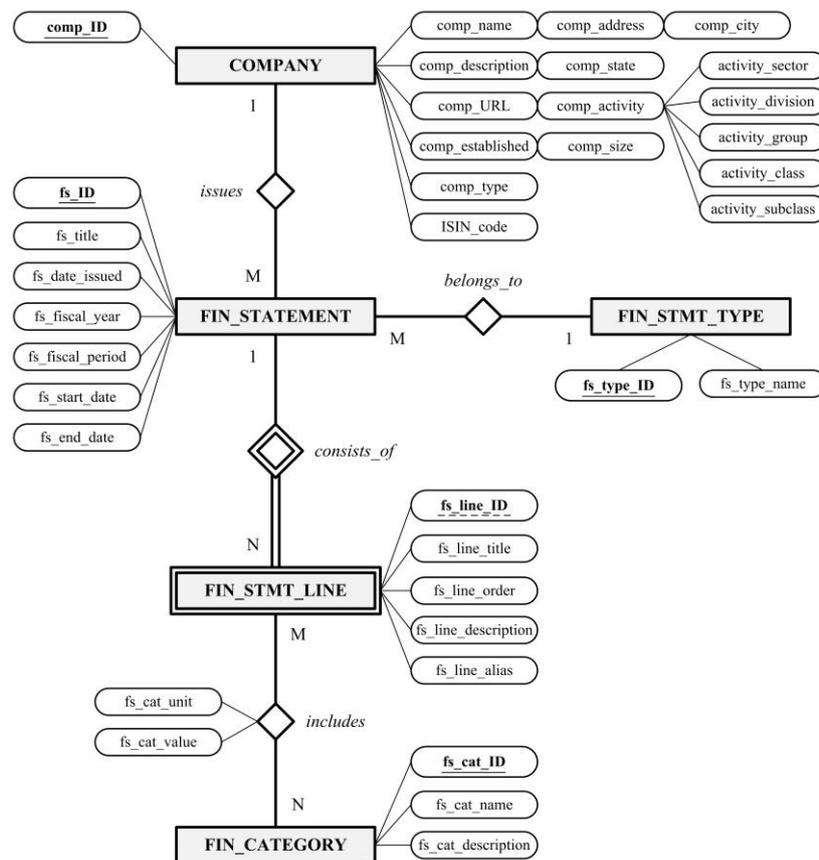


Figure 1. E-R diagram of the financial database suitable for storing financial statements

The E-R diagram depicted in Fig. 1 consists of four regular entity types and a single ‘weak’ entity type.

The entity type COMPANY, uniquely identified by the key attribute comp_ID, represents all the business entities that issue financial statements and for which the financial database keeps records. The names of its non-key attributes are self-explainable, except for the following ones:

- *comp_type*, which refers to the type of the company (either commercial firm or financial firm);
- *ISIN_code*, which refers to the International Securities Identification Number, as defined by the ISO 6166 standard, is a 12-digit alphanumeric code that uniquely identifies specific security. The organization that allocates ISINs in any particular country is the country's respective National Numbering Agency (NNA);
- *comp_activity*, which refers to the primary activity of the company, as described by the National Classification of Activities - NKD Rev.2 (valid from January 01, 2013) (SSO, 2022). It is a composite attribute that can be divided into sub-parts: the attributes *activity_sector*, *activity_division*, *activity_group*, *activity_class*, and *activity_subclass*. The NKD Rev.2 Classification of Activities takes into account 21 sectors, 88 divisions, 272 groups, 615 classes, and 4 subclasses in total;
- *comp_size*, which refers to the size of the company (e.g. micro, small, medium, and large);

The entity type FIN_STMT_TYPE, identified by its key attribute fs_type_ID, represents the set of the three possible major financial statement types, e.g. Income Statement (Profit & Loss Statement), Balance Sheet, and Cash Flow Statement (possible values of the non-key attribute *fs_type_name*). If applicable, the fourth type of financial statement, named Statement of Changes in Equity, can be taken into account, as well.

The entity type FIN_STATEMENT, identified by its key attribute fs_ID, denotes all the financial statements. Any financial statement has its title (*fs_title*) and is issued on a specific date (*fs_date_issued*). It refers to a single fiscal year (*fs_fiscal_year*) and a given fiscal period (*fs_fiscal_period*), which spans from a starting date (*fs_start_date*) to an ending date (*fs_end_date*).

A company issues multiple financial statements, and each of them is issued by a specific company (binary relationship '*issues*' between entity types COMPANY and FIN_STATEMENT with a cardinality 1:M, mandatory on both sides). Each financial statement belongs to a specific type, and for each specific type, there are many financial statements (binary relationship '*belongs_to*' between entity types FIN_STATEMENT and FIN_STMT_TYPE with a cardinality M:1, mandatory on both sides).

Each financial statement consists of multiple lines, modeled by the 'weak' entity type FIN_STMT_LINE that is partially identified by its key attribute fs_line_ID. Each line is described by the attribute *fs_line_description*.

If there are multiple names for the line, they are recorded in the attribute *fs_line_alias*. By default, the binary relationship ‘consists_of’ between the ‘strong’ entity type FIN_STATEMENT and the ‘weak’ entity type FIN_STMT_LINE has a cardinality of 1:N and is mandatory on both sides.

All the financial categories included in the lines of a financial statement are represented by the entity type FIN_CATEGORY, exclusively identified by the key attribute *fs_cat_ID*. The non-key attribute *fs_cat_name* holds the name of the specific category (e.g. Total sales revenues, Revenues from the domestic market, Revenues from the foreign market, Cost of goods sold, etc.).

The binary relationship ‘includes’ models the link between the entity types FIN_STMT_LINE and FIN_CATEGORY. Each financial statement line includes only one financial category, but because financial categories may be generally measured/expressed in different units (attribute *fs_cat_unit*) and do have various values (attribute *fs_cat_value*) over time, the relationship ‘includes’ has a cardinality of M:N and is mandatory on both sides.

5.2 Logical Design

Given the E-R diagram in Fig. 1 and the rules for mapping it into a corresponding logical design (Elmasri & Navathe, 2016, pp. 289–306), the resulting relational schema can be specified by the following set of relations:

COMPANY (comp_ID, comp_name, comp_address, comp_city,
comp_state, comp_description, comp_URL, comp_established,
comp_type, ISIN_code, activity_sector, activity_division,
activity_group, activity_class, activity_subclass, comp_size)

FIN_STMT_TYPE (fs_type_ID, fs_type_name)

FIN_STATEMENT (fs_ID, fs_name, fs_date_issued, fs_fiscal_year,
fs_fiscal_period, fs_start_date, fs_end_date, comp_ID*,
fs_type_ID*)

FIN_CATEGORY (fs_cat_ID, fs_cat_name, fs_cat_description)

FIN_STMT_LINE (fs_ID*, fs_line_ID, fs_line_order, fs_line_title,
fs_line_alias, fs_line_description)

INCLUDES (fs_ID*, fs_line_ID*, fs_cat_ID*, fs_cat_unit,
fs_cat_value)

In the above relational schema, primary key (PK) attributes are bolded and underlined with a solid line; non-key attributes are written regularly; foreign key (FK) attributes are italicized, underlined with a dashed line, and denoted by an asterisk (*); attributes that are simultaneously both primary and foreign keys are bolded, underlined with a solid line and also denoted by an asterisk (*).

The logical design, i.e. the set of relations that form the relational schema of the financial database, is independent of any particular relational DBMS.

It should be notified that in the relation FIN_STMT_LINE, the non-key attribute *fs_line_title* can take different values, depending on the type of financial statement.

For instance, Table 1 shows the possible values of this attribute commonly used in the Balance Sheet.

Table 1. Possible values of the non-key attribute *fs_line_title* used in the Balance Sheet

Values of the non-key attribute <i>fs_line_title</i> used in the Balance Sheet	
Non-current assets	Equity
Intangible assets	Subscribed capital and revaluation reserves
Property, plant, and equipment	Reserves
Other long-term assets	Retained earnings
Investment properties	Minority interest
Long-term financial instruments	Liabilities
Investments in subsidiaries	Current Liabilities
Investments in associates	Trade liabilities and other short-term liabilities
Long-term loans, receivables	Short term borrowings
Financial investments	Short term provisions
Other long-term receivables	Deferred tax liabilities
Current assets	Other current liabilities
Inventories	Accrued expenses
Trade receivables	Liabilities related to the disposal of assets
Other receivables	Long term liabilities
Short Term Financial investments	Long term borrowings
Cash and cash equivalents	Trade payables and other long-term liabilities
Prepaid Expenses	Long term provisions
Total Assets	Long-term tax liabilities

Equity and Liabilities	Total capital and reserves
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Table 2 lists the possible values of the attribute *fs_line_title* commonly used in Income Statements.

Table 2. Possible values of the non-key attribute *fs_line_title* used in the
Income Statement

Values of the non-key attribute <i>fs_line_title</i> used in the Income Statement	
Total operating revenues	Total financial revenues
Sales revenues	Financial revenues from investment, loans granted, and interest and exchange rate gains
Other operating revenues	Other financial revenue
Total operating expenses	Income from associated companies
Costs of trading goods sold	Total financial expenses
Cost of consumed materials and other supplies	Financial expenses from interest and exchange rate gains
Cost of materials, spare parts, and other inventory sold	Other financial expenses
Service cost	Losses from associates
Amortization and depreciation	Profit from ordinary activities
Impairment losses of non-current assets	Profit from ordinary activities before taxation
Impairment losses of current assets	Corporate tax
Provisions	Net profit
Other operating expenses	Net profit minority shareholders
Operating profit	Total other comprehensive income

Table 3 lists the possible values of the attribute *fs_line_title* commonly used in Cash Flow Statements.

As per the positions listed in these three tables, it is noteworthy to point out that they represent the most usually used ones. Some of them can be found with different names in other financial statements and it was the main reason to include the attribute *fs_line_alias* in the relation FIN_STMT_LINE.

Table 3. Possible values of the non-key attribute *fs_line_title* used in the Cash
Flow Statement

Values of the non-key attribute <i>fs_line_title</i> used in the Cash Flow Statement	
Cash flows from operating activities	Capital gains/losses from the sale of investments

Depreciation of properties, plants, and equipment	Other cash receipts and payments from operating activities
Gain/loss from impairment	Cash flow from investing activities
Increase/decrease in inventories	Cash payments from the acquired property, plant and equipment, intangibles, and other
Increase/decrease in receivables-customers	Cash flow from financing activities
Increase/decrease in advance payment	Cash proceeds from issuing shares or other equity instruments
Increase/decrease in short-term receivables	Cash repayments from amounts borrowed
Increase/decrease in paid expenses for future periods	Cash proceeds from issuing debentures, loans, notes, bonds, mortgages, and other short or long-term borrowings
Increase/decrease in payables	Cash payments to acquire a minor interest
Increase/decrease in received advanced payments	Dividends paid
Increase/decrease in short-term payables	Repurchase of own shares and stakes
Increase/decrease in deferred expenses	Cash payments by a lessee for the reduction of the outstanding liability relating to a finance lease
Interest paid/received	Net increase in cash and cash equivalents
Dividends paid/received	Cash and cash equivalents at beginning of the period
Tax expense	Cash and cash equivalents at end of the period
Capital gains/losses from the sale of property, plant, and equipment	

6. Conclusion

Designing and implementing a financial database can be an incredibly large and often expensive endeavor, especially due to the need for its continued maintenance and updating, as well as because of the need for engaging substantial hardware resources to keep it highly available and scalable. On the other hand, the benefits of deploying such a database, like the

significant increase in productivity and efficiency for all their users, will make the investments in time, human resources, and money worthwhile. Moreover, properly maintained and constantly updated financial databases can offer a myriad of useful historic data that, when properly processed and analyzed, can provide substantial insights. Financial databases are great sources of various types of data that can be helpful in financial modeling to forecast a particular business' financial performance in the future, typically based on the company's historical performance, assumptions about the future, and the three types of financial statements mentioned previously. The 3-way financial model is a setup for building all other financial models, such as Discounted Cash Flow (DCF) Model, Merger Model (M&A), Initial Public Offering (IPO) Model, Leveraged Buyout (LBO) Model, 'Sum of the Parts' Model, Consolidation Model, Budget Model, Forecasting Model, and Option Pricing Model, which are some of the most common types. The experiences concerning the use of such micro-databases have revealed many advantages *vis-à-vis* the production of various statistics and assessment of companies' financial structure development. The advantages of such an approach exceed largely the burden of successfully managing a vast amount of data, considering the benefits of refined quality control that allows for more reliable statistics and transparent data, higher compilation and exporting flexibility, and enhanced responsiveness to *ad hoc* user requests/queries. The coverage of such financial databases in terms of the different financial instruments with various levels of detailed information that can be searched by a company, country, and many other criteria allows for the compilation of valuable statistical outputs which are of key importance for the policymakers. If extended to a global scale, by sharing the data across international borders, the benefits could not just be spread out worldwide, but also multiplied.

The future work involves the physical design and implementation of the hereby presented logical design using a particular relational DBMS (e.g. Microsoft SQL Server, Microsoft Access, MySQL, etc.), being the third and the last phase of the process of designing a relational financial database.

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THE USE OF ALTERNATIVE PAYMENT METHODS
AS A RESULT OF COVID 19

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Abstract

The payment industry is always moving forward, but Covid 19, imposed the businesses had to adjust and move online when the hit the countries in 2020. Financial services are becoming more digital day by day, providing faster and better features for customers.

Therefore, the purpose of this paper is to analyze the methods of payment through electronic commerce imposed by Covid 19 and which are on the rise. A comparative analysis of these payment methods was made in certain years before, during and period after Covid 19. An analysis was also made of the alternative payment methods that are used in some countries.

The research results show that offering alternative payment methods can help for online merchants to generate more sales and customers can use their preferred payment methods. It is therefore necessary to supplement the alternative payment methods and this will make online shopping to be fast and hassle-free. As the analysis shows, credit and debit cards are still number one among the payment methods. But it is also clear that there is a change in the landscape of payment methods, driven by several factors. This was confirmed by the use of alternative payment methods during the Covid 19 period.

Keywords: payment cards, electronic commerce, alternative payment methods.

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1. Introduction

As a result of the Covid 19 pandemic, with a large number of restrictive measures, the people have directed themselves towards online buying as an alternative to the traditional buying.

That can be seen from the data obtained from the published reports by the National bank in our country. Also, according to the last published data by the State Statistics Office, we can see the growth of the Internet usage and online buying, and at the same time, with the change in the habits of the people, there has been growth of the e-commerce as well, that can be seen from the data available in the Association of e-commerce reports in the last couple of years. The financial services digitalization enables numerous advantages for the clients, and increases the competitiveness in this domain. The implementation of the Payment Services Two (PSD2) directive in Europe, has contributed even more to encouragement of the online banking tools, and at the same time has strengthened the security in their use.

2. Comparative analysis of the alternative payment trends in some European countries

As a result of the Covid 19 influence, the new normal in the banking world has forced the banks to keep a pace with the trends and the consumers' demands by offering various digital platforms. In this way, the use of electronic banking will be easier, and at the same time the users' personal data will be protected according to the laws, educating the clients for this service advantages. Every day we can see advancement in the different ways of payment, and the Covid 19 with its restrictive measures has additionally contributed to the companies to adjust and direct towards online working. All that contributed to new trends appearance in the e-payment. Popular ways of payment in some European countries in 2022 can be seen in the following table:

Table 1. Popular payment methods in certain European countries in 2022

	Credit/debit cards	Digital wallets	Local solutions	Other
Finland	Visa, Mastercard	MobilePay	Verkkopankki	Bank transfers
Swedish	Visa, Mastercard, Eurocard			Invoices
Netherlands	Mastercard, Visa	PayPal		Direct bank payments, invoices, post-payment

				options and cash on delivery
Poland	Mastercard, Visa	Apple Pay, Google Pay, PayPal, YetiPay	YetiPay	Direct bank transfers via Przelewy24, BLIK, PayU Payment in cash on delivery
Italy	Visa, Mastercard, CartaSi	PayPal	CartaSi	Payment in cash on delivery, bank transfers
United Kingdom	Mastercard, Visa and American Express	PayPal and Google Pay		
Germany	Visa, Mastercard	Apple Pay, PayPal	Giropay, Girocard and Splitit, Sofort (from Klarna)	Invoices, Payment in advance
Spain	Visa, Mastercard	PayPal, Apple Pay, BBVA Wallet and CaixaBank Wallet	BBVA Wallet and CaixaBank Wallet	Bank transfers
France	The national card Carte Bleue, American Express и Visa	PayPal, Paylib, Lydia, Amazon Pay	The national Carte Bleue card	
Romania	Contactless cards			Payment in cash on delivery

Source: by the authors according to data of certain countries, available at <https://ecommercenews.eu/popular-payment-methods-in-europe-in-2022/>

Survey data for Finland show different results. From all presented ways of payment: cards, digital wallets and bank transfers, the following ones are the most frequently used: Trustly, Klarna, Zimpler and MobilePay. By 2023 we expect increasing number of online payments realized via bank transfers, by a support of the local solution Verkkopankki.

Also, the users in Sweden use several ways of payment by cards: Visa, Mastercard, Eurocard, invoices and etc., and the online buying is usually in the country. Like in Finland, some of the most frequently used ways of payment are Trustly, Klarna, Swish etc.

For the Netherlands, the characteristic is that in the last several years the use of the local solution iDeal as a way of online payment has been widening. After it, the digital wallets and cards, such as Mastercard, Visa and PayPal, which are very popular among the online buyers, follow. In this country there is a diverse offer for ways of e-payment, such as for an example: direct bank payments, invoices, options for post-payment, such as: Klarna, AfterPay etc., and payment in cash at delivery.

The most popular way of online payment chosen by the buyers in Poland are the direct bank transfers via Przelewy24, BLIK, PayU. Concerning the debit and credit cards such as Mastercard, Visa, their use is less. Also, the digital wallets such as Apple Pay, Google Pay, PayPal and the local YetiPay, are less used. Like the case in Romania, the payment in cash at delivery remains as one of the options to which the people tend to return. On the top of the list of popular ways of payment in Italy are the debit and credit cards such as Visa, Mastercard and the local CartaSi, and the digital wallets, such as PayPal. Before the Covid 19, the cash was the most frequently used option, but during and after the pandemic the habits have changed towards the digital way of payment. With some e-merchants in the country, there is still a possibility for paying in cash at delivery. Furthermore, there is also possibility for more regular use of the bank transfers as a way of payment in the following two years.

In the UK, debit and credit cards are mostly used. But in the market, the digital wallets such as PayPal and Google Pay become their competitive way of payment.

In Germany, the invoices are the most frequently used way of payment that increases its popularity. Furthermore, online merchants often offer the users to pay by Visa, Mastercard, advanced payment, then digital wallets, and by Sofort from Klarna as a way of payment.

Other popular ways of online payment are Apple Pay, PayPal, and the local Giropay, Gorocard and paydirekt, then Klarna, Splitit, etc.

In Spain, and in Italy, the debit and credit cards are on the top on the list of ways of payment, while the digital wallets follow after them. It is expected that by 2023 the cards use will gradually decrease, while bank transfers and digital wallets will be more used. The most popular digital wallets are PayPal and Apple Pay, and the local solutions such as BBVA Wallet and CaixaBank Wallet.

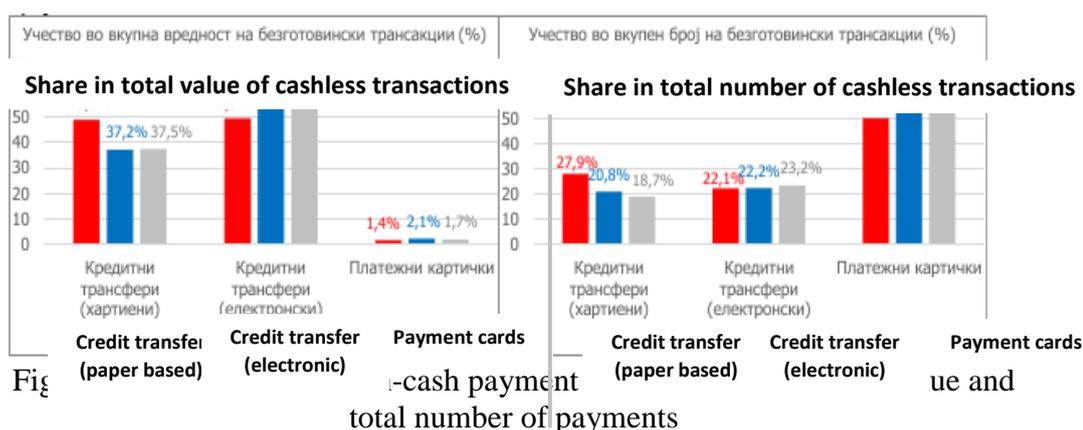
Like in many countries, the mostly used ways of payment in France are the debit and credit cards. The national card Carte Bleue is usually used. The other kinds of cards such as American Express and Visa, although they are used, are less popular. The digital wallets PayPal, Paylib, Lydia, Amazon Pay, etc. use is usually in the mobile commerce.

Covid 19 has a big influence in using cash and alternative ways of payment in Romania, too. Cash payment at delivery, although very popular, is rather decreased, while the contactless cards popularity increases.

According to the a.m. it can be concluded that among the mentioned ways of payment, the debit and credit cards are still no.1 in almost all mentioned countries, and the situation is the same in our country as well. However, the change in the ways of payment is evident, that also results from the Covid 19 and other factors influence, and the rise of demographic data for alternative ways of payment in the European countries shows that, and the online merchants should utilize that.

2.1 Non-cash payment instruments in the Macedonian banking system

Like in many other countries, the changes in the habits of physical and legal entities as a result of the payment possibilities digitalization process benefits, which is a result of the Covid 19 pandemic influence, have also happened in our country. That can be seen from the increased use of the payment cards and other digital channels for payments realization. According to the data from the published reports by the National bank, in 2021 we see annual growth of 29,1% in the number of transactions realized by payment cards which contributes to increasing their share in the total payments number to 58,1%. Furthermore, the electronic credit transfers had annual growth of 32,5%, that influenced the increase of their share in the total payments number and the decrease of the credit transfer securities share. Those changes can be seen in the following figure (Annual report 2021, NBRM):



Since the beginning of Covid 19, the natural persons more frequently have used the electronic banking benefits, but the payments at the banks counters still dominate with 69,7%. Although the personal computers are used for realizing electronic credit transfers, the natural persons usually use the advantages of mobile phone applications, with 39,3% at the expense of the

personal computers share decreasing. Only a small percentage of natural persons used ATMs for the payments realization. That can be seen on the following table (Annual report 2020 NBRM):

Table 2. Credit transfers as a non-cash payment instrument

2020		
Number of credit transfers (structural participation)	Natural persons (%)	Legal entities (%)
By method of initiation		
Paper - based	69,7	37,2
Electronic	30,3	62,8
By device of initiation of the electronic credit transfers		
Personal computer	60,1	98,2
Mobile phone	39,3	1,8
ATM	0,6	/

Moreover, the infrastructure development for electronic payments in our country is also result of a continuous development of the contactless technology that is gaining higher and higher share in buying by payment cards. Besides that, the fast development of the digitalization process has offered many innovative possibilities for the users by offering virtual wallets. By the end of 2021, the number of the digitalized payment cards for paying via mobile phones and smart appliances for contactless payments, was 43.638, of which 75,7% are digitalized debit payment cards, while the others are digitalized credit payment cards.

3. Contactless cards popularity as a result of Covid 19

The contactless cards has got their importance and true value in the period of the Covid 19 pandemic and the large number of restrictive measures and recommendations for avoiding direct contacts and keeping a distance between the people. Besides the people's distrust in this type of cards, the contactless cards through their use for avoiding contacts when paying with them, and due to the fast transactions, have enabled a huge growth of this kind of payments. As a result of these advantages, we can tell some reasons why the contactless cards use has gained popularity as a way of payment, such as: One of the most important advantages of the contactless payment is time saving. In this contemporary society, the payment by contactless cards is twice faster than the use of a simple payment card. When the contactless payment is used, it is not necessary to put the cards in the POS terminal and to enter a pin for transactions up to the limit amount determined by the bank that issued the card, or up to the limit amount for contactless payment placed on the terminal on which the contactless cards can be used, so we can say that it is even multiple times faster compared to cash payment.

Furthermore this type of cards owns the highest standards for security in internet payment, such as 3D Secure – Verified by Visa – VbV and MC Secure Code, and usually they have limits on smaller amounts with which there is a protection from paying higher amounts and unauthorized payments. Moreover, for each realized transaction there is a possibility for the user to get sms notification on the mobile phone.

Of all advantages, we can stand out the possibility to realize contactless payment by using other appliances, such as a smart watch – Garmin or mobile phone. With the card digitalization, we can pay through Garmin watch or mobile phone with Android operating system, using defined banking application of the bank that offers such an option for payment.

The contactless payment enables fast and easy payment, which is an advantage for the users. Some of the banks that offer this type of cards, additionally offer different programs for the users' loyalty, as for instance payment in installments with some merchants, or collecting points that can be used for the next payment in the network of pos terminals of the bank itself. Having in mind all mentioned advantages, with the contactless cards use, the users stand to profit.

In our country, according to the data published in the annual reports by the National bank, at the end of 2021, of 2,1 million cards issued in our country, 68,3% cards are based on contactless technology, while of totally 30.045 appliances in the physical selling points, 83,8% support contactless payments, which means that there is an increase of 10,2% and 6,3% respectively, compared to the end of 2020.

4. Conclusion

The legal and physical entities more frequently use the advantages of the Internet and the possibility to realize everyday activities online, regardless of whether business or personal needs are in question. The habits change as a result of Covid 19 pandemic influence, can be seen in doubling the e-banking use and increasing number of users who request online information on many products and services. According to the a.m. information, it can be concluded that among the mentioned ways of payment, the debit and credit cards are still no. 1 in almost all mentioned countries, and the situation is the same in our country, too. However, the change in the ways of payment is evident, which is a result of the Covid 19 influence, and other factors as well, and the increase of the demographic data for the alternative ways of payment in the European countries says enough about that and the online merchants should utilize that. Besides the significant growth of the Internet use and online buying, our country is still on a lower level when ranking the European countries, which means that the growth is not sufficient and it is necessary all concerned parties to work further on increasing the upward trend which should continue at a faster pace. Also, it is necessary to continue the activities, efforts and

initiatives for creating favorable climate for accelerated growth of the e-commerce in our country.

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THE IMPORTANCE OF PUBLIC BANKS IN TURKIYE IN
THE COVID 19 PANDEMIC

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Abstract

The Covid 19 epidemic, which emerged in China at the end of 2019 and spread all over the world, has caused hard times in all countries. In this time, the support of the public authority was needed due to the restriction of economic and social activities. In Türkiye, public supports were mostly implemented in the form of financial supports in order to maintain liquidity. It is seen that public banks play a major role in these financial supports. In this study, the behaviors of state-owned deposit banks during the pandemic and the support they provide to economic life were tried to be examined by comparing them with private and foreign deposit banks. According to the pre-pandemic situation, unlike other banks, it is seen that public banks are the group that gives the most loans in the sector. In addition, there has been no increase in the non-performing loans of public banks, thanks to opportunities such as postponement and restructuring of loan debts of companies and individuals. Due to these incentive loans of public banks, loan volumes reached enormous sizes, but it was observed that the profitability ratios did not increase at the same level. As a result, it has been clearly revealed that public banks work in a service-oriented manner instead of profit-oriented in order to prevent the economic recession caused by the pandemic, and that they are extremely important institutions in delivering government incentives to the public in times of economic depression.

Keywords: Covid 19 Pandemic, Public Banks, Türkiye

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1. Introduction

The coronavirus outbreak, which emerged in Wuhan, China at the end of 2019 and then spread to the whole world and was declared a global pandemic by the World Health Organization, has deeply affected social and economic life. In this process, people's lives and livelihoods are in danger. Businesses operating in sectors directly affected by the restrictions and their employees felt the negative effects of the pandemic more than public employees and retirees with fixed income.

In this period, the intervention of the state in economic and social life was inevitable. First, restrictive measures have been taken to reduce the impact of the pandemic on people's lives. Curfews and the expansion of remote working opportunities were the most frequently implemented measures. However, since it is not possible for all employees to work remotely, some businesses had to stay closed during the lockdown days in the early stages of the pandemic, and they were exempted from restrictions with later regulations. Nevertheless, in some sectors (e.g., school canteen businesses, cafes and restaurants, tourist facilities in the first period of the pandemic, etc.), the employees and employers of these sectors have had a hard time economically, as the activity has stopped completely or largely during the pandemic.

In order to support economic activities, some incentive loans and facilities were tried to be provided especially through public banks in this period. In this study, the support provided to the economic life through public banks during the pandemic and the increased volume of public banks due to these supports and the risk sizes incurred will be examined in comparison with the private sector deposit banks.

2. Turkish Banking Sector and the Place of Public Banks in the Sector

The banking system in Türkiye presents a mixed structure. In the banking sector, there are banks owned by different types of banks as well as different capital groups. However, all banks must be established and managed according to a common set of rules. In this respect, all deposit, participation, development and investment banks established in Türkiye, regardless of type, are subject to the supervision and control of the Banking Regulation and Supervision Agency (BRSA), subject to the Banking Law.

If we leave aside the development and investment banks in Türkiye, private and foreign capital deposit and participation banks as well as state-owned deposit and participation banks have a wide range of activities in the banking sector. From this point of view, public banks impact on economic life is also undeniably great.

In the Turkish banking sector, the types of banks according to the shareholder are given in Table 1.

Table 1. Number of Banks in Türkiye by Type and Capital Owner

Banking Types	State- Owned	Private Equity	Foreign Capital	Total
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Deposit Banks	3	8	21	32
Development and Investment Banks	3	11	4	18
Participation Banks	3		3	6
Banks Transferred to SDIF		3		3
Total	9	22	28	59

Source: Created by the author using the data of the Banks Association of Türkiye and the Participation Banks Association of Türkiye.

When the data in Table 1 are examined, it is seen that mostly foreign-capital deposit banks are concentrated in Türkiye. 5 of these banks are the Turkish branches of foreign banks, while the other 16 foreign-capital deposit banks were established in Türkiye. After the foreign capital deposit banks, the most private capital development and investment banks were opened. State-owned banks, on the other hand, show a balanced distribution, and there are three public banks in each of the three bank types.

Although public banks in the Turkish banking sector seem to be insufficient in terms of numbers, they have extremely important sizes in terms of employment and service points. For example, while private and foreign banks have recently reduced the number of staff and branches during the Covid 19 pandemic, public banks have on the contrary increased. In Figure 1, the number of branches and personnel of the banks according to capital ownership in the period from the first quarter of 2018 to the first quarter of 2022 is shown.

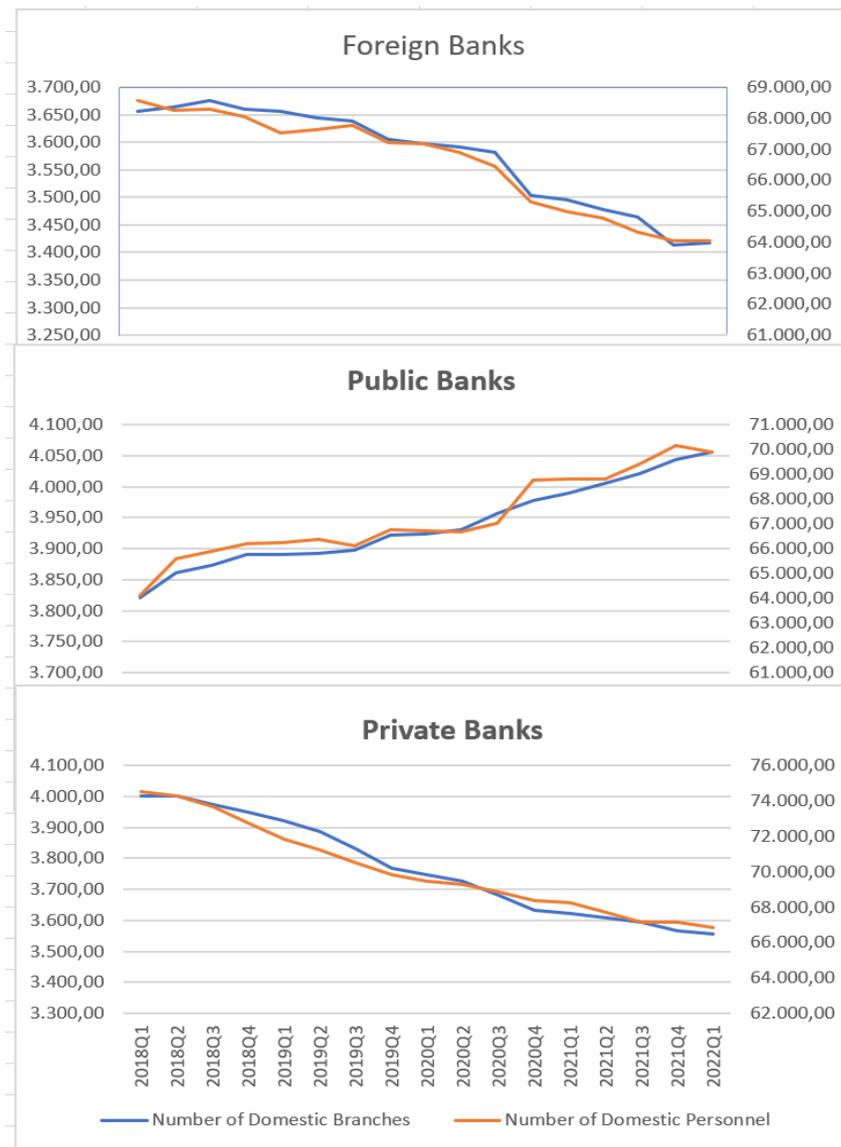


Figure 1. Number of Branches and Personnel in the Turkish Banking Sector

Source: Created by the author using BRSA data. (The left axis shows the branch, the right axis the number of personnel.)

As can be seen in Figure 1, the increase in the number of both branches and personnel compared to the first quarter of 2018 was only in public banks. Among the bank groups examined, state banks are dominant in terms of both personnel and number of branches, according to 2022 data. Unlike private banks, due to the role they play, public banks must show a service-oriented approach instead of a profit-oriented approach in some cases. For this reason, it is possible to come across a public bank branch even in the smallest districts where there is no branch of any private or foreign bank.

2. State Aids Provided During the Pandemic Period

As the epidemic spread to Türkiye in March 2020, restrictive measures were taken rapidly. These have emerged primarily in the form of switching from face-to-face education to distance education, curfews, and overtime restrictions in the public and private sectors. Later, with the start of vaccination, some measures were relaxed, especially the industry and agriculture sectors were allowed to continue their activities.

According to the IMF's July 2021 report, Türkiye has spent a total of \$19 billion or gave up its income since the beginning of the pandemic. In addition, according to the same report, a total of 68 billion dollars of liquidity was provided through methods such as loans, debt assumption, asset purchases, guarantees and semi-financial transactions. These figures also correspond to 2.7% and 9.5% of Türkiye's gross domestic product, respectively (IMF, 2021).

In this process, some workplaces such as school canteens, cafes, restaurants, private school businesses and tourism facilities had to be closed. In these workplaces, not only the employers were in a difficult situation, but also the employees. For this reason, the government has started to provide some support since the beginning of the pandemic. We can analyze these supports under three titles: financial supports, support for working life and social supports.

3.1 Financial supports

The most intense support program of the Turkish government during the pandemic period has been financial supports. It is possible to briefly list these supports as follows (İKTİB, 2020);

- Treasury support for Credit Guarantee Fund (CGF) was increased from 25 billion TL to 50 billion TL.
- The Treasury Supported CGF limits of SMEs were increased from 12 million TL to 35 million TL.
- Check Payment Support loan (maximum limit of 1, 5 and 10 million according to annual turnover) was implemented.
- Rediscount credit facilities were expanded by the Central Bank.
- Receivables were deferred by Exim bank and longer-term opportunities were provided for new loans.
- By the Banking Supervision and Regulation Agency (BSRA), the legal follow-up period for non-performing receivables, which was 3 months, was increased to 6 months.
- Small and Medium Enterprises Development Organization of Türkiye (SMEDO) initiated loan and grant support to some sectors (companies producing masks, disinfectants, protective clothing, etc.).
- State's tax and SSI employer premium receivables were postponed.
- Execution proceedings have been postponed, except for alimony receivables.
- Debts to the Water and Electricity Administrations have been postponed.
- The scope of the State Supported Receivables Insurance was expanded.

- Dividend distribution of publicly traded companies is limited to 25% of the profit.
- In addition to granting individual and corporate loans with favorable interest and payment terms by public banks, current receivables were postponed.
- Discounts and postponements were made in the rent receivables of the real estate belonging to city administrations and municipalities, and no rent fees were taken from the tenants using the real estates belonging to the treasury and discount applications were made.
- Income loss support and rent support were given to tradesmen by the Ministry of Commerce.

3.2 Supports for working life

In working life, it is aimed especially at the continuity of employment and in addition to the direct supports for this, the continuation of employment is required in some of the financing supports. The supports for working life implemented in Türkiye during the epidemic period are briefly listed below.

- Short time working allowance was issued.
- Minimum wage support was given.
- Dismissal prohibitions were implemented.
- Daily cash wage support was provided.

3.3 Social supports

Some social assistance was provided during the fight against the pandemic in Türkiye. These can be divided into cash benefits and health care related benefits. The social supports applied are briefly as follows;

- Monetary aid was provided to families in need directly by the Ministry of Family and Social Services.
- Payments were made to social assistance foundations by the Treasury to be delivered to those in need by these foundations.
- Covid treatment, testing and vaccination expenses during the pandemic period have been covered by the Ministry of Health for all citizens and asylum seekers.

4. Loans and Payment Facilities Provided by Public Banks During the Pandemic in Türkiye

Public banks are equipped with the facilities of the state. In this respect, public banks are in a more advantageous position than other banks. This can sometimes disrupt competition. Public banks are also one of the tools of the economy management to intervene in the market. These banks can not only support economic growth, employment and development through large-scale infrastructure loans or loans directed to leading sectors, but also can be used by the government for their own political purposes (Akın, 2019: 38-42). In times of

depression such as economic crisis, war and epidemic, public banks play an important role in the distribution of incentives and subsidies and in creating cheap resources. During the fight against the Covid 19 global epidemic, public banks in Turkey have implemented the following practices for their commercial customers;

- Postponement of principal and interest payments of enterprises indebted to public banks.
- Halkbank started to provide treasury-supported loans with low interest rate and grace terms of TL 25.000, and credit cards with a limit of TL 25.000, covering all artisans and craftsmen.
- Treasury-backed low-interest and grace period loans have been introduced by public banks for all commercial enterprises in the name of business continuation loans.

In addition to the opportunities provided by public banks to commercial life, packages are also created for the housing, vehicle, and other needs of individual customers. Thus, it is aimed to reverse the restrictive effects of the pandemic period by stimulating consumption. In this sense, the packages for individual customers by public banks are as follows;

- For real person beneficiaries, Major Needs Support Loan application with a grace period of 6 months with a treasury backed CGF guarantee up to a maximum amount of 10.000 TL has been started.
- Mortgage loan packages with a maturity of 15 years and a grace period have been prepared for housing finance at a low interest rate.
- Low-interest rate vehicle loans were offered for second-hand vehicles. Low-interest rate loans were offered for zero-mile vehicles produced domestically by contracted companies.
- For consumers who want to book holidays from travel agencies, credit facilities up to 36 months maturity with a grace period have been introduced.

In this period, it would not be wrong to say that private banks were more hesitant in lending and that public policies were carried out mainly through public banks. However, the asset ratio application was initiated to encourage private and foreign deposit banks to give loans and as a matter of fact, it was successful. Figure 2 shows the loan sizes of public deposit banks and other deposit banks before and during the pandemic period.

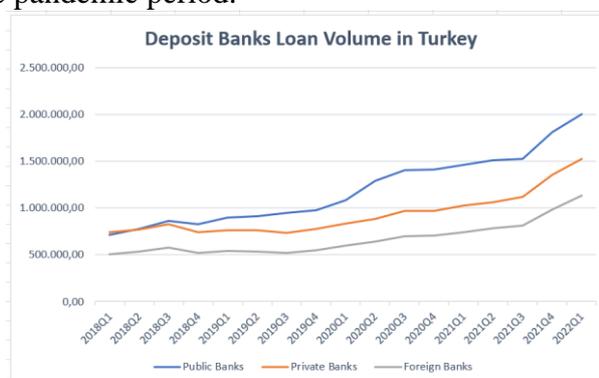


Figure 2. Credit Volume of Deposit Banks in Turkiye (million TL)

Source: Created by the author using BRSA monthly bulletin data.

According to the graph in Figure 2, similar credit increases were experienced in all three bank groups in total loan volume. Especially in the first period of the pandemic, it is seen that there has been a sharper increase in the credit volume of public banks compared to other bank groups. The loan size of public banks, which was approximately TL 1 trillion at the beginning of the pandemic, reached TL 2 trillion as of the first quarter of 2022.

The increase in SME loans by public banks, especially due to new loans and maturity extensions, is significant. This is illustrated in the graph in Figure 3.

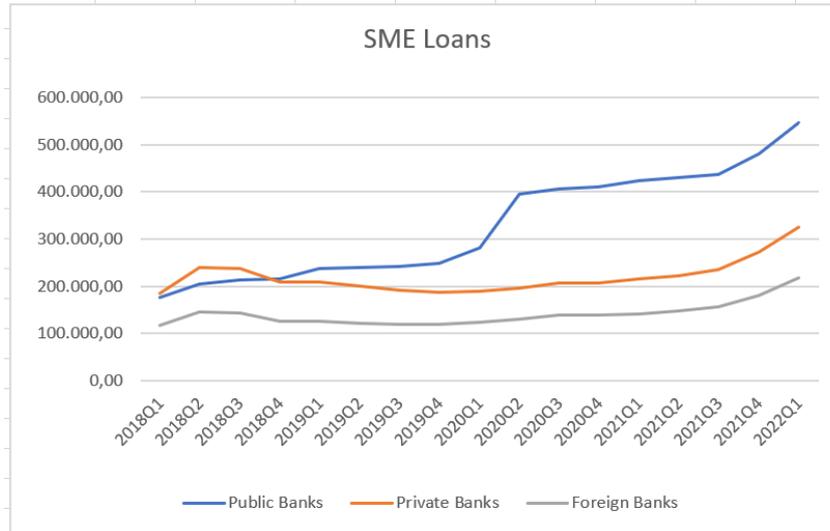


Figure 3. SME Credit Volume of Deposit Banks in Turkiye (million TL)

Source: Created by the author using BRSA monthly bulletin data.

A situation like the graph in Figure 2 also appears in figure 3. Thanks to the loan packages implemented by public banks in the first period of the pandemic, the loan volume, which was below TL 300 billion in the second quarter and third quarter of 2020, increased to over TL 400 billion in 6 months. As of the first quarter of 2022, it reached approximately TL 550 billion.

The effects of the housing loan package implemented by public banks are seen in the graph in Figure 4.

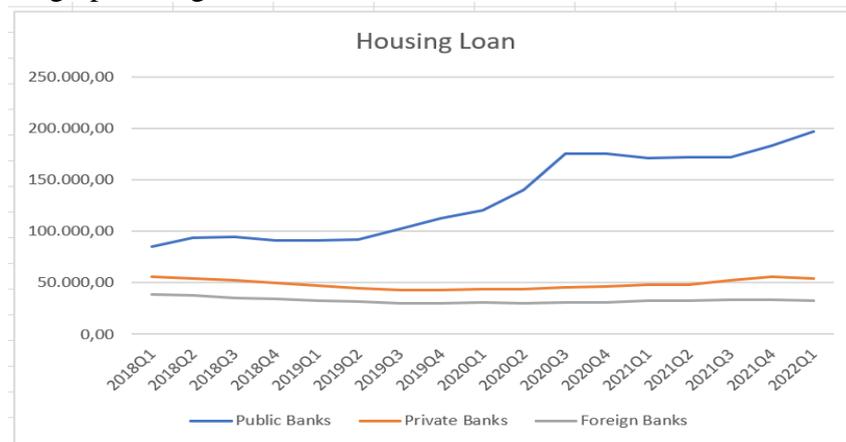


Figure 4. Housing Credit Volume of Deposit Banks in Turkiye (million TL)
Source: Created by the author using BRSA monthly bulletin data.

When Figure 4 is examined, it is seen that there is no increase in housing loans of banks, except for public banks. Housing loans, which public banks started to increase since the second quarter of 2019, gained further momentum in the second quarter of 2020 and reached a size of TL 175 billion in the third quarter of 2020.

Figure 5 shows the ratio of non-performing loans to total cash loans.

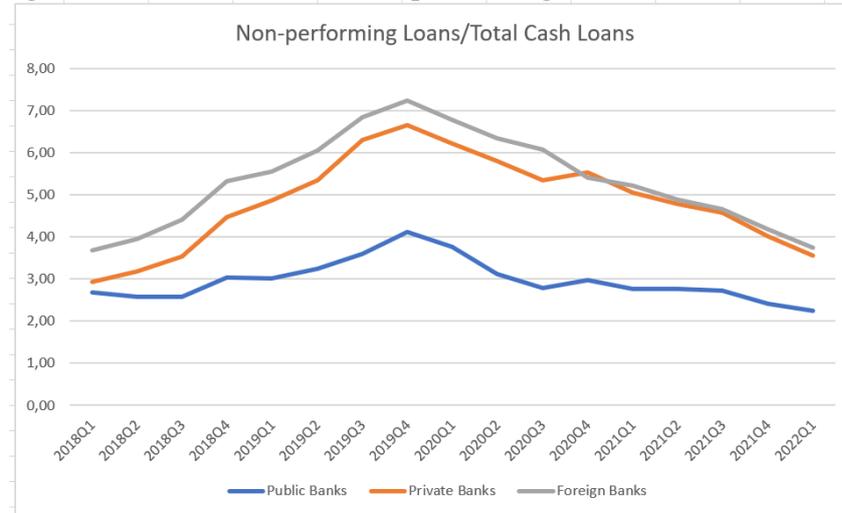


Figure 5. NPL/Total Cash Loans (%)

Source: Created by the author using BRSA monthly bulletin data.

When Figure 5 is examined, it is seen that public banks have the lowest rate of problematic loans among the deposit banks examined. One of the important reasons for this situation is that the total loans reached enormous size due to the large amount of loans provided by the public banks and thus the ratio of non-performing loans remained relatively low. In addition, existing loans have not become problematic as public banks have made loan restructuring and maturity extensions to relieve their loan customers during the pandemic period.

Finally, as with all businesses, the goal of banks is to make a profit. During the pandemic period, it is seen that public banks cannot make enough profit due to postponing their receivables and giving low-interest loans. Figure 6 shows the ratio of banks' net profits to average asset size in the periods examined.

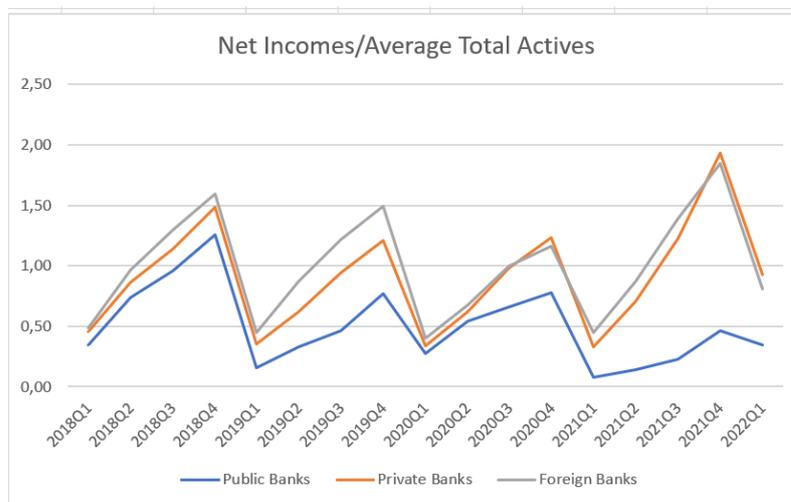


Figure 5. Net Profit/Average Assets of Deposit Banks (%)
Source: Created by the author using BRSA monthly bulletin data

When Figure 6 is analyzed, the return on assets of public banks is low compared to other bank groups. The most important reason for this is that other banks mediate more profitable loans during the pandemic period and want to stay away from problem loans as much as possible. Due to their mission, public banks have continued to expand their credit in order to maintain and increase the economic vitality even though it is risky. Profit rates also decreased due to the low interest rate loans they mediated as per government policies.

5. Conclusion

The global Covid 19 epidemic, which emerged at the end of 2019 and affected the whole world, also affected Turkey. In this process, the problems have arisen such as full and part-time closures in many sectors, the inability of some occupational groups to continue their work, and unemployment resulting from this arose. In order to overcome the bottleneck, the supportive policies of the public authority were mostly implemented through public banks. This mission undertaken by public banks has led them to be service-oriented rather than profit-oriented. Public banks, which provided the highest number of loans, had the lowest non-performing loan ratio, and did not decrease in the number of branches and personnel, constituted the group of banks operating with the least profitability despite all these positive indicators. Although they must work with low profit rates during this period, public banks are the most important intermediary institutions in the implementation of public incentives in difficult times. Even if they were previously subject to privatization, the necessity and importance of public banks is more understood in such crisis environments.

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THE IMPACT OF STRATEGIES FOR ADVANCING E-
BANKING ON CREATING LOYAL CLIENTS IN BANKS IN
THE REPUBLIC OF NORTH MACEDONIA

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Abstract

E-banking and mobile banking may be leaders that individuals and legal entities mostly use and have become ordinary activities without our life has become unthinkable, at a time when digitalization is taking up more and more space in our daily business. The Covid period was an additional accelerator for greater application and availability of digital processes in the daily lives of individuals and companies.

It is noticed a trend of focusing on continuously developing strategies for advancing the electronic banking, in order to retain existing customers and attract new ones, in the banks in our country, in the last few years.

The purpose of the research paper is to analyze and investigate whether the banks in the Republic of North Macedonia showing investment in digitalization, commitment to action in order to improve the offer of online services, success to gain new customers, to create loyal customers, to create positive feelings for the company and to improve the image of the bank.

In order to analyze the impact of strategies for advancing e-banking on gaining loyal clients in banks in North Macedonia, the survey was conducted on respondents across the country.

The main focus is on analyzing strategies for upgrading alternative distributive channels (credit and debit cards, ATM, digital kiosks, SMS banking, e-banking, mobile banking, e-commerce, 3DES Secure).

The accent will be on satisfactions of clients from e-banking services and factors that affect on loyalty of clients.

Keywords: Strategies for E-banking, Loyal Clients, Quality of Services

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1. Introduction

The outbreak of the pandemic has significantly increased the use of electronic banking services in the everyday operations of the companies and individuals. The banks have been working continuously on promoting customers' experience with e-services and they have been following the latest digitalization technologies for payments since before the pandemic. The customers are already aware of the benefits of the digital payments that provide speed, safety, saving time and of course, significantly lower commissions compared to those offered in the traditional methods of payment.

The pandemic has accelerated the trend of digitalization and changed the usual customer's practice to wait in front of the bank counters. In such circumstances, the digital tools have had their expansion not only because of the simplicity they provide, but also because of all the advantages they offer related to customers' everyday duties.

Lately, the banks in our country have had a tendency to focus on continuous development of strategies for e-banking, in order to keep the existing customers and to attract new ones as well.

The purpose of this research paper is to investigate and analyze whether the banks in the Republic of North Macedonia, through their investment in digitalization and their commitment in promoting online services, have been succeeding in obtaining new customers, loyal customers, in creating positive feelings for their companies and in improving their image.

2. Customer satisfaction with electronic banking services and factors for their loyalty

The concept of service quality is based on expediency and need as is the concept of the product quality. The relationship between the service provider and the customer is considered constructive only if the service with its own price, validity and convenience meets the customer's needs and demands. The importance of the product quality must not be underestimated.

According to Steward John, a consultant in McKinsey & Company, service quality is a feeling that that service is better than another one. Service quality changes throughout people's lives, from one generation to another, and it largely depends on the multiple aspects of people's activities.

Service quality is defined as a set of service features meeting the users' needs and expectations. The term "user" in this definition refers to organization or receiver of the service. (Ilieska, 2009).

The development of Information technology has led to transformations in many sectors, including the banking sector as well. The purpose of introducing modern technologies in the banking sector is the benefit from the new technologies, the fast, simple and secure banking services from any location, making customers' everyday life easier, rising customers' awareness of bank

products, business innovations and of course, putting the accent on the customer as an individual.

The electronic banking services are innovative and secure solutions adapted to the customers' specific needs, helping the banks meet the customers' needs and expectations as much as possible. The degree of introduction of new technologies enabling quick, simple and secure fulfillment of obligations for which the customers previously had to visit the bank counters, as well as the offer of new and innovative solutions, greatly affects customers' satisfaction and their decision which bank to trust. Customers want to keep up with the new world trends and be users of innovative banking solutions that are both modern and useful. (Bankarstvo, 2022)

3. Strategies for advancing electronic banking

The banking industry is one of the industry's most affected by the developments of technologies related to information and communication, diversity and provide new services, such as banking machines and point of sale (POS), Automatic teller machine (ATM), credit card services, internet banking networks and so on, creating new money consuming ways and examining their effects on the cost structure of banks and their performance in terms of profitability are issues worthy of attention.

In the literature, strategies for advancing electronic banking are referred to in various terms, such as novel banking services (von Hippel and Riggs 1996), innovative banking services (Kashmari et al. 2016), new banking services (Prugaapron 2015), and modern banking services (Miranda-Petronella 2009). New banking services are defined as services that utilize modern instruments, platforms, and channels to present banking services to customers (Tashet al. 2014). New banking services are not supposed to be substitutions for traditional types of banking transactions. However, there are many advantages to IT-based services, since they can enhance the quality of services and decrease delivery costs (González et al. 2008). The main benefit of applying information technology and innovative solutions in the banking sector is the improvement of the efficiency and effectiveness of services (Mahmoodi and Naderi 2016) because traditional banking activities are all accomplished manually, and factors related to human mistakes can have a negative effect on banking transactions.

3.1 Contactless payment

In the domain of the use of debit and credit payment cards, the latest strategy in terms of digitalization is the opportunity for contactless payment with mobile phones at the points of sale, as a replacement for payment cards.

A significant novelty which was introduced referring to card payments is the opportunity for contactless payment with a smart watch.

3.2 ATMs

Some additional innovative ATM services introduced by most of the banks in our country are the following: daily turnover payment, business card payment, transaction account payment, card payment, payment of loans.

The advantages include payment of funds at any time, regardless of the bank's working hours, as well as the opportunity the paid funds to be at disposal right after the payment was made.

3.3 Internet banking and mobile banking

Internet banking and m-banking provide use of a large number of bank services when needed- at any time 24 hours a day, at any place, completely independently of the bank's working hours. As a result of the internet banking, customers are no longer required to visit the bank counters. The advantages of the internet and mobile banking include: availability of services without monthly prepayment; up to 60% lower fees for transactions compared to those provided at the bank's counter; they are simple to use; they provide maximum security and protection as well as continuous availability of bank services.

A large number of banks provide services available through internet and mobile banking such as: Insight in the balance and daily changes of denar and foreign currency accounts; savings deposits; payment cards; loan sub-accounts; balance statements for denar and foreign currency accounts; checkup of debt amortization schedule and all transfers for loan repayment ; payment of public services and other denar payments within the country; transfer of funds from one's own savings deposit account to one's own transaction account; transfer of funds to a term deposit account and sight deposits; transfer of funds to credit cards; purchase and sale of foreign currencies (cashless); delivery of payment orders to non-residents in denars within the country; delivery of payment orders to non-residents in foreign currency within the country and abroad; online application for a consumer loan and other applications related to loans.

4. Electronic banking in the Republic of North Macedonia- current state

The digitalization of banking services brings greater availability and lower commissions, and thus greater financial inclusion of the population. The latest data point to a growing trend of digitalization of banking services, which particularly became obvious at the beginning of the pandemic, but continued on during 2021.

There is a trend of greater bank orientation towards the needs of customers, primarily in the field of digitalization. This was especially evident during the pandemic, which by its very nature required limiting of physical contact. Thus, for the first three quarters of last year, the use of payment cards for trade transactions grew by about 16% in terms of value, and by about 15% in terms of the number of transactions, which is even 4 times higher growth than the

number of cash withdrawal transactions. In particular, a significant shift can be seen in the use of cards for making transactions over the Internet, where there is a growth of about 40 percent. (National Bank of the Republic of North Macedonia, 2022).

The Central bank follows these trends and wherever it can it has its influence - and that is the regulatory framework. The National Bank of the Republic of North Macedonia is trying to encourage greater competition, greater entry of new players in this market, which will mean increased service, greater accessibility for citizens, lower commissions for the services and eventually, all of this will have a positive impact on the financial inclusion of the population.

Additionally, a new law on payment services has been drawn up by the National Bank and the Ministry of Finance, the purpose of which is precisely greater competition in the market of payment services.

5. Case study: research on the impact of e-banking advancing strategies on customer loyalty

5.1 Research methodology

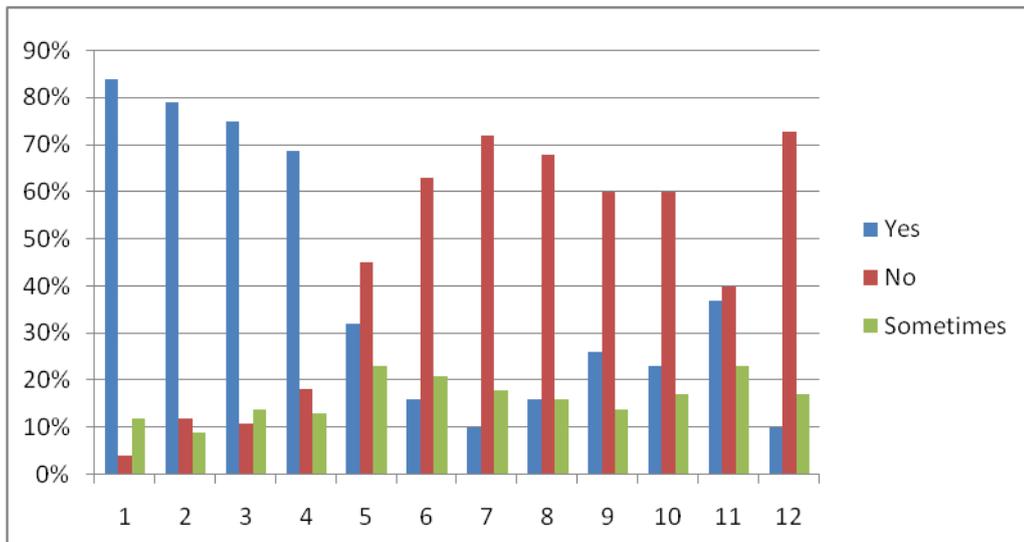
In order to investigate the impact of e-banking advancing strategies, simple random sampling was used and combined questions were used. The data was received through an online questionnaire containing 28 questions, 16 closed-ended questions and 12 Likert Scale questions. The questionnaire was created in Google Forms and was sent via e-mail to respondents of different age groups and with different levels of education. The questionnaire was answered by 1000 respondents, with different levels of education (most of them had higher education, and that is 54% of the respondents), of different genders and at different age (respondents over 18 years old were included, and the majority were respondents aged 31- 45). Due to the limited size of this paper, the answers summary will be represented graphically, especially the answers to the closed-ended questions and those for which the Likert scale was applied.

Also, the answers to all closed-ended questions will be represented graphically, separately for each gender, age and level of education in order to make a more detailed analysis. In the paper, only descriptive statistics of the obtained results will be made, and this will be the basis for further research through the use of appropriate quantitative analysis. Microsoft Excel was used for graphical representation and data analysis.

5.2 Analysis of the research results

The analysis and conclusions based on the obtained results will be presented below. At the beginning, the two summary charts based on the analysis of the closed-ended questions and Likert scale questions will be shown.

The following chart represents the summary answers to the closed-ended questions. (See Figure 1)

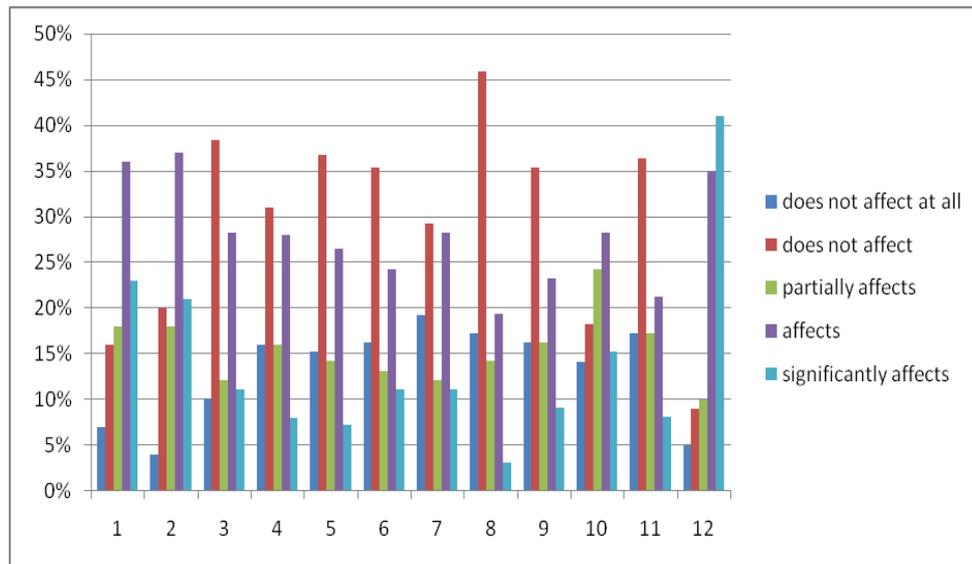


(Figure 1)

Where:

1. Do you use internet banking?
2. Do you use mobile banking?
3. Do you use the service "bill payment for public services" available through electronic banking?
4. Do you use the service "transfers with PP30, PP50, PP53" available through electronic banking?
5. Do you use the service "change card limit" available through electronic banking?
6. Do you use the service "block/unblock cards" available through electronic banking?
7. Do you use the service "submission of card complaints" available through electronic banking?
8. Do you use the service "setting up a standing order" available through electronic banking?
9. Do you use the service "purchase/sell foreign currencies" available through e-banking?
10. Do you use the service "contactless payment with a smartphone instead of a card at POS terminals"?
11. Do you use the "cash-in" enabled at most banks' ATMs?
12. Do you use bank digital kiosks to pay bills without commission, print transaction account statements?

The following chart in figure 2 represents the responses to the Likert scale questions



(Figure 2)

Where:

1. Does the availability of the service "payment of bills for public services online" affect your choice of a bank?
2. Does the availability of the transfer service with PP30, PP50, PP53 online affect your choice of a bank?
3. Does the availability of the service "changing card limits online" affect your choice of a bank?
4. Does the availability of the service "block/unblock cards online" affect your choice of a bank?
5. Does the availability of the service "submission of card complaints online" influence your choice of a bank?
6. Does the availability of the service "setting up a standing order online" affect your choice of a bank?
7. Does the availability of the service "purchase/sell foreign currency online" affect your choice of a bank?
8. Does the offer of co-branded cards by some banks have impact on your choice of a bank?
9. Does the availability of the service "contactless payment with a smartphone instead of a card at POS terminals" affect your choice of a bank?
10. Does the availability of the service "cash-in" enabled at most banks' ATMs affect your choice of a bank?
11. Does the availability of the service "paying bills for public services without a commission/printing statements for transaction account through the banks' digital kiosks" influence your choice of a bank?
12. Do the security systems of banks during Internet transactions with cards significantly affect your choice of a bank?

According to the received responses, the general impression is that the customers are particularly careful when choosing a correspondent bank in terms of availability and opportunities offered by electronic and mobile banking.

This can be particularly seen from the fact that more than 80% of the customers use electronic and mobile banking constantly and more than 90% use electronic and mobile banking constantly or occasionally.

Regarding the questions whether they use electronic and mobile banking to make payments for public services and transfers with PP30, PP50 or PP53, more than 80% of the respondents answered that they use those services constantly or occasionally. In the section on how much it affects their choice of a bank, more than 57% of the respondents answered that it affects or significantly affects their choice of a correspondent bank.

Based on the results obtained hereinbefore, it can be concluded that banks should develop electronic and mobile banking to a large extent because of its simple applicability in making daily and simple transfers.

According to the responses to the questions about the use of the services “change card limits” and “block/unblock cards” through electronic and mobile banking, it can be noticed that 55% of the respondents use or occasionally use the service “change card limit” and 37% “block/unblock cards”. The percentage of respondents who answered how much these types of services influence their choice of a bank is 39% and 36% adequately to the order of the questions. According to the responses above, it can be noted that these types of opportunities offered by electronic and mobile banking are still not well recognized by a large percentage of customers and to a large extent they have no impact on their choice of a correspondent bank.

Regarding the questions whether they use the services “submission of card complaints online”, “setting up a standing order” and “purchase/sale of foreign currencies” through electronic and mobile banking, it can be noted that customers do not use these types of services or they sometimes use them (which is greater than 75%), and their influence when choosing a correspondent bank is about 35%.

It can be concluded that even though banks have been developing and complementing the electronic and mobile banking system to a large extent, the customers use the standard services offered by the electronic and mobile banking more than the other ones.

When asked if they use co-branded cards, more than 55% of the respondents answered that they do not use this type of product offered by the banks.

In this part, banks should start specific marketing activities to familiarize the existing and potential customers with the entire range of products and opportunities they offer and the benefits of using them.

The latest services provided by the banks through electronic and mobile banking are payments with smart watches and the “cash-in” service at ATMs. These services allow your watch to be your payment card, and the “cash-in” ATM replaces the bank cashier, providing 24-hour service.

Although according to the results, a large percentage of customers i.e. more than 60% do not use these services or they use them occasionally, these

services are quite popular with the younger population who are the fastest to accept changes and innovations in the new digital reality.

The digital kiosks that the larger banks in the Republic of North Macedonia have begun to open, offer the opportunity to complete most of the payments at one place and to get printed statement without the involvement of workforce.

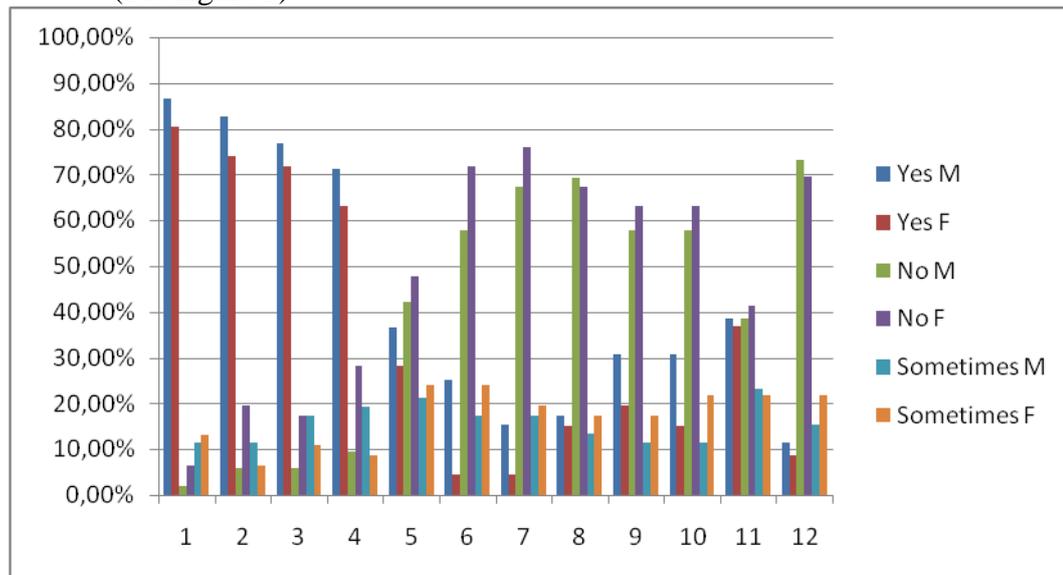
According to the results, only 10% of the population uses these services, and 17% uses them sometimes. This is also due to the fact that only the largest banks have such kiosks in a very small number of places throughout the cities of the country.

In relation to the question that refers to the security systems of banks during internet transactions, more than 75% responded that it affects or significantly affects their choice of a correspondent bank.

In order to make a comparative analysis, the respondents' answers will be shown by gender, age and education.

Respondents by gender gave the following answers to closed-ended questions:

(See figure 3)

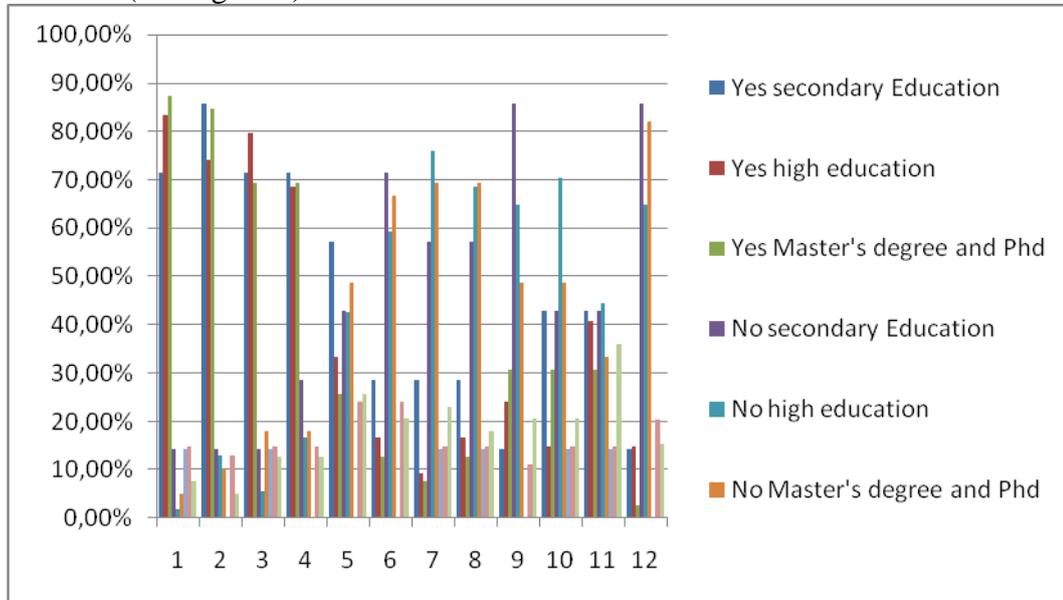


(Figure 3)

It can be concluded from the chart that male respondents had the lowest percentage of positive answers to questions 7, 8 and 12, while female respondents had the lowest percentage of positive answers to questions 6, 7, 8, 10 and 12, which means the emphasis should be placed on the following aspects of electronic banking: block/unblock cards, submission of card complaints available through electronic banking, setting up a standing order, contactless payment with a smartphone instead of a card and payment of bills for public services without commission at digital kiosks. Male respondents had a higher percentage of positive answers to all questions than female respondents. The most noticeable difference is in relation to questions number 6 and 7, referring to the use of the service “block/unblockcards” (25% of the male respondents, only 4.3%

answered affirmatively) and the use of the service “submission of card complaints” (15% of male respondents, and only 4.3% answered affirmatively) available through electronic banking.

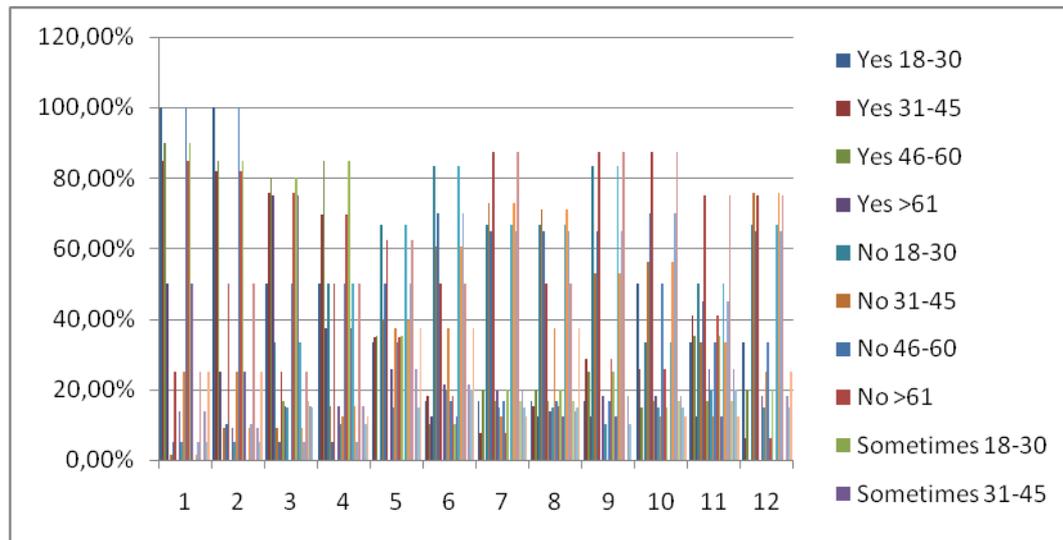
To the same questions, respondents by education gave the following answers: (See figure 4)



(Figure 4)

It can be concluded from this chart that the respondents with secondary education had the lowest percentage of positive answers to questions 9 and 12, the respondents with higher education had the lowest percentage of positive answers to questions 7, 10 and 12, while the respondents with a master's degree and a doctorate had the lowest percentage of positive answers to questions 6, 7 and 12, which means that the emphasis should be placed, apart from the previously mentioned aspects, on the service “purchase/sell of foreign currencies online” (especially for the group with secondary education). Namely, the respondents with higher education, master's degree and doctorate had a higher percentage of positive answers precisely to that question (24% with higher education and 31% with master's degree and doctorate) compared to the respondents with secondary education (14%).

To the same questions, respondents by age gave the following answers: (See Figure 5)



(Figure 5)

It can be concluded from this chart that the respondents aged 18-30 had the lowest percentage of positive answers to questions 6, 7, 8 and 9, respondents aged 31-45 had the lowest percentage of positive answers to questions 7, 8, and 12, respondents aged 46-60 had the lowest percentage of positive answers to questions 6 and 10, while respondents older than 61 did not give a single positive answer to questions number 5, 7, 10 and 12, and to questions 6, 8, 9 and 11 they gave a very low percentage of positive answers. The comparative analysis shows that there is no significant difference between the answers of respondents aged 18-30, 31-45 and 46-60, except for the 12th question (6% answered positively by respondents aged 31-45, and 20% positively answered by respondents aged 46-60).

6. Conclusion

At a time when digitalization is taking up more and more space of our daily activities, our lives have become unimaginable without the electronic and mobile banking which may be considered leaders largely used by the individuals and legal entities.

Their fast availability, simplicity, operation from different geographical meridians, 24- hour availability of the programs and the 24- hour support of the systems by the banks have become an inseparable integral part of the everyday operations not only of the large corporations, but also the small and micro companies and individuals.

The Covid period was an additional accelerator for greater application and availability of the digital processes in the daily life of individuals and companies.

The results of the questionnaire showed that the individuals and companies use the electronic and mobile banking to a large extent and they use a great deal of the novelties introduced by the banks on daily basis.

Therefore, we must note that it is necessary the banks to apply new strategies for advancing e-banking continuously, as well as to have a continuous campaign for promoting alternative communication channels in order to highlight

the advantages and benefits of the use of electronic and mobile banking, both for the users and for our environment.

The results of the questionnaire gave us a clear picture that the banks with the simplest, most accessible and most secure electronic and mobile banking will become the first choice of the users- individuals and companies.

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METHODS FOR VALUING STOCKS

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Abstract

Inventories are current assets, i.e. working capital that directly affect the increase or decrease of the working capital of the enterprise. They are an integral part of everyday work. Data on them are very important indicators in the functioning of the production process. One of the most important issues for achieving economy and rationality in the operation of business entities is determining the optimal amount of storage.

Due to the different types of inventory, as well as determining which is the smallest and which is the largest amount of inventory that a company should have, the management of each individual business entity is faced with a difficult decision.

Here, the accounting records are of particular importance for the perception of operating costs of companies. The value of inventories includes the cost of procurement, conversion costs and other costs incurred in order to bring inventories to their current location and current condition. All products that are not sold are presented by the companies as inventories in the balance sheet.

In the future, when the same products are sold, inventory costs are converted into expenses (cost of sales) and are shown in the income statement. Furthermore, these expenses are deducted from net sales. The additional expenses are deducted and the net profit is obtained.

All this, due to the possibility of assessing the profitability of business entities which is perceived through the gross profit presented in the financial statements.

Keywords: current assets, optimal quantity, production process, costs, gross profit.

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1. Introduction

Beginning from the term inventories, they represent, from both accounting and economic points of view, significant assets in the balance sheet.

According to the International Accounting Standard (IAS 2) Inventories are defined as assets that can be:

- Products intended for sale,
- Ongoing production,
- Raw materials intended for the production process or provision of services.

Namely, according to this definition, stocks can be classified as:

- Stocks of finished products, trade goods, intended for sale,
- Inventory of unfinished production,
- Inventories of raw materials.

These assets are working capital that is ready to be included in the production process or to meet the needs of consumers.

That is, analytically speaking, these assets are treated based on the importance of the continuity of reproduction. They need to ensure continuity of operations because a lack of inventory can cause downtime and certain disruptions in the overall functioning of business entities.

All stocks are of great importance, but here we will emphasize the following:

- ❖ Finished products in stock,
- ❖ Goods in stock,
- ❖ Raw materials in stock,
- ❖ Spare parts in stock,
- ❖ Small inventory,
- ❖ Packaging and tires in stock.

Raw materials are objects in the production process and their participation is seen in the creation of new values. This means that the raw materials analyzed from the aspect of the production process represent a dialectical connection between the means of labor and labor.

Namely, the stocks should observe the principle of continuity in the operation of the enterprises. At no time should a gap be created, ie lack of inventory that will cause an interruption in operation. This situation is specific and can cause cost increases, loss of suppliers, discontinuity, and loss of markets and consumers. But, there is also the opposite case, where the companies accumulate huge stocks and thus cause again increase of costs, tied financial assets in the stocks themselves, increased engagement for their accumulation and storage, and so on.

2. Storage of stocks of raw materials, spare parts and small inventory

Inventories of raw materials, spare parts, and trade goods are valued at their purchase cost. Inventories are an important segment of the assets of the business entity and therefore their accurate records, valuation and spending are of great importance. Purchase value is the sum of invoice value plus dependent costs.

The net invoice value is the invoice value that is reduced for the discounts by the supplier (rebates, bonuses, etc.). While the dependent costs include all direct costs incurred in the process of procurement of inventories, up to the moment of their final storage.

Namely, keeping stocks of raw materials, spare parts, and small inventory has certain disadvantages no matter what type of organization it is. For every company, trade company, etc. (production, sales, service) it is necessary to store a certain amount of inventory, which generates costs. Furthermore, all inventories represent non-current assets. And we know that money and cash are the lifeblood of every business. It is therefore important that inventories are converted into cash within a reasonable period.

Also, each stock requires space and conditions for its storage. If the company does not have its own warehouse space, there is a need for rental which generates additional costs that will be further multiplied throughout the process. The specificity of each stock needs a space that offers complete protection of the same, while a certain type of product requires storage following the prescribed dimensions and the like. Also, security needs to be guaranteed from theft, damage, etc.

Additional conditions that can negatively affect the operation of companies can be supplemented through natural disasters, market closures, competition with lower prices, outdated goods, expiration date, durability, untimely disposal, ie sale of stocks, etc.

Therefore, inventory management requires competent managers who are ready to meet all the needs of the operation of a particular company. Excessive inventory and mismanagement cause costs such as:

- Obsolescence and unusability of inventories,
- Unprofitable operation (lost profit),
- Insurance costs,
- Rearrangement, manipulation and transfer costs,
- Warehouse space costs,
- Costs caused by uneconomical production,
- Costs of losing trust with suppliers,
- Costs from unused benefits in the procurement,
- Other costs.

That is, from this aspect, as well as their importance for the course of production, it contributes to more objective accounting records of the purchases and deliveries of raw materials to the business entities.

3.Determinants of the value stocks

The determination of the value of inventories under IAS 2 is made according to the cost of acquiring them. They should be measured at cost or net worth, whichever is lower. Or to put it more clearly, the procurement of raw materials is accounted for following the invoices delivered by the suppliers. This means that the procurement can be done by suppliers in the country or abroad.

According to the performed procurements from different suppliers, appropriate accounting records are performed. When purchasing raw materials, it

is necessary to emphasize that certain costs are incurred, which are expressed in appropriate accounting accounts. The value of inventories includes procurement costs, conversion costs, and other costs incurred during the procurement until the moment of their storage. The determination of the production, ie the determination of the value of the stocks of the unfinished production and the stock of the finished products, is done by determining the value of the costs, which constitute the production as a process.

Inventories are of great importance to all business entities and therefore their real valuation is necessary. Valuation is a complex process and it is necessary to take into account certain factors, such as: goods on the road, goods in consignment, goods for special sales contracts, then, determining the costs to be taken as inventory costs, as well as determining the method used to determine the cost of the product.

Inventory costs include purchase price, import duties, and other taxes, costs that can be borne by the finished product, materials, and services. The cost of inventories comprises all expenses related to the purchase, preparation, and preparation of inventories for sale.

Conversion costs are those costs that directly or indirectly relate to the production process. These costs are directly related to production and such are direct wages distributed on a systematic basis, fixed and variable costs related to production, which are incurred by conversion, ie conversion of materials into finished products. Fixed overheads are indirect costs that remain relatively constant regardless of the volume of production (depreciation and maintenance of buildings and equipment, as well as management and administration costs). These costs should be allocated to the cost of the final products on a systematic and rational basis, as well as based on normal capacity and by the accounting policy of the enterprise.

Variable overhead costs of production are those indirect costs that directly depend on the volume of production (indirect materials and indirect wages). These costs are allocated in proportion to one of the keys used to allocate fixed overheads. Conversion costs include direct manufacturing costs, fixed overheads, and variable overheads that are related to production and are allocated to production benefits.

Other costs or expenses of the period are included in the cost of inventory only to the extent that they are incurred in bringing them to their current location and current condition.

4. Analytical records and methods for measuring stocks

Given the importance of this type of asset, business entities need to organize appropriate analytical records. This means that through such records it is necessary at all times to accurately know ~~exactly~~ and to have information about each receipt and issuance of funds in the process of production or sale. The analytical records provide individual data on the condition and dynamics of each type of item, ie stocks during the operation of the enterprises. The most important task in inventories is their estimation. The method of estimation, ie the method by which the consumption of inventories is estimated, depends on the value of the

total assets, presented in the balance sheet, ie the number of costs, expenses, and the financial result for the accounting period.

To determine the price of stocks and the price of products sold, four methods are used, namely:

- Specific identification method,
- (FIFO method), First input, first output,
- (LIFO method), Last input, first output,
- Weighted average method.

Each method applies certain steps to how much cost is incurred in inventory. Each of these four methods is permissible, regardless of whether the actual physical product flows follow the assumption of cost flows. The physical flow of products depends on the type of product and the way it is stored (products with a short shelf life - fruit) use one method (FIFO). Or in the case of oil and oil derivatives, decorative stones, etc., another method is used (LIFO), etc.

International Accounting Standard 2 - Inventories provides for several methods of measuring inventory. Specific identification method used when procuring specific goods, ie items that have a high value (cars, expensive equipment, etc.). It can also be noted that this method is the only approach based on the physical flow of inventory units in determining the cost of sales performance.

Namely, this method can be applied in practice in the case when based on the procurement invoice, the specific unit of the stock that has been procured can be directly identified.

Also, for the correct application of the method of specific identification of great importance with each invoice for sale, it is necessary to accurately identify the specific unit and the time when it was sold. In IAS 2 Inventories, methods for measuring inventory expenditure are set out following this Standard. individual costs ".

"the costs of individual types of inventories that are not regularly exchanged and the goods or services produced and allocated to specific projects should be determined using a specific identification of their individual costs."

5. Conclusion

From the content of this paper, it can be concluded that the standard allows an alternative approach to the use of methods, except for stocks where the method of specific identification is applied.

Namely, the weighted average method, or otherwise called the average price method is calculated by dividing the total amount of products for sale by the total units of sale and thus obtaining the average cost price that is applied to the final stock. This method offsets the effects of decreasing and increasing the cost of final supplies. While the FIFO method is based on the fact that the cost of inventories that are first procured, they first enter the production process. According to this method, the flow of material to the output is calculated according to the price of the first purchased material, as long as that material is in stock. After the completion of that material, we move on to the next procurement material, then the next one, etc. The FIFO method measures the final inventories

according to the latest cost prices and includes the initial input targets for procurement in the cost price of the products sold. In case of price increase, this method contributes to higher profit, because the cost price of the sold products includes the prices of the initial purchases. In conditions when prices fall FIFO has the opposite effect, therefore the main disadvantage of the FIFO method is that it emphasizes the determination of higher profits.

That is, the LIFO method is an alternative method, which is based on the fact that the last procurements come out first in the production process. When prices rise the Lifo method underestimates stocks and makes lower profits. In conditions when purchase price is constant, each method has an equal impact on the value of inventory and the cost of sales performance. When the opposite is the case, the purchase price changes, depending on the change in the purchase price each method has a different impact on the net profit. The choice of inventory measurement method can have a crucial impact on the amounts presented in the income statement and the balance sheet. Therefore, all business entities under IAS 2 must disclose the methods used to calculate inventories in their financial statements or footnotes to the financial statements. This is mandatory because the methods used may have certain repercussions on the financial and tax reporting of the business entity.

From the aspect of proper analysis of the financial statements, it is extremely important to know and understand the methods for measuring and calculating inventories due to their impact on the real expression of the profit of the business entity. Therefore, when using inventory measurement methods, it is necessary to start from the principle of consistency, which should be applied to all four types of methods. This principle requires the business entity to use the same accounting-analytical method for a longer period, which makes the financial statements comparable for several years so that the users of financial statements can compare the statements of the company from past and future periods.

Over time, due to certain circumstances, stocks often become obsolete or damaged which results in the reduction in their selling price. In such a case, it is necessary to reduce the value of stocks of finished products to their net realizable value, and the value of raw materials to the level of replacement costs. In such a case, it is necessary to partially write off the inventory at a price lower than the cost price.

It is also necessary to prepare a stock plan at the end of the year. This plan refers to the direct materials of the finished products.

Namely, the plan for the stocks of direct materials is prepared based on the procurement plan.

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THE IMPORTANCE OF AUDITOR'S REPORT

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Abstract

Companies and their business operations represent an important segment of the economic system of a country and they could have a significant impact on its further economic growth. Therefore, these companies should have a stable financial structure and be a model of high-quality financial reporting, or else they could greatly impede smooth functioning of other stakeholders on the market. With respect to that, the auditor is expected to provide going concern assessment in his/ her report in order to timely alert any red flags related to this issue. The purpose of this paper is to analyse the solvency level and its impact on the type of auditor's opinion. The awareness of association between auditor switching and the audit opinion is essential when legislation regarding mandatory audit practice is being done.

Keywords: financial statements, auditor, auditor's report, auditor's opinion.

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1. Introduction

Companies prepare financial statements of their activities, which represent their overall performance. These financial statements are examined and evaluated by independent persons, who assess them according to the industry's generally accepted standards. This examination and evaluation is an audit.

Thus, an audit is an examination and verification of a company's financial and accounting records and supporting documents by an independent professional against established criteria.

When preparing financial statements for completion, they often must contain an auditor's report from an external accountant or auditor. This document evaluates the financial statement's validity and reliability. An auditor's report is ultimately intended to provide reasonable assurance that there are no material errors within an organization's financial statements. Changes in the expectations of society and technology, but also a series of accounting scandals in almost all sectors of the economy, have made the role of auditors more accountable. The public is expecting auditors to be the guardians of proper and continuous functioning of the entity's business or going concern assumption. Therefore, an entity is considered as continuing business if it is able to carry on its operations in the foreseeable future. Auditor's contribution in that sense is to prove the credibility of financial statements, which means that they are presented truly and fairly, as well as reliable, for all stakeholders. In this manner, auditors should state in their reports if there are any intentional material misstatements that could mislead users in making proper decisions. Nevertheless, an auditor should disclose red flags or state if there are any indications, that could be a sign of heightened risk related to future entity's operations. Different authors stated that many entities collapsed unexpectedly, soon after they have published financial statements showing financial issues (Margret, 2012). This could be a significant issue and concern for the managers and owners, and especially for investors who require that their investments provide adequate returns in the future. Thus, auditors should provide necessary information about the financial ability of an entity to reimburse its debts, but at the same time, be able to continue its business operations.

The audit methodology includes: inspection of documentation, examination of policies and procedures, standards and guidelines, processes and frameworks, interviews and inquiries with employees, as well as testing and analytical procedures.

2. Features of auditing

- Audit is a systematic and scientific examination of the books of accounts of a business;
- Audit is undertaken by an independent person or body of persons who are duly qualified for the job.
- Audit is a verification of the results shown by the profit and loss account and the state of affairs as shown by the balance sheet.

- Audit is a critical review of the system of accounting and internal control.
- Audit is done with the help of vouchers, documents, information and explanations received from the authorities. The auditor has to satisfy himself with the authenticity of the financial statements and report that they exhibit a true and fair view of the state of affairs of the concern.
- The auditor has to inspect, compare, check, review, scrutinize the vouchers supporting the transactions and examine correspondence, minute books of shareholders, directors, Memorandum of Association and Articles of association etc., in order to establish correctness of the books of accounts.

3. External auditors

External auditors are independent accounting/auditing firms that are hired by companies subject to an audit. External auditors express their own opinions on whether the financial statements of the company in question are free of material misstatements (these could be due to fraud, error or otherwise).

For publicly-traded companies, external auditors could also be required to provide an opinion on the effectiveness of internal controls over financial reporting.

4. Internal auditors

Internal auditors are those who are employed by the company that they audit. They primarily provide audits related to the effectiveness of the company's internal controls over financial reporting. Since the Sarbanes Oxley Act of 2002 was placed into effect, they must also assess the effectiveness of management's internal controls over financial reporting.

Internal auditors are not independent of the company they perform audit procedures for, but they usually do not report directly to management, in order to reduce the risk that they will be swayed to produce biased assessments.

5. Preparation of the auditor's report

Before the audit, management provides financial information to the audit committee. During the annual audit, the auditor has to review the processes and procedures that the company used to prepare the financial information. The auditors check to see whether the company uses GAAP or other applicable reporting frameworks in preparing the reports.

Annual audits demonstrate transparency in corporate financial reporting, which is a positive step in establishing good relationships between companies and their investors, as well as the public.

After auditing an organization's financial statements, the auditor will prepare their own report where they share their opinion about the validity and reliability of the financial statements.

The auditor is expected to provide a true picture of the organization and their financial statements. In the report, they must also state their connection to the

financial statements, as well as whether they work for the company externally or internally.

The auditor can also express any reservations or additional information that they may have in the auditor's report. For example: if the auditor disagrees with the organization about the valuation of an asset, and they believe that this has a substantial impact on the financial statements, they should state this in their report.

6. Content of the audit's report

Rules are in place which outline what information an auditor's report should include, as well as in what order their report should be presented.

As with almost all accounting documents, auditor's reports are required to adhere to generally accepted standards that are established by the local governing bodies.

Standards such as the Generally Accepted Accounting Principles ensure that the auditor's report on the fairness of certain financial statements is based on a generally accepted government framework.

A general auditor's report would include:

- The name of the company they have audited as well as their accounting method
- A summary of the auditor's responsibility and their report
- The auditor's reservations (if any)
- Conclusion
- Additional information
- A report by the organization's management
- The date of the report and signature of the auditor

7. The importance of auditor's report

The audit report is the report that contains the audit opinion which is issued by independence auditor after their examination on the entity financial statements.

In simple words, they review whether or not financial statement prepared true and fair view in accordance with the accounting standard.

The importance of the audit report has multiple meanings:

- Provide assurance on financial statements. It is issued by the professional auditor.
- The report helps the users of the financial statement to assure that financial information is correct or not.
- As the auditor is independent auditor it is proof that the company is true to their shareholder or not.
- The most important thing is that the government want the business to follow the rules and regulation so audit report tells that they are following the rules and regulation.
- The report converts in easy language so that general people can understand as many shareholders want to know about the audit report.

- Audit report helps the shareholder as the shareholder can believe that company is good and there is no problem.

8. Advantages of an audit report

An audit report is an appraisal of a small business's complete financial status. Completed by an independent accounting professional, this document covers a company's assets and liabilities, and presents the auditor's educated assessment of the firm's financial position and future. Audit reports are required by law if a company is publicly traded or in an industry regulated by the Securities and Exchange Commission (SEC). Companies seeking funding, as well as those looking to improve internal controls, also find this information valuable.

Anyone whose business has a number of staff, functions, office locations or technical systems that s/he is not personally and solely operating may run the risk of errors or irregularities occurring in their business. It is also desirable to check and deter fraud by carrying out a regular audit.

- An audit helps to identify weaknesses in the accounting systems and enables us to suggest improvements. The process keeps our partners informed of areas/situations where advice is useful.
- An audit assures directors not involved in the accounting functions on a day-to-day basis that the business is running in accordance with the information they are receiving, and helps reduce the scope for fraud and poor accounting.
- An audit facilitates the provision of advice that can have real financial benefits for a business, including how the business is running, what margins can be expected and how these can be achieved. Advice can cover anything from the tightening of internal controls, to reducing the risk of fraud or tax planning.
- An audit will enhance the credibility and reliability of the figures being submitted to prospective purchasers. If an owner manager is planning on selling in the next 3 years, it may be beneficial to carry out regular audits.
- An audit may be advantageous if a company is growing and likely to exceed the turnover threshold in the near future, in order to avoid having to revisit the previous years' figures, once the threshold has been reached.
- An audit adds credibility to published information for employees, customers, suppliers, investors and tax authorities: Credit ratings may be affected by not having an audit. Suppliers may not be prepared to give appropriate credit limits. Banks and trade suppliers rely in part on credit rating agencies' assessment of the company, and will look more favourably on companies that have an audit. The HMRC may consider the figures to be less reliable. In the event of insurance claims, loss adjusters often have more faith in audited accounts.
- An audit provides assurance to shareholders (if they are not directors closely involved in the business) that the figures in the accounts show a true and fair view.
- Improved Management Decisions

Managers and executives rely heavily on current financials, budgets, and forecasts to make business decisions, like hiring new team members and

launching new lines of business. Errors at this stage can be critical, so it's important for management to work with the most reliable information possible.

Audited financial statements can provide an extra layer of confidence, allowing management to make specific changes that can promote positive corporate growth and development with the knowledge that the key numbers they are using are correct.

For some businesses, especially those seeking acquisitions or planning large capital expenses, third-party loans are essential. Banks and other lenders generally limit activity to only proven companies with solid business models, restricting access to those without trustworthy reporting.

An audit can provide the verifiable records banks and other lenders like to see, increasing odds of receiving a loan – and better terms and interest rates.

9. Types of auditor opinions

Auditors have the option of choosing among four different types of auditor opinion reports.

An auditor opinion report is a letter that auditors attach to the statutory audit report that reflects their opinion of the audit.

The four types of auditor opinions are:

- Unqualified opinion-clean report
- Qualified opinion-qualified report
- Disclaimer of opinion-disclaimer report
- Adverse opinion-adverse audit report

An unqualified opinion is considered a clean report. This is the type of report that auditors give most often. This is also the type of report that most companies expect to receive. An unqualified opinion doesn't have any kind of adverse comments and it doesn't include any disclaimers about any clauses or the audit process. This type of report indicates that the auditors are satisfied with the company's financial reporting. The auditor believes that the company's operations are in good compliance with governance principles and applicable laws. The company, the auditors, the investors and the public perceive such a report to be free from material misstatements.

When an auditor isn't confident about any specific process or transaction that prevents them from issuing an unqualified, or clean, report, the auditor may choose to issue a qualified opinion. Investors don't find qualified opinions acceptable, as they project a negative opinion about a company's financial status. Auditors write up a qualified opinion in much the same way as an unqualified opinion, with the exception that they state the reasons they're not able to present an unqualified opinion.

A common reason for auditors issuing a qualified opinion is that the company didn't present its records with GAAP.

When an auditor issues a disclaimer of opinion report, it means that they are distancing themselves from providing any opinion at all related to the financial statements. Some of the reasons that auditors may issue a disclaimer of opinion are because they felt like the company limited their ability to conduct a thorough audit or they couldn't get satisfactory explanations for their questions. They may

not have been able to decipher the correct nature of some transactions or to secure enough evidence to support good financial reporting. Auditors that aren't allowed an opportunity to observe operational procedures or to review particular procedures may feel like they're not able to express a definite opinion, so they feel a disclaimer is necessary and in order. The general consensus is that a disclaimer of opinion constitutes a very harsh stance. As a result, it creates an adverse image of the company.

The final type of audit opinion is an adverse opinion. Auditors who aren't at all satisfied with the financial statements or who discover a high level of material misstatements or irregularities know that this creates a situation in which investors and the government will mistrust the company's financial reports.

An auditor's adverse opinion is a big red flag. An adverse audit report usually indicates that financial reports contain gross misstatements and have the potential for fraud. Adverse opinions send out a high alert that the company's records haven't been prepared according to GAAP. Financial institutions and investors take this opinion seriously and will reject doing any kind of business with the company.

Auditors use all types of qualified reports to alert the public as to the transparency, reliability and accountability of companies. Auditor opinions place pressure on companies to change their financial reporting processes so that they're clear and accurate. Companies, investors and the public highly value unqualified reports.

10. Conclusion

A couple of things that make audit reports so complicated is that some of the information isn't readily available and some of the information is subjective in nature.

Auditors have to make various judgmental assumptions in finalizing reports.

The audit opinion is a very important part of the audit report because it makes a statement about a company's financial status to investors.

The audit report provides a picture of a company's financial performance in a given fiscal year. Investors analyze audit reports and base much of their investment decisions on information contained in the audit reports.

Investors are particularly interested in the audit opinion because it's a reflection of the integrity of the audit report and projects an image of the company.

The audit opinion is based on such things as how available the data was to them, whether they had an opportunity to follow all due procedures, the level of materiality and other issues along those lines. All of these things are subjective in nature and depend on the auditor's opinion.

An adverse audit opinion can deflate a company's status. In some cases, adverse audit opinions may lead to litigation.

Regulatory bodies may also scrutinize the audit opinion and the audit report to verify the information for accuracy and any impact on taxation matters.

Board management software programs support the accountability and transparency of financial reporting to ensure that companies get the best auditor opinion letter.

Governance Cloud by Diligent Corporation is a fully integrated platform of board management software solutions that will ensure that companies get through the audit process with flying colors. The platform assures confidentiality with its state-of-the-art security features. Boards can set granular permissions so that only authorized parties have access to various parts of the auditing process.

Auditors form their opinions by making professional judgments and getting legal opinions. It's vital that companies have internal controls and financial policies in place and have them reviewed regularly by the company's internal audit team to ensure that everything is in order before the audit ensues.

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MUNICIPAL BONDS – POSSIBILITIES FOR FINANCING
PROJECTS OF PUBLIC INTEREST

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Abstract

Realization of investment projects is conditioned by the ability of the local self-government units to provide their own funds, on the one hand, and the external financing, on the other hand. The own revenues of the local self-government units in our country are defined by the Law on Local Self-Government and are limited for better quality satisfaction of the needs of the citizens. Thus, insufficient own sources of funding on the one hand and the growing needs of the population on the other hand imposes the need for local self-government units to find alternative sources of funding. One of those alternative sources of funding is municipal bonds. Municipal bonds are the most appropriate form of financing for large capital projects that need long-term financing. The advantage of issuing municipal bonds is the lower price compared to credit borrowing as well as greater responsibility of government officials due to the greater transparency of the whole process. By building a better infrastructure of the local self-government, the living standard at the local level is improved and preconditions are provided for faster development of the real sector and through a greater inflow of foreign investments. Apart from the real effects municipal bonds can. They also have positive marketing effects on the local self-government, which after the issuance of its own securities / municipal bonds becomes a subject of interest of the professional public and from that aspect gets a comparative advantage over other local self-government units in the country and the region.

Keywords: municipal bonds, investment, projects of public interest

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1.Introduction

Realization of projects of investment character is conditioned by the local self-government units' ability to provide their own funds from the one hand, and the external financing on the other hand. Providing of necessary financial resources for the local self-government units by external financing sources enables realization of a large number of infrastructural projects, in a shorter period of time than when their financings would be implemented only by their own funds.

In our country the local self-government units own revenues are defined by the Law for local self-government and are limited to better satisfying of the people's needs. So the insufficient own financing sources from the one hand, and the increased people's needs on the other, impose a need for the local self-government units to find out alternative financing sources. The municipal bonds are one of those alternative financing sources.

The bonds are debt credit securities, with fixed revenue, that the investor buys from the issuer. The investor (creditor) lends its funds for a certain term and defined reimbursement and the issuer (debtor) is obliged to pay the determined amount on the determined date. In other words, the bond is a debt certificate, a proof for the funds that the investor has lent to the issuer and under which conditions.

2.Stages in the procedure of issuing and selling municipal bonds

The entire process for organizing the municipal bonds issuance and sale is implemented through several stages(Zografski,The Municipal bonds – possibility for communal needs financing.):

- Forming a project team
- Municipal bond issuing
- Implementation of an internal control system

2.1 Forming a project team

In the first stage that comprises the preparing activities, a project team is formed, that will implement the activities for the process of municipal bonds issuing and selling. The project team consists of the persons from the internal municipal services, an auditor and a brokerage company/bank (Zografski,The Municipal bonds – possibility for communal needs financing).The representatives from the internal municipal services, as members, are: responsible person for finances, and experts in the budget planning and legal affairs. Their primary task is identification of priority projects, then the issuance volume, conditions for its implementation and allocation of the collected funds.

Based on the defined law regulations and confirmed Rules for quotation on the Stock Exchange it is necessary to appoint independent auditor who is obliged to implement an audit of the issuer's financial reports in the last three years.

For more successful implementation of the preparing activities for the securities primary issuance, and the preparations before their quotation on the Stock Exchange, the issuer might engage a brokerage company/bank member of the Stock Exchange. The brokerage company/bank should assist the issuer in choosing the methods for funds collecting, preparing the brochure in which they are confirmed: the issuance aims, the provided funds allocation, the issuance volume, the interest rate height and the payment term, the rights contained in the bond, way for the issuance providing (whether the state will be a guarantee, or some bank, investment fund or insuring company).

2.2 Implementing of the bonds issuance procedure

After the request for issuance is positively assessed by the Commission for securities the activity for selling the municipal bonds starts.

The selected brokerage company/bank organizes a public call (in which the place and the time for the bonds registration and purchase are stated) for the bonds registration and purchase.

The sale success is largely conditioned by the bonds issue guarantee (a bank or banks consortium, investment funds) and in this case a priority is given to that guarantee who will offer the best conditions concerning the price.

After the issued bonds sale ends, the issuer makes a request for quotation on the Stock Exchange and in this way the issuance is available to the public and for trading in the official Stock Exchange market (Zografski, Municipal bonds – possibilities for communal needs financing).

2.3 Internal control system

The issuer that has made issuance of bonds that are listed on the Stock Exchange is obliged to introduce a control system for its work. The control is carried out by representatives of the municipal internal services (internal auditor and persons responsible for finances), and it refers to the following (Ibid): transactions verification, implemented evidence and control, fulfillment of the obligations for data publishing in the public and the Stock Exchange, contacts with the Central securities depository, securing the bonds owners' rights, planning of interests payment, closing date of the book of bondholders etc.

The issuer whose bonds are traded on the Stock Exchange is obliged to submit annual financial reports to the Stock Exchange and to publish in public all information concerning the project chosen as priority, for which realization the municipal bonds issuing has been carried out, in order to inform the investors, i.e. the bondholders continuously (Ibid).

3. Legal framework for municipalities indebtedness

The indebtedness is a procedure for creating financial liabilities by concluding a contract for loans and/or securities issuing (The Law for amending and supplementing the Law for ULSG financing, Official gazette of R.Macedonia no. 67/2007).

The municipality may take on debt through securities issuance according to the Law for local self-government units financing. (Official gazette of R. Macedonia no. 61/2004, 96/2004, 67/2007, 156/2009 and 47/2011).

The municipality may take on debt (in the country and abroad) only by a prior consent of the Government of R. Macedonia, settled on the basis of the Ministry for finance opinion (Guide for municipal bonds issuing, The Ministry for finance, R. Macedonia, 2011).

4.1 Indebtedness limits

On the basis of the Law for the local self-government units financing, the municipality may take long-term debt for (The Law for amending and supplementing the Law for ULSG financing, Official gazette of R. Macedonia no. 156/2009):

- Financing capital projects and investments,
- Refinancing the debts occurred on the basis of the a.m. ,
- Liabilities on the basis of activated state guarantees,
- Liabilities on the basis of loans taken and
- Protection and removal of consequences caused by natural disasters and ecological disasters.

The municipality can take long-term debt according to the provisions of this law and should give guarantees for the public enterprises established by the local self-government, after the Ministry of finance confirms that (The Law for amending and supplementing the Law for ULSG financing, Official gazette of R. Macedonia no. 67/2007):

- In a period of at least two fiscal years in continuation from the day of the Law for the local self-government financing application, to submit regularly positively assessed financial reports and
- In a period of at least two fiscal years in continuation from the day of the Law for the local self-government financing application, there have not been received outstanding liabilities towards creditors over 90 days since the date of receiving.

The municipality can take long-term debt upon getting consent for indebtedting by the Government of R. Macedonia, after receiving prior positive opinion by the Ministry for finance, although in the period of at least two fiscal years positively assessed financial reports have not been submitted only excepting the capital investments financing.

4.2 Indebtedness procedure

The procedure for providing positive opinion for municipality indebtedting by a loan or bonds issuance from the Ministry for finance is regulated by the Law for public debt (Off. Gazette of R.M. no. 62/2005, 88/2008 and 35/2011) and by the instruction for the way and procedure for the municipalities and public enterprises indebtedness in R. Macedonia (The Law for amending and

supplementing the Law for ULSG financing, Official gazette of R. Macedonia no.67/2007).

The municipalities start the indebtedness procedure with submitting a request for an opinion for indebtedness to the Ministry for finance (Ibid).

Necessary data that the municipality should submit to the Ministry for finance for each new indebtedting are(Ibid):

- Municipal Council decision,
 - The indebtedness purpose,
 - Proposal for conditions under which the municipality wants to take debt,
 - Filled forms for indebtedness,
 - Information on the funds sources,
 - The Mayor's notarized statement, with personal criminal liability for received outstanding liabilities towards the creditors over 90 days from the date of receipt.

The Ministry for finance will assess positively the municipalities' indebtedness via bonds issuance, if it ascertains the indebtedness amounts compliance according to the limits in the Law for the local self-government units financing and the defined targets for public debt and the fiscal deficit.

So, for a successful use of the indebtedness by the local self-government units as a way for providing additional resources for infrastructural projects realization, first it is indispensable to define legal framework with which the entire indebtedness process will be regulated and all necessary conditions which should be observed will be established.

Therefore, the local self-government unit that has decided to realize the investment projects implementation in this way, it is indispensable to have its own policy for indebtedness and strategy for the debt management. The strategy for the debt management should enable the local self-government an adequate indebtedness level that will not disturb its financial stability at any moment, and will enable the implementation of the stated investment aims.

5. The municipalities indebtedness via municipal bonds issuing advantages

The municipal bonds issuance offers a possibility for providing high capital volume at once, with a lower interest rate compared to the other indebtedness instruments. Because of that, the bonds are the most appropriate form for financing big capital projects that need long-term financing.

There are potential benefits from the municipalities' indebtedness via municipal bonds issuance in order to finance projects of public interest, for both the municipalities and the investors. The practice from other countries just confirms that.

5.1 Possible benefits for the municipalities from the bonds issuance

As possible benefits for the local self-government units from the municipal bonds issuing, we can mention the following ones (Indebtedness, guarantees issuing and credit risks management of ULSG, USAID-University American College, 2007.p.64):

1) Effective way for financial resources mobilization

Namely, the local self-government units, through the municipal bonds issuance, provide the necessary financial resources for projects of public interest realization at once and with a lower interest rate compared to the indebtedness via bank credits usage.

2) Projects realization (new investments)

The local self-government units use the funds provided via the municipal bonds issuance for new investments, i.e. creation of new, identified priority projects (schools, roads, hospitals, sports facilities, municipal infrastructure) that will enable improvement of the people's urban life quality.

3) Investments, employments, production growth and improvement of the people's life quality

The concrete projects implementation raises new investing activities, employment growth (through engaging people for their performance), and that provides better life of the local population, i.e. better living standard.

4) Local and regional development

With the new projects performance the local infrastructure is improved and that provides a base for improvement of both local development (should the projects of local importance are in question) and regional development (if the projects of regional importance are financed via the municipal bonds, through several units of the local self-government teaming).

5) Higher financial independence from the central authority

Namely, the local self-government units independently provide financial construction for the concrete identified projects realization via the municipal bonds issuance, without expecting help, i.e. financial resources from the central authority. With that they provide higher financial independence.

6) Creating better municipality image

The fact that a local self-government unit has issued municipal bonds means fulfillment of some criteria and favorable indicators for the financial state of the particular unit of the local self-government, which at the end means its good working.

7) Creation of the municipality good credit history through timely debt servicing and other current activities

Namely, by issuing municipal bonds, the local self-government unit is obliged to pay, immediately or in installments, to the bondholder the amount of the bonds nominal value and the interest on the defined date. Timely fulfillment of these obligations influences the municipality credit history.

8) Principles for successful planning of the financial flows

By respecting these principles the unit of the local self-government should plan the financial flows, first of all influx of funds with which the obligations that are taken in respect of the issued securities will be settled.

9) Preparation for the projects investment studies (including cost-benefit analyses)

Namely, before the particular project realization starts, it is indispensable to prepare an investment study which will show the project feasibility, i.e. justification of its implementation.

10) The business climate improvement

The new projects realization contributes to development of the local infrastructure, and with that, conditions for new investors coming and for new business activities are created, i.e., improvement of the business climate in the particular town or municipality.

11) Raising of investors' awareness

Namely, introduction of the possibilities for this kind of investments, the kinds of municipal bonds, possible benefits, to the investors, and the social importance of this kind of investment (participation in building local infrastructure, i.e. the environment in which they live).

5.2 Possible benefits for the investors from bonds buying

Municipal bonds as an alternative way for financing are also important because they enable the local population to participate by their own resources in investing in their town or municipality, and higher transparency of the entire process of financing in this way due to the local authority representatives' obligation for disclosing some information from their working.

As possible benefits for the investors from investing in municipal bonds, we can mention the following ones (Indebtedness, guarantees issuing and credit risks management of ULSG, USAID-University American College, 2007):

1) Getting an attractive yield which depends on the issuer quality and the maturity, and it would move to several percentage points over the risk-free securities yield or the bank deposits interests.

¹In that way the investor will get higher revenue from the municipal bonds than when he saves in the bank or invests into risk-free securities.

2) Capital market development and the possibility for better portfolio diversification

Namely, the municipal bonds wider use is an additional impulse for capital market and financial market further development, that leads to improvement of the portfolios diversification.

3) The yield from these bonds is free of personal income tax

The municipal bonds yield tax exemption is one motive more for preferring this kind of securities and their wide application, especially in the foreign practice.

4) Investment in the living environment development (effects visibility)

By investing in municipal bonds, the investors in fact participate in particular project of public interest realization and in that way they also participate in the local infrastructure advancement and the living environment development.

6. Risk at municipal bonds issuing

When municipal bonds are issued with an aim to finance projects of public interest, risks cannot be avoid. These risks can be divided into two groups⁴:

- Systematic risk (state, political)
- Not-systematic risk

Within the first group of systematic risks (state, political) the following kinds of risks are contained⁵:

- 1) Legislative changes – risk that the legislative power will change tax regulations in a way that would have negative influence on the yield of the investment into securities, i.e. municipal bonds.
- 2) The state/municipality lower rating – risk of the securities value decreasing as a change in the issuer's credit rating.
- 3) Currency risk – risk of change in the exchange rate with the investments in securities denominated into foreign currency. Here, the exchange rate fluctuation may lead to the investments increasing or decreasing, i.e. to influence their yield.
- 4) Risk of inflation – risk of securities value decreasing due to the general price increase.
- 5) Interest rates – risk of incertitude of the future money price (future interest rate) that influences the bonds price (the bonds price moves in the opposite direction of the interest rate).
- 6) Market risk – risk of the securities price change.
- 7) Political risk – risk of unexpected regular changes, negative movements in the international relations or in the state etc., that influence the capital market and the investor's position.

Second group of non-systematic risks the following kinds of risks are contained⁶:

- 1) Risk of not fulfilling the liabilities (credit risk) – risk that the issuer will not be able to settle, partially or totally, its liabilities at the moment of their maturity or to refinance the immediate liabilities due to financial problems.
- 2) Liquidity – impossibility to sell securities due to the demand decreasing or the market inefficiency on the other hand.

7. Municipal bonds issuance

7.1 Law frameworks

The procedure for securities issuing is regulated by the Law for securities (Official gazette of R. Macedonia no.95/2005, 25/2007, 07/2008 and 57/2010). According to the Law for securities, they can be issued by private or public offer.

⁴Indebtedness, guarantees issuing and credit risks management of ULSG, USAID-University American College, p.58

⁵Ibid., p.58

ebtedness, guarantees issuing and credit risks management of ULSG, USAID-University American College.,p.59

7.2 Bond issuance by private offer

One of the ways by which the municipality can issue bonds is by a private offer. The municipality agrees in advance with a limited number of investors for bonds-subject of the offer, redemption.

The bonds issuance by a private offer consists of several steps:

1. Decision for bonds issuance by a private offer.
2. Finding out interested investors.
3. Request for an approval for bonds issuance by a private offer from the Commission for securities.
4. Decision on the request
5. Notification of recorded and paid bonds and the bonds private offer realization.

5.3. Bonds issuance by public offer

One of the ways for bonds issuance is by a public offer. Securities public offer in the sense of the Law for securities is a public call for securities registering and buying published in the media. The whole procedure is implemented through several steps.

- 1) Decision for securities issuance by a public offer.
- 2) Selection of external consultants and concluding a contract with the bonds issuance agent.
- 3) Request for an approval from the Commission for securities by a public offer.
- 4) Decision for the request for bonds issuance approval.
- 5) Starting the procedure for the bonds registration and payment.
- 6) The public offer advertising.
- 7) Procedure for the bonds registration.
- 8) Notification on the public offer result.
- 9) The bonds registration in an authorized depositor.

The municipal bonds issuance offers a possibility for providing a large volume of capital all at once, with a lower interest rate compared to the other debt instruments. Because of that the bonds are the most appropriate form of financing large capital projects that require long-term financing.

The community uses the funds provided through the municipal bonds issuance for financing the municipal infrastructural facilities of vital importance for satisfying the people's needs and for improving the quality of the urban life, such as: paths for pedestrians, schools, hospitals, municipal infrastructure, roads or a net of local roads, centers for sports and recreation, landscaping, electrification etc.

Through municipal bond issuance, the regional utility projects can be also financed, by several self-governments units teaming in financing, with which this way of financing is even more attractive.

The municipal bonds as an alternative way of financing are also important because they enable the local population to participate in their town or municipality investments by their own resources and to get a favorable interest for that.

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MIRRLEESIAN OPTIMAL TAXATION: THEORY AND
NUMERICAL SOLUTIONS

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Abstract

In this paper Mirrleesian optimal taxation will be reviewed. Models in optimal tax theory typically posit that the tax system should maximize a social welfare function subject to a government budget constraint, considering how individuals respond to taxes and transfers. James Mirrlees (1971) launched the second wave of optimal tax models by suggesting a way to formalize the planner's problem that deals explicitly with unobserved heterogeneity among taxpayers. There are static and dynamic versions of this model and we will review them or introduce them in this paper. Social welfare is larger when resources are more equally distributed, but redistributive taxes and transfers can negatively affect incentives to work and earn income in the first place. This creates the classical trade-off between equity and efficiency which is at the core of the optimal labor income tax problem. We will describe main theoretical findings in this literature as well as numerical examples with their policy implications.

Keywords: Optimal taxation, Mirrlees tax model, asymmetric information, non-linear tax rates, second-best analysis of taxes

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1.Introduction

This paper will review topic from optimal Mirrleesian taxation. In the classical framework initiated by Mirrlees (1971), the theory studies the maximization of a utilitarian social welfare function by a benevolent planner who only observes the pretax labor income of agents whose wages differ, but whose preferences are identical. The other studies have relaxed the assumptions in order to take heterogeneity among agents into account. These studies include: Mirrlees (1976), Saez (2001), Choné and Laroque (2010), see Fleurbaey, Maniquet (2018). Mainly approach is based on asymmetric information. Public policies apply to the individuals on the basis of what the government knows about them. *Second welfare theorem*² states, that where a number of convexity and continuity assumptions are satisfied, an optimum is a competitive equilibrium once initial endowments have been suitably distributed. In general, complete information about the consumers for the transfers is required to make the distribution requires, so the question of feasible lump-sum transfers arises here. Usually the optimal tax systems combine flat marginal tax rate plus lump sum grants to all the individuals (so that the average tax rate rises with income even if the marginal does not), Mankiw NG, Weinzierl M, Yagan D. (2009). Rigorous derivations of the optimal tax rates include: Atkinson, Stiglitz, (1980); Kaplow, (2008); Mirrlees (1976), Mirrlees (1986); Stiglitz, (1987); Tuomala, (1990). The choice of the optimal redistributive tax involves tradeoffs between three kinds of effects: equity effect (it changes the distribution of income), the efficiency effect from reducing the incentives, the insurance effect from reducing the variance of individual income streams, Varian, H.R. (1980). Saez (2001) argued that “unbounded distributions are of much more interest than bounded distributions to address high income optimal tax rate problem”. Saez (2001) investigated (four cases)³ and the optimal tax rates are clearly U-shaped, see Diamond (1998) too. Saez, S. Stantcheva (2016), define social marginal welfare weight as a function of agents consumption, earnings, and a set of characteristics that affect social marginal welfare weight and a set of characteristics that affect utility. Piketty, Saez, Stantcheva (2014), derived optimal top tax rate formulas in a model where top earners respond to taxes through three channels: labor supply, tax avoidance, and compensation bargaining. Dynamic taxation most famous examples in the literature are: Diamond-Mirrlees (1978); Albanesi-Sleet (2006), Shimer-Werning (2008), Ales-Maziero (2009), Golosov-Troskin Tsyvinsky (2011). Sizeable literature in NDPF studies optimal taxation in dynamic settings, (Golosov, Kocherlakota, Tsyvinski (2003), Golosov, Tsyvinski, and Werning (2006), Kocherlakota (2010)). Here we will derive optimal linear, non-linear tax rates for top earners and we will derive results in heterogenous preferences

² Second fundamental theorem is giving conditions under which a Pareto optimal allocation can be supported as a price equilibrium with lump-sum transfers, i.e. Pareto optimal allocation as a market equilibrium can be achieved by using appropriate scheme of wealth distribution (wealth transfers) scheme (Mas-Colell, Whinston et al. 1995)

³ Utilitarian criterion, utility type I and II and Rawlsian criterion, utility type I and II.

environment for dynamic taxation. Optimal taxation is not to be confused with Pareto efficient taxes (see Werning (2007)).

2. Mirrlees framework optimal top tax rate : derivation

The effect of small tax reform in Mirrless (1971) model is examined in Brewer, M., E. Saez, and A. Shephard (2010), where indirect utility function is given as : $U(1 - \tau, R) = \max_w((1 - \tau)w + R, z)$, where w represents the taxable income R is a virtual income intercept, and τ is an imposed income tax. Marshallian labor supply is $w = w(1 - \tau, R)$, uncompensated elasticity of the supply is given as: $\varepsilon^u = \frac{(1-\tau)}{w} \frac{\partial w}{\partial(1-\tau)}$, income effect is $\eta = (1 - \tau) \frac{\partial w}{\partial R} \leq 0$. Hicksian supply of labor is given as: $w^c((1 - \tau, u))$, this minimizes the cost in need to achieve slope $1 - \tau$, compensated elasticity now is : $\varepsilon^c = \frac{(1-\tau)}{w} \frac{\partial w^c}{\partial(1-\tau)} > 0$, Slutsky equation now becomes: $\frac{\partial w}{\partial(1-\tau)} = \frac{\partial w^c}{\partial(1-\tau)} + z \frac{\partial z}{\partial R} \Rightarrow \varepsilon^u = \varepsilon^c + \eta$, where η represents income effect : $\eta = (1 - \tau) \frac{\partial w}{\partial R} \leq 0$. With small tax reform taxes and revenue change i.e.: $dU = u_c \cdot [-wdt + dR] + dw[(1 - \tau)u_c + u_z] = u_c \cdot [-zdt + dR]$. Change of taxes and its impact on the society is given as: $dU_i = -u_c dT(w_i)$. Envelope theorem here says : $U(\theta) = \max_x F(x, \theta), s. t. c > G(x, \theta)$, and the preliminary result is : $U'(\theta) = \frac{\partial F}{\partial \theta}(x^*(\theta), \theta - \lambda^*(\theta) \frac{\partial G}{\partial \theta}(x^*(\theta), \theta))$. Government is maximizing :

$$0 = \int G'(u^i) u_c^i \cdot \left[(W - w^i) - \frac{\tau}{d(1 - \tau)} eW \right] \quad (1)$$

1. mechanical effect is given as: $dM = [w - w^*] d\tau$,
2. welfare effect is : $dW = -\bar{g} dM = -\bar{g}[w - w^*]$, and at last
3. the behavioral response is : $dB = -\frac{\tau}{1-\tau} \cdot e \cdot w d\tau$.

And let's denote that:

$$dM + dW + dB = d\tau \left[1 - \bar{g}[w - w^*] - e \frac{\tau}{1 - \tau} \cdot w \right] \quad (2)$$

When the tax is optimal these three effects should equal zero i.e. $dM + dW + dB = 0$ given that: $\frac{\tau}{1-\tau} = \frac{(1-\bar{g})[w-w^*]}{e \cdot z}$, and we got

$$\tau = \frac{1-\bar{g}}{1-\bar{g}+a \cdot e}, \alpha = \frac{w}{w-w^*}, \text{ and}$$

$dM = d\tau[w - w^*] \ll dB = d\tau \cdot e \frac{\tau}{1-\tau} \cdot w$, when $w^* > w^T$, where w^T is a top earner income. Pareto distribution is given as:

$$1 - F(w) = \left(\frac{k}{w}\right)^a; f(w) = a \cdot \frac{k^a}{w^{1+a}} \quad (3)$$

α is a thickness parameter and top income distribution is measured as:

$$w(w^*) = \frac{\int_z^\infty s f(s) ds}{\int_z^\infty f(s) ds} = \frac{\int_z^\infty s^{-\alpha} ds}{\int_z^\infty s^{-\alpha-1} ds} = \frac{a}{(a-1)} \cdot w^* \quad (4)$$

Empirically $\alpha \in [1.5, 3]$, $\tau = \frac{1-\bar{g}}{1-\bar{g}+\alpha \cdot \varepsilon}$. General non-linear tax without income effects is given as:

$$\frac{T'(w_n)}{1-T'(w_n)} = \frac{1}{e} \left(\frac{\int_n^\infty (1-g_m) dF(m)}{w_n h(w)} \right) = \frac{1}{e} \left(\frac{1-H(w_n)}{w_n h(w_n)} \right) \cdot (1-G((w_n))) \quad (5)$$

Where elasticity or efficiency $e = \left[\frac{1-\tau}{w} \right] \times \frac{dw}{d(1-\tau)}$. Where $G((w_n)) = \frac{\int_n^\infty g_m dF(m)}{1-F(n)}$, and $g_m = G'(u_m)/\lambda$ this is welfare weight of type m . But non-linear tax with income effect takes into account small tax reform where tax rates change from $d\tau$ to $[w^*, w^* + dw^*]$. Every tax payer with income $w > w^*$ pays additionally $d\tau dw^*$ valued by $(1-g(w)) d\tau dw^*$. Mechanical effect is :

$$M = d\tau dw^* \int_{z^*}^\infty (1-g(w)) d\tau dw^* \quad (6)$$

Total income response is $I = d\tau dw^* \int_{z^*}^\infty \left(-\eta_z \frac{T'(w)}{1-T'(w)}(w) \right) h(w) dw$. Change at the taxpayers form the additional tax is $dz = -\varepsilon_{(z)}^c \frac{T'' dz}{1-T'} - \eta \frac{d\tau dw^*}{1-T'(w)} \Rightarrow -\eta \frac{d\tau dw^*}{1-T'(w) + z \varepsilon_{(w)}^c T''(w)}$, if one sums up all effects can be obtained:

$$\begin{aligned} \frac{T'(w)}{1-T'(w)} &= \frac{1}{\varepsilon_{(z)}^c} \left(\frac{1-H(w^*)}{z^* h(w^*)} \right) \\ &\times \left[\int_{z^*}^\infty (1-g(w)) \frac{h(w)}{1-H(w^*)} dz \right. \\ &\left. + \int_{z^*}^\infty -\eta \frac{T'(w)}{1-T'(w)} \frac{h^*(w)}{1-H(w^*)} dw \right] \quad (7) \end{aligned}$$

With linear tax: $\frac{dz}{z_n} = \frac{1+\varepsilon_{(n)}^u}{n}$ and with non-linear tax:

$$\frac{\dot{w}_n}{w_n} = \frac{1+\varepsilon_{(n)}^u}{n} - \dot{w}_n \frac{T''(w_n)}{1-T''(w_n)} \varepsilon_{w(n)}^c \quad (8)$$

Optimal tax formula here if $dM + dW + dB = 0$ is given as : $\tau = \frac{1-\bar{g}}{1-\bar{g}+\alpha \cdot \varepsilon}$;

$$\alpha = \frac{w}{w-w^*} \text{ where } \bar{g} = \frac{\int g_i \cdot w_i}{w \cdot \int g_i} \text{ and } g_i = G'(u^i) u_c^i.$$

2.1 Formal derivation of optimal non-linear tax rates with no income effects

This point actually follows Mirrlees (1971) and Diamond (1998), in deriving non-linear optimal tax rate with no-income effects. Utility function is quasi linear:

$$u(c, l) = c - v(l) \quad (9)$$

c is disposable income and the utility of supply of labor $v(l)$ is increasing and convex in l . Earnings equal $w = nl$ where n represents innate ability. CDF of skills distribution is $F(n)$, it's PDF is $f(n)$ and support range is $[0, \infty)$. Government cannot observe abilities instead it can set taxes as a function of labor income $c = w - \tau(w)$. Individual n chooses l_n to maximize :

$$\max(nl - \tau n(l) - v(l)) \quad (10)$$

When marginal tax rate τ is constant, the labor supply function is given as: $l \rightarrow l(n(1 - \tau))$ and it is implicitly defined by the $n(1 - \tau) = v'(l)$. And $\frac{dl}{d(n(1 - \tau))} = \frac{1}{v''(l)}$, so the elasticity of the net-of-tax rate $1 - \tau$ is:

$$e = \frac{\left(\frac{n(1-\tau)}{l}\right) dl}{d(n(1-\tau))} = \frac{v'(l)}{lv''(l)} \quad (11)$$

As there are no income effects this elasticity is both the compensated and the uncompensated elasticity. The government maximizes SWF:

$$W = \int G(u_n) f(n) dn \quad s.t. \quad \int c_n f(n) dn \leq \int n l n f(n) dn - E(\lambda) \quad (12)$$

u_n denotes utility, $w_n = n l_n$ denotes earnings, c_n denotes consumption or disposable income, and $c_n = u_n + v(l_n)$. By using the envelope theorem and the FOC for the individual, u_n satisfies following:

$$\frac{du_n}{dn} = \frac{lnv'(ln)}{n} \quad (13)$$

Now the Hamiltonian is given as:

$$\mathcal{H} = [G(u_n) + \lambda \cdot (n l_n - u_n - v(l_n))] f(n) + \phi(n) \cdot \frac{lnv'(ln)}{n} \quad (14)$$

In previous $\phi(n)$ is the multiplier of the state variable. The FOC with respect to l is given as:

$$\lambda \cdot (n - v'(l_n)) + \frac{\phi(n)}{n} \cdot [v'(l_n) + l_n v''(l_n)] = 0 \quad (14)$$

FOC with respect to u is given as:

$$-\frac{d\phi(n)}{n} = [G'(u_n) - \lambda] \quad (15)$$

If integrated previous expression gives: $-\phi(n) = \int_n^\infty [\lambda - G'(u_m)] f(m) dm$ where the transversality condition $\phi(\infty) = 0$, and $\phi(0) = 0$, and $\lambda = \int_0^\infty G'(u_m) f(m) dm$ and social marginal welfare weights $\frac{G'(u_m)}{\lambda} = 1$. Using

$$\frac{[v'(l_n) + l_n v''(l_n)]}{n} = \left[\frac{v'(l_n)}{n} \right] \left[1 + \frac{1}{e} \right] \quad (16)$$

We can rewrite FOC with respect to l_n as:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left(1 + \frac{1}{e} \right) \cdot \left(\frac{\int_n^\infty (1 - g_m) dF(m)}{n f(n)} \right) \quad (17)$$

In previous expression $g_m = \frac{G'(u_m)}{\lambda}$ which is the social welfare on individual m . The formula was derived in Diamond (1998). If we denote $h(w_n)$ as density of earnings at w_n if the nonlinear tax system were replaced by linearized tax with marginal tax rate $\tau = \tau'(w_n)$ we would have that following equals $h(w_n) dw_n = f(n) dn$ and $f(n) = h(w_n) l_n (1 + e)$, henceforth $n f(n) = w_n h(w_n) (1 + e)$ and we can write previous equation as:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \frac{1}{e} \cdot \left(\frac{\int_n^\infty (1 - g_m) dF(m)}{w_n h(w_n)} \right) = \frac{1}{e} \cdot \left(\frac{1 - H(w_n)}{w_n h(w_n)} \right) \cdot (1 - G(w_n)) \quad (18)$$

In the previous expression $G(w_n) = \int_n^\infty \frac{dF(m)}{1 - F(n)}$ is the average social welfare above w_n . If we change variables from $n \rightarrow w_n$, we have $G(w_n) = \int_{w_n}^\infty \frac{g_m dH(w_m)}{1 - H(w_n)}$. The transversality condition implies $G(w_0 = 0) = 1$.

2.2 Optimal linear tax formula

First modern treatment of optimal linear tax was provided by Sheshinski (1972). Optimal linear tax formulae is given as:

$$\int_0^\infty \tau(w) f(n) dn = \int_0^\infty (w - \alpha - \beta w) f(n) dn = 0 \quad (19)$$

$f(n)$ is PDF of ability n , α is a tax parameter and is a lump-sum tax if $\alpha < 0$ and tax-subsidy if $\alpha > 0$ given to an individual with no income. $1 - \beta$ is a marginal tax rate i.e. $0 \leq \beta \leq 1$ so that marginal tax rate is non negative in the linear tax function which is $\tau(w) = -\alpha + (1 - \beta)w$, after tax consumption is $c(w) = w - \tau(w) = \alpha + \beta w$. Optimal labor supply is given as: $\ell = \hat{\ell}(\beta n, \alpha)$. If λ is the lowest elasticity of labor supply function and it is equal to $\lambda = \lim_n \inf \left[\frac{\beta}{\hat{\ell}} \frac{\partial \hat{\ell}}{\partial \beta} \right]$ so that $\frac{\beta}{\hat{\ell}} \frac{\partial \hat{\ell}}{\partial \beta} \geq \lambda$. Revenue maximizing linear tax rate is given as:

$$\frac{\tau^*}{1 - \tau^*} = \frac{1}{e} \quad \text{or} \quad \tau^* = \frac{1}{1 + e} \quad \text{Government FOC given}$$

$SWF = \int \omega_i G(u^i(1 - \tau)w^i + \tau w(1 - \tau) - E, w^i) df(i)$ is :

$$0 = \frac{dSWF}{d\tau} = \int \omega_i G'(u_i) u_c^i \cdot \left((w - w^*) - \tau \frac{dw}{d(1 - \tau)} \right) df(i) \quad (20)$$

Social marginal welfare weight g_i is given as: $g_i = \frac{\omega_i G'(u_i) u_c^i}{\int \omega_j G'(u_j) u_c^j df(j)}$. So that optimal linear tax formula is:

$$\tau = \frac{1 - \bar{g}}{1 - \bar{g} + e} \quad (21)$$

$$\text{where } \bar{g} = \frac{\int g_i w_i df(i)}{w}$$

2.3 Diamond ABC formula

Here in this paragraph a Diamond (1988) formula has been derived. Welfare weights are distributed with a CDF: $\Psi(n)$ and PDF: $\psi(n)$. The government maximization function is (objective function) is given as:

$$\int_n^{\bar{n}} u(n) \psi(n) dn \quad (22)$$

Now by assumption $\int_n^{\bar{n}} u(n) \psi(n) dn = 1$, which implies that $\lambda = 1$, λ aggregates the social welfare weights across the entire economy.

$$\lambda = \int_n^{\bar{n}} \Psi u(n) \psi(n) dn \quad (23)$$

FOC can be found as previously, form the Hamiltonian $\mathcal{H} = [\Psi(u_n) + \lambda \cdot (nl_n - u_n - v(l_n))] \psi(n) + \phi(n) \cdot \frac{lnv'(ln)}{n}$. In previous $\phi(n)$ is the multiplier of the state variable. The FOC with respect to l is given as: $\lambda \cdot (n - v'(l_n)) + \frac{\phi(n)}{n} \cdot [v'(l_n) + l_n v''(l_n)] = 0$. FOC with respect to u is given as:

$$-\frac{d\phi(n)}{n} = [\Psi(u_n) - \lambda] = -\phi'(n) - \lambda f(n) \quad (24)$$

Or alternatively: $-\phi(n) = \int_n^{\bar{n}} (f(n) - \Psi(n)) dn = \Psi(n) - F(n)$

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left(\frac{1+e}{e}\right) \cdot \left(\frac{\psi(n) - F(n)}{nf(n)}\right) \quad (25)$$

To write ABC formula we divide and multiply by $1 - F(n)$:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \underbrace{\left(\frac{1+e}{e}\right)}_{A(n)} \cdot \underbrace{\left(\frac{\psi(n) - F(n)}{1 - F(n)}\right)}_{B(n)} \cdot \underbrace{\left(\frac{1 - F(n)}{nf(n)}\right)}_{C(n)} \quad (26)$$

Where $A(n) = \frac{1+e}{e}$ is the elasticity and efficiency argument, $B(n) = \frac{\psi(n) - F(n)}{1 - F(n)}$ measures the desire for redistribution, $C(n) = \frac{1 - F(n)}{nf(n)}$ measures the thickness on the right tail of distribution. In the Rawlsian case $\Psi(n) = 1$ previous formula will converge to:

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left(\frac{1+e}{e}\right) \cdot \left(\frac{1 - F(n)}{nf(n)}\right) \quad (27)$$

2.4 Formal derivation of optimal non-linear tax rates with income effects

Utility function takes form $\tilde{u}(c, l) = u(c) - v(l)$ where $u'(c) > 0; u''(c) \leq 0$. Elasticity of labor supply is:

$$\frac{v'(l)}{u'(c)} = (1 - \tau'(w))n \quad (28)$$

The uncompensated response of labor supply is given as:

$$\frac{\partial l^u}{\partial (1 - \tau'(w))n} = \frac{u'(c) + l(1 - \tau'(w))nu''(c)}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \quad (29)$$

And uncompensated elasticity is implied:

$$\varepsilon^u = \frac{\frac{u'(c)}{l} + \frac{v'(l)^2}{u'(c)^2} u''(c)}{v''(l) - \frac{v'(l)^2}{u'(c)^2} u''(c)} \quad (30)$$

The response of labor to income changes is given as:

$$\frac{\partial l}{\partial y} = \frac{(1 - \tau'(w))nu''(c)}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \quad (31)$$

By using the Slutsky equation we have:

$$\begin{aligned} \frac{\partial l^c}{\partial(1 - \tau'(w))n} &= \frac{u'(c) + l(1 - \tau'(w))nu''(c)}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \\ &\quad - \frac{l(1 - \tau'(w))nu''(c)}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \\ &= \frac{u'(c)}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \end{aligned} \quad (32)$$

Henceforth :

$$\varepsilon^c = \frac{\frac{v'(l)}{l}}{v''(l) - (1 - \tau'(w))^2 n^2 u''(c)} \quad (33)$$

Here everything is as previous except now we cannot replace $c(n)$ in the resource constraint by using def. of indirect utility here we will define consumption as expenditure function $\tilde{c}(\tilde{u}(n), w(n), n)$. Previous resource constraint for this economy with no income effects was:

$$\int_{\underline{n}}^{\bar{n}} c(n)f(n)dn \geq \int_{\underline{n}}^{\bar{n}} w(n)f(n)dn - E \quad (34)$$

So this new function we will differentiate w.r.t. $\tilde{u}(n), w(n)$. Indirect utility is defined as :

$$\tilde{u}(n) = u(\tilde{c}(n)) - v\left(\frac{w^*(n)}{n}\right) \quad (35)$$

At optimum conditions that hold are:

$$d\tilde{u}(n) = u'(\tilde{c}(n))d\tilde{c}(n) \quad (36)$$

$$0 = u'(\tilde{c}(n))d\tilde{c}(n) - \frac{1}{n}v'\left(\frac{w^*(n)}{n}\right)dw^*(n)$$

If we rearrange we will get :

$$\begin{aligned} \frac{d\tilde{c}(n)}{d\tilde{u}(n)} &= \frac{1}{u'(\tilde{c}(n))} \\ \frac{d\tilde{c}(n)}{dw^*(n)} &= \frac{v'\left(\frac{w^*(n)}{n}\right)}{nu'(\tilde{c}(n))} \end{aligned} \quad (37)$$

Hamiltonian for this problem is given as:

$$\mathcal{H} = [G(u(n) + \lambda(w(n) - \tilde{c}(\tilde{u}(n), w(n), n))]f(n) + \phi(n)\frac{w(n)}{n^2}v'\left(\frac{w(n)}{n}\right) \quad (38)$$

FOC's are given a

$$\left[\begin{aligned} \frac{\partial \mathcal{H}}{\partial w(n)} &= \lambda \left[1 - \frac{v' \left(\frac{w(n)}{n} \right)}{nu' \left(c(n) \right)} \right] f(n) + \frac{\phi(n)}{n^2} \left[v' \left(\frac{w(n)}{n} \right) + \frac{w(n)}{n} v'' \left(\frac{w(n)}{n} \right) \right] = 0 \\ \frac{\partial \mathcal{H}}{\partial u(n)} &= \left[G'(u(m)) - \frac{\lambda}{u' c(m)} \right] f(n) d = -\phi'(n) \end{aligned} \right. \quad (39)$$

For the multiplier $\phi'(n)$ the equilibrium value is given as:

$$\phi(n) = \int_{\bar{n}}^{\bar{n}} \left[G'(u(m)) - \frac{\lambda}{u' c(m)} \right] f(m) dm \quad (40)$$

With the definition of the two elasticities we can write :

$$\left[v' \left(\frac{w(n)}{n} \right) + \frac{w(n)}{n} v'' \left(\frac{w(n)}{n} \right) \right] = v' \left(\frac{w(n)}{n} \right) \left[1 + \frac{w(n)}{n} \frac{v'' \left(\frac{w(n)}{n} \right)}{v' \left(\frac{w(n)}{n} \right)} \right] = v' \left(\frac{w(n)}{n} \right) \left(\frac{1 + \varepsilon^u}{\varepsilon^c} \right) \quad (41)$$

The optimal tax formula then will become :

$$\frac{\tau'(w_n)}{1 - \tau'(w_n)} = \left(\frac{1 + \varepsilon^u}{\varepsilon^c} \right) \cdot \left(\frac{\eta(n)}{nf(n)} \right); \quad \eta(n) = \frac{u'(c(n)) \phi(n)}{\lambda} \quad (42)$$

3. Golosov et al.(2016) framework: heterogenous preferences

This economy is described by $t + 1$ periods denoted by $t = 0, 1, \dots, t + 1$. Agents preferences are described by a time separable utility function over consumption c_t and labor l_t , and discount factor $\beta \in (0, 1)$, and expectation operator in period $t = 1, E_0$ and utility function $u: \mathbb{R}_+^2 \rightarrow \mathbb{R}$. Where ; $E_0 \sum_{t=0}^{t+1} \beta^t (c_t, l_t)$. In period $t = 0$ agent skills are θ_0 and the distribution of those skills is $F(\theta_0)$. In period $t + 1; t \geq 1$ skills follow Markov process $F_t(\theta_t | \theta_{t-1})$, where θ_{t-1} represents skill realization, and PDF is $f_t(\theta_t | \theta_{t-1})$. People retire at period \hat{t} in which case $F_t(0 | \theta) = 1 \forall t, \wedge \forall t \geq \hat{t}$.

Assumption 1. $\forall t \geq \hat{t}$, pdf is differentiable with $f'_t \equiv \frac{\partial f_t}{\partial \theta}$ and $f''_{2,t} \equiv \frac{\partial f_t}{\partial \theta_{t-1}}$, where

$\forall \theta_{t-1}$, where $\psi(\theta | \theta_{t-1}) = \frac{\theta_{t-1} \int_{\theta}^{\infty} \frac{\partial f_t}{\partial \theta_{t-1}}(x | \theta_{t-1}) dx}{\theta f_t(\theta | \theta_{t-1})}$, is bounded one sided $|\psi| \leq \infty \forall \theta$ and this limit is finite : $\lim_{\theta \rightarrow \infty} \frac{1 - F_t(\theta | \theta_{t-1})}{\theta f_t(\theta | \theta_{t-1})}$.

If previous process is AR(1) then ψ is equal to autocorrelation of the shock process $\forall \theta$. Skills are non-negative $\theta_t \in \Theta = \mathbb{R}^+, \forall t$. Agent types are also persistent like in Hellwig (2021) :

$$\Theta(\theta | \theta_{t-1}) = \frac{\frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_{t-1}}}{f_t(\theta | \theta_{t-1})} \quad (43)$$

Where $\frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_{t-1}} = -\rho \frac{\partial f_t(\theta_t | \theta_{t-1})}{\partial \theta_t}$, when $\rho = 0$, θ_t is i.i.d. and when $\rho = 1$ θ_t is random walk with persistence.

Assumption 2. Single crossing condition strictly decreasing: $\frac{u_{c\theta}}{u_c} - \frac{u_{y\theta}}{u_y} > 0$

Where \mathbf{y} are the earnings of the agent. Social planner evaluates welfare by Pareto weights $\alpha: \Theta \rightarrow \mathbb{R}_+$. Then α is normalized to $1 \int_0^\infty \alpha(\theta) dF_0(\theta) = 1$ Social welfare is given by:

$$SWF = \int_0^\infty \alpha(\theta) \left(E_0 \sum_{t=0}^{t+1} \beta^t (c_t, l_t) \right) dF_0(\theta) \quad (44)$$

Assumption 3. \mathbf{u} is continuous and twice differentiable in both arg. and satisfies $\mathbf{u}_c > 0; \mathbf{u}_l < 0; \mathbf{u}_{cc} \leq 0; \mathbf{u}_{ll} \leq 0$, and $\frac{\partial u_y(c, \frac{y}{\theta})}{\partial \theta} \frac{u_c(c, \frac{y}{\theta})}{u_c(c, \frac{y}{\theta})}$. There the optimal allocation solve mechanism design problem as in Golosov, Kocherlakota, Tsyvinski (2003):

$$\max_{c_t(\theta_t), y_t(\theta_t); \theta_t \in \Theta; t \in (0, \hat{t})} \int_0^\infty \alpha(\theta) \left(E_0 \left(\sum_{t=0}^{t+1} \beta^t \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) | \theta_t \right) \right) dF_0(\theta) \quad (45)$$

s.t. IC (incentive compatibility) constraint :

$$\begin{aligned} E_0 \left(\sum_{t=0}^{t+1} \beta^t u \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) | \theta_t \right) \\ \geq E_0 \left(\sum_{t=0}^{t+1} \beta^t u \left(c_t(\sigma^t(\theta_t)), \frac{y_t(\sigma^t(\theta_t))}{\theta_t} \right) | \theta_t \right), \forall \hat{\sigma} \\ \in \sum_{t=0}^t, \sigma^t \in \hat{\sigma}, \theta \in \Theta \end{aligned} \quad (46)$$

and feasibility constraint:

$$\int_0^\infty E_0 \left\{ \sum_{t=0}^{\hat{t}} R^{-t} c_t(\theta_t) | \theta_t \right\} dF_0(\theta) \leq \int_0^\infty E_0 \left\{ \sum_{t=0}^{\hat{t}} R^{-t} y_t(\theta_t) | \theta_t \right\} dF_0(\theta) \quad (47)$$

Now, $\omega(\tilde{\theta}, \theta)$ is state variable following Fernandes, Phelan (2000). Dynamic generalization of Envelope condition of Mirrlees (1971) and Milgrom and Segal (2002), Kapicka (2013), Williams (2011), Pavan, Segal and Toikka (2014). So now we have:

$$\begin{cases} u \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right) + \beta \omega_{t+1}(\theta_{t-1} | \theta_t) \geq u \left(c_t(\theta_{t-1}, \tilde{\theta}), \frac{y_t(\theta_{t-1}, \tilde{\theta})}{\theta_t} \right) + \beta \omega_{t+1}(\theta_{t-1}, \tilde{\theta} | \theta_t), \forall \tilde{\theta}, \theta \in \Theta, \forall t, \\ \omega_{t+1}(\theta_{t-1}, \tilde{\theta} | \theta_t) = E_t \left\{ \sum_{s=t+1}^{\hat{t}} \beta^{s-t-1} u \left(c_s(\tilde{\theta}_s), \frac{y_s(\tilde{\theta}_s)}{\theta_s} \right) | \theta_t \right\} \end{cases} \quad (48)$$

First and second derivative of utility are: $\mathbf{w}(\theta) = \omega(\theta | \theta)$ and $\mathbf{w}_2(\theta) = \omega_2(\theta | \theta)$. The value function takes form of:

$$\begin{cases} V_t(\hat{w}, \hat{w}_2, \underline{\theta}) = \min_{c, y, w, w_2} \int_0^\infty \left(c(\theta) - y(\theta) + \frac{1}{R} V_{t+1}(w(\theta), w_2(\theta), \theta) \right) f_t(\theta|\underline{\theta}) d\theta, s. t. \\ \dot{u}(\theta) = u_\theta \left(c(\theta), \frac{y(\theta)}{\theta} \right) + \beta w_2(\theta), \hat{w} = \int_0^\infty u(\theta) f_t(\theta|\underline{\theta}) d\theta, \hat{w}_2 = \int_0^\infty u(\theta) f_{2,t}(\theta|\underline{\theta}) d\theta \\ u(\theta) = u \left(c(\theta), \frac{y(\theta)}{\theta} \right) + \beta w(\theta) \end{cases} \quad (49)$$

Labor $(1 - \tau_t^y(\theta_t))$ and savings distortions $(1 - \tau_t^s(\theta_t))$ are defined as:

$$\begin{aligned} 1 - \tau_t^y(\theta_t) &\equiv \frac{-u_l \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}{\theta_t u_c \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}; \quad 1 - \tau_t^s(\theta_t) \\ &\equiv \frac{1}{\beta R} \frac{u_c \left(c_t(\theta_t), \frac{y_t(\theta_t)}{\theta_t} \right)}{E_t \left\{ u_c \left(c_{t+1}(\theta_{t+1}), \frac{y_{t+1}(\theta_{t+1})}{\theta_{t+1}} \right) \right\}} \end{aligned} \quad (50)$$

In the case of separable preferences, let $\varepsilon_t(\theta) \equiv \frac{u_{ll,t}(\theta) l_t(\theta)}{u_{l,t}(\theta)}$ is the inverse of Frisch elasticity of labor⁴, and $\sigma_t(\theta) \equiv -\frac{u_{cc,t}(\theta) c_t(\theta)}{u_{c,t}(\theta)}$ represents the intertemporal elasticity of substitution. Preferences are isoelastic: $u(c, l) = \frac{c^{1-\sigma}-1}{1-\sigma} - \frac{l^{1+\varepsilon}}{1+\varepsilon}$. Optimal tax rate here is:

$$\begin{aligned} \frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} &= (1 + \varepsilon) \frac{1 - F_0(\theta)}{\theta f_0(\theta)} \int_0^\infty \exp \left(\int_0^x \sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} d\tilde{x} \right) (1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)) \\ &+ \beta R \frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} \frac{A_t(\theta)}{A_{t-1}} \frac{u_{c,t}(\theta)}{u_{c,t-1}} \psi_t(\theta), \quad t > 0 \end{aligned} \quad (51)$$

In previous expression: $A_t(\theta) = (1 + \varepsilon)$; $B_t(\theta) = \frac{1 - F_0(\theta)}{\theta f_0(\theta)}$; $C_t(\theta) = \left(\int_0^x \sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} d\tilde{x} \right) (1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x))$; $D_t(\theta) = \frac{A_t(\theta) u_{c,t}(\theta)}{A_{t-1} u_{c,t-1}} \psi_t(\theta)$ where also: $\lambda_{1,t} = \int_0^\infty \frac{f_t(x)}{u_{c,t}(x)} dx$; $\bar{\alpha}_t(\theta) = \alpha(\theta)$ if $t = 0$; $\bar{\alpha}_t(\theta) = 1$ if $t > 0$. In a case when $\sigma = 0$ and $t = 0$ previous optimal labor tax becomes:

$$\frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} = (1 + \varepsilon) \frac{1 - F_0(\theta)}{\theta f_0(\theta)} \int_0^\infty (1 - \alpha(x)) \frac{f_0(x) dx}{1 - F_0(\theta)} \quad (52)$$

And if $t > 0$ then previous intratemporal components will be equal to zero ($A_t(\theta) = B_t(\theta) = C_t(\theta) = 0$) and optimal marginal tax rate will be equal to intertemporal component

$$\frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} = \beta R \rho \frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} \quad (53)$$

⁴The Frisch elasticity measures the relative change of working hours to 1% increase in real wage given the marginal utility of wealth λ . In the steady state benchmark model is given as:

$$\frac{\frac{dh}{h}}{dw/w} = \frac{1-h}{h} \left(\frac{1-\eta}{\eta} \theta - 1 \right)^{-1}$$

In the case of nonseparable preferences between labor and consumption almost all principles as in the case with separable preferences hold, $\gamma_t(\theta) \equiv \frac{u_{c,l,t}(\theta)l_t(\theta)}{u_{c,t}(\theta)}$ represents the degree of complementarity between consumption and labor, and the MPC from after-tax income on the right upper tail of the distribution $\bar{x} = \lim_{\theta \rightarrow \infty} \frac{c_t(\theta)}{(1-\tau_t^y(\theta))y_t(\theta)}$. Labor distortions are :

$$\begin{cases} A_t(\theta) = (1 + \varepsilon(\theta) - \gamma_t(\theta)) \\ C_t(\theta) = \int_{\theta}^{\infty} \exp\left(\int_{\theta}^x \left[\sigma_t(\tilde{x}) \frac{\dot{c}(\tilde{x})}{c_t(\tilde{x})} - \gamma_t(\tilde{x}) \frac{\dot{y}_t(x)}{y_t(\tilde{x})}\right] d\tilde{x}\right) (1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)) \frac{f_t(x) dx}{1 - F_t(\theta)} \\ D_t(\theta) = \frac{A_t(\theta) u_{c,t}(\theta) \theta_{t-1} \int_{\theta}^{\infty} \exp(-\int_{\theta}^x \gamma_t(\tilde{x}) \frac{d\tilde{x}}{\tilde{x}}) f_{2,t} * x dx}{A_{t-1} u_{c,t-1} \theta f_t(\theta)} \end{cases} \quad (54)$$

Now about the income and substitution effects, let $\varepsilon_t^u(\theta), \varepsilon_t^c(\theta)$ be the compensated and uncompensated elasticities and the income effect is $\eta_t(\theta) = \varepsilon_t^u(\theta) - \varepsilon_t^c(\theta)$, now we can rewrite labor distortions $A_t(\theta), C_t(\theta)$:

$$\begin{cases} A_t(\theta) = \frac{1 + \varepsilon_t^u(\theta)}{\varepsilon_t^c(\theta)} \\ C_t(\theta) = \int_{\theta}^{\infty} \exp(g_t; (x; \theta)) (1 - \lambda_{1,t} \bar{\alpha}_t(x) u_{c,t}(x)) \frac{f_t(x) dx}{1 - F_t(\theta)} \end{cases} \quad (55)$$

$g_t = \int_{\theta}^x \left\{ \frac{-\eta_t(\tilde{x}) \dot{y}_t}{\varepsilon_t^c(\tilde{x}) y_t} \tilde{x} - \sigma_t(\tilde{x}) \frac{(1-\tau_t^y(\tilde{x})) \dot{y}_t - \dot{c}_t}{c_t} \tilde{x} \right\} d\tilde{x}$, $A_t(\theta), C_t(\theta)$ are similar in their dependence on $\varepsilon_t^u(\theta), \varepsilon_t^c(\theta)$ as in Saez (2001). Preferences here are given as in Greenwood, Hercowitz., Huffman (1988): $u(c, l) = \frac{1}{1-\nu} \left(c - \frac{1}{1+\varepsilon} l^{1+\frac{1}{\varepsilon}} \right)$. Labor distortions here are given as:

$$\frac{\tau_t^y(\theta)}{1 - \tau_t^y(\theta_t)} \sim \left[a \frac{1}{1 + \frac{1}{\varepsilon}} - \varepsilon \frac{-\bar{\sigma}(1 - \bar{x})}{\bar{x}} \right]^{-1}; \theta \rightarrow \infty \quad (56)$$

3.1 Dynamic Mirrlees taxation: two period example

Government computes allocations subject to IC constraints and then implicit taxes are inferred from the resulting wedges between marginal rates of substitution (MRS) and marginal rates of transformation (MRT). Assumption of the model here are:

1. Workers are heterogenous plus random
2. The government does not observe individual skills, but it knows the distribution of skills *a priori*
3. There are no *a priori* restrictions on fiscal policy *e.g. lump-sum taxes are available -possible
4. Government can commit

5. Preferences are separable between consumption and leisure (government should be able to observe marginal utility of consumption)
6. There is no aggregate uncertainty

Without aggregate uncertainty perfect consumption insurance is possible (everybody gets the same consumption). However, if government cannot observe the skills. Assumptions here are:

1. \exists continuum of workers who live in 2 period and the maximization problem is :

$$\max E(u(c_1) + v(n_1) + \beta[u(c_2) + v(n_2)]) \quad (57)$$

2. Skills production is : $y = \theta \cdot n$

y represents observable output, θ are skills, n is effort/labor. Furthermore: θ_i is only observed by the agent i at the beginning of period, $\Pi_1(i)$ represents period 1 distribution of skills, and here $\Pi_2(j|i)$ is the conditional distribution of skills 2. Government maximization problem is given as:

$$\max_{c_1(i), c_2(i), y_1(i), y_2(i)} \sum_i \left\{ u(c_1, l_{ij}) + v\left(\frac{y_1(i)}{\theta_1(i)}\right) + \beta \sum_j \left[u(c_2, l_{ij}) + v\left(\frac{y_2(i)}{\theta_2(i)}\right) \right] \right\} \Pi_2(j|i) \Pi_1(i) \text{ s.t.}$$

- 1) Resource constraint :

$$\sum_i \left\{ [c_i, l_{ij} + \frac{1}{R} \sum_j c_2, l_{ij} \Pi_2(j|i)] \Pi_1(i) \right\} + G_1 + \frac{1}{R} G_2 \leq \sum_i \left[y_1(i) + \frac{1}{R} \sum_j y_2(i, j) \Pi_2(j|i) \right] \Pi_1(i) + R k_1 \quad (58)$$

- 2) Incentive compatibility constraints are given below:

$$u(c_1, l_{ij}) + v\left(\frac{y_1, l_{ij}}{\theta_1, l_{ij}}\right) + \beta \sum_i \left[u(c_2, l_{ij}) + v\left(\frac{y_2(i, j)}{\theta_2(i, j)}\right) \right] \Pi_2(j|i) \geq u\left(c_1, l(i_r) + v\left(\frac{y_1, l(i_r)}{\theta(i)}\right) + \beta \sum_j (u(c_2(i_r, j_r)) + v\left(\frac{y_2(i_r, j_r)}{\theta_2(i, j)}\right) \Pi_2(j|i)) \right) \quad (59)$$

3. Revelation principle: Government asks what your skill is and allocates consumption plus labor contingent on your answer. So now here we have i_r -which denotes first-period skills report (which depends on realized i) and j_r -which represents the 2nd period skills report (which depends on realized j). Characterization of optimum

Let's consider the following simple variational argument:

- 1) Fix a 1st period realization i and a hypothetical optimum $c_1^*(i), c_2^*(i)$.
- 2) Increase 2nd period utility uniformly across 2nd period realizations : $u(\tilde{c}_2(i, j; \Delta) \equiv u(c_2^*(i, j)) + \Delta$
- 3) Hold total utility constant by decreasing 1st period utility by $\beta \Delta$: $u(\tilde{c}_1(i, j, \Delta)) = u(c_1^*(i)) - \beta \Delta$
- 4) Note that this variation does not affect IC constraint and only the resource constraint is potentially affected.
- 5) Therefore, for $c_1^*(i); c_2^*(i)$ to be optimal, $\Delta = 0$ must minimize resources expended on the allocation.

One can express the resource costs of the perturbed allocation as follows:

$$\tilde{c}_1(i; \Delta) + R^{-1} \sum_j \tilde{c}_2(i, j, \Delta) \Pi(j|i) = u^{-1}(u(c_1(i)) - \beta \Delta) + R^{-1} \sum_j u^{-1}(u(c_2(i, j)) + \Delta) \Pi(j|i)$$

FOC evaluated at $\Delta = 0$ is as follows:

$$\frac{1}{u'(c_1(i))} = \frac{1}{\beta R} \sum_j \frac{1}{u'(c_2(i, j))} \Pi_2(j|i) \quad (60)$$

Previous equation is inverse Euler equation, $\frac{d}{dx} f^{-1}(x) = \frac{1}{f'(x)}$. We outline three cases as follows: 1. Skills observable $\Rightarrow u'(c_1) = \beta R u'(c_2)$; 2. Skills unobservable $\Rightarrow u'(c_1) = \beta R u'(c_2)$ but not random constant overtimes; 3. Skills observable plus random: $\frac{1}{u'(c_1)} = \frac{1}{\beta R} E \left[\frac{1}{u'(c_2)} \right] > \frac{1}{\beta R E[u'(c_2)]} \Rightarrow u'(c_1(i)) < \beta R E[u'(c_2(i, j))] \Rightarrow \tau_k > 0$. Previous is Jensen's inequality. Intuition here is that savings affects incentive to work, so government needs to discourage savings to prevent the flowing deviation by highly-skilled: 1) save more today; 2) work less tomorrow. Some other features of optimal fiscal policy are:

- 1) On average wealth taxes across individuals are zero ex-ante
- 2) However, they depend on future labor income-if labor income is below average, your capital tax is positive. If your labor income is above average, then your capital tax is negative.
- 3) So this tax or this fiscal policy might be regressive for incentive reasons

The fact that the capital tax varies in this regressive way makes investment risky and creates a positive risk premium⁵. This explains how $\tau_k > 0$

4. Arguments against capital taxation

The argument against taxing income from capital most often rests on two results one of them is Atkinson and Stiglitz (1976) demonstrated the following theorem known as Atkinson, Stiglitz theorem:

Theorem: Commodity taxes cannot increase social welfare if utility functions are weakly separable in consumption goods versus leisure and the substitutability of consumption goods is the same across individuals, i.e., $u_i(c_1, \dots, c_k, w) = u_i(v(c_1, \dots, c_k), w)$ with the substitutability function $v(c_1, \dots, c_k)$ homogenous across individuals. Laroque (2005) and Kaplow (2006) provided simple proof. Atkinson-Stiglitz (1976) employ nonlinear taxation in a static model in which individuals have utility defined over a number of consumer goods and labor. Hence, they prove that if labor is weakly separable from all the consumer goods, then the consumer goods should be taxed at the same rate. Consequently, only labor income need be taxed. Under weak separability, the government cannot achieve any distributional goals with differential taxation of the consumer goods that it cannot achieve with a tax on labor. The second result is due separately to Kenneth Judd (1985) and Christophe Chamley (1986).

⁵The risk premium is the rate of return on an investment over and above the risk-free or guaranteed rate of return. To calculate risk premium, investors must first calculate the estimated return and the risk-free rate of return.

Theorem: In a representative consumer, infinite horizon Ramsey model with linear taxes, the tax on income from capital should be zero in the long run.

The intuition here is that $(1+r) = MRT$ while $(1+r)(1-\tau) = \sum_{i=1}^n MRS$, and time period in that economy is $t = 1, \dots, T$ since $\frac{\sum_{i=1}^n MRS}{MRT} = 1, T \rightarrow \infty \rightarrow \frac{\sum_{i=1}^n MRS}{MRT} = 1$ i.e. $\left[\frac{1+r}{(1+r)(1-\tau)}\right]^T$ becomes large as $T \rightarrow \infty$.

We may dismiss the Atkinson/Stiglitz result on the grounds that labor is almost certainly not weakly separable, but the Judd/Chamley result is more difficult to ignore. But it is not clear why the relationship between consumption today and in the distant future should be so heavily distorted (Tresch (2014)).

5. Numerical solution of linear and nonlinear top-earners marginal tax rates

Here we are utilizing this equation : $\tau = \frac{1-\bar{g}}{1-\bar{g}+e}$. The first column of the table follows realistic scenario with elasticity of range $e = 0.25$, as in Saez et al., (2012) and Chetty, (2012), and Piketty, Saez (2013). The second column is with estimates in range $e = 0.5$ which is high range elasticity scenario and a third scenario is $e = 1$ which is well above estimates in the current literature.

Table 2 Linear optimal tax rates per Piketty, Saez (2013)

		$e = 0.25$		$e = 0.5$		$e = 1$	
		\bar{g}	τ	\bar{g}	τ	\bar{g}	τ
Rawlsian	revenue maximizing rate	0	0.8	0	0.67	0	0.50
Utilitarian	CRRA=1 $u_c = \frac{1}{c}$	0.61	0.61	0.54	0.48	0.44	0.36
Median voter	I	$\frac{w_{median}}{w_{average}}$ 0.7	0.55	0.7	0.38	0.7	0.23
Median voter	II	$\frac{w_{median}}{w_{average}}$ 0.75	0.50	0.75	0.33	0.75	0.20
very low tax country	10%	0.97	0.1	0.94	0.1	0.88	0.1
low tax country	35%	0.87	0.35	0.807	0.35	0.46	0.35
high tax country	50%	0.75	0.5	0.5	0.5	0	0.5

Source: Author's calculation

The first row of table 1 is Rawlsian criterion with $\bar{g} = 0$. The second row is utilitarian criterion with coefficient of risk aversion (CRRA) equal to one and social marginal welfare weights are proportional to $u_c = \frac{1}{c}$ where $c = (1-\tau)w + R$ where R is disposable income. Chetty (2006) proved and showed that $CRRA = 1$ is consistent with empirical labor supply behavior and that is a reasonable benchmark. First scenario with $e = 0.25$ shows that revenue maximizing tax rate is 80% which is higher even for the countries with highest marginal tax rate which is around 50%. The optimal tax rate under Utilitarian criterion is 61%. The optimal tax rate for median earner is 55% or 38% under

$e = 0.5$ and 36% under $e = 1$. In the examples with very low tax country one can see that a tax rate of 10% is optimal in a situation where $g = 0.97$ i.e. in a country with very low redistributive tastes. A tax rate of 50% would be optimal in a country with $\bar{g} = 0.75$. A high elasticity estimate $e = 0.5$ would generate tax rate of 67% above current rates in every country. The median voter tax rate in such a situation would be 38%, Utilitarian criterion generate tax rate of 48% in this situation. In the unrealistically high elasticity scenario $e = 1$ the revenue maximizing tax rate is 50% which is about the current rate in countries with highest $\frac{Tax}{GDP}$ ratios.

Example 1 with non-linear taxes

Here we are using this exact formula for calculation: $\bar{\tau} = \frac{1-\bar{g}}{1-\bar{g}+\bar{\epsilon}^u+\bar{\epsilon}^c(\alpha-1)}$, and we get table that consists of three global columns with supposed elasticities (uncompensated) $\epsilon_u \in (0, 0.2, 0.5)$ and supposed compensated elasticities $\epsilon_c \in (0.2, 0.5, 0.8)$.

Table 3 Non-linear income taxes under different uncompensated and compensated elasticities

	$\epsilon_u = 0$			$\epsilon_u = 0.2$			$\epsilon_u = 0.5$		
$\epsilon_c =$	0.2	0.5	0.8	0.2	0.5	0.8	0.2	0.5	0.8
$\bar{g} = 0$									
$a=1.5$	0.91	0.80	0.71	0.77	0.69	0.63	0.63	0.57	0.53
$a=2$	0.83	0.67	0.56	0.71	0.59	0.50	0.59	0.50	0.43
$a=2.5$	0.77	0.57	0.45	0.67	0.51	0.42	0.56	0.44	0.37
$\bar{g} = 0.25$									
$a=1.5$	0.88	0.75	0.65	0.71	0.63	0.56	0.56	0.50	0.45
$a=2$	0.79	0.60	0.48	0.65	0.52	0.46	0.52	0.43	0.37
$a=2.5$	0.71	0.50	0.38	0.60	0.44	0.35	0.48	0.38	0.31
$\bar{g} = 0.5$									
$a=1.5$	0.83	0.67	0.56	0.63	0.53	0.45	0.45	0.40	0.36
$a=2$	0.71	0.50	0.38	0.56	0.42	0.33	0.42	0.33	0.28
$a=2.5$	0.63	0.40	0.29	0.50	0.34	0.26	0.38	0.29	0.23
$\bar{g} = 0.75$									
$a=1.5$	0.71	0.50	0.38	0.45	0.36	0.29	0.29	0.25	0.22
$a=2$	0.56	0.33	0.24	0.38	0.26	0.20	0.26	0.20	0.16
$a=2.5$	0.45	0.25	0.17	0.33	0.21	0.15	0.24	0.17	0.13

Source: Author's calculation

Another example with non-linear U-shaped taxes as per Diamond (1998). The formulae that we are using here is: $\tau' = \frac{(\epsilon^{-1}+1)(1-g)}{[\alpha+(\epsilon^{-1}+1)(1-g)]}$

Table 3 Non-linear income tax rates as per Diamond (1998) and authors own calculations

	$g = 0$			$g = 0.25$			$g = 0.5$			$g = 0.975$		
$a=$	0.5	1.5	5	0.5	1.5	5	0.5	1.5	5	0.5	1.5	5
e												
0.2	0.9	0.8	0.5	0.9	0.7	0.4	0.8	0.6	0.3	0.2	0.09	0.0

	2		5	0	5	7	6	7	8	3		3
0.5	0.8	0.6	0.3	0.8	0.6	0.3	0.7	0.5	0.2	0.1		0.0
	6	7	8	2	0	1	5	0	3	3	0.05	1
0.7	0.8	0.6	0.3	0.7	0.5	0.2	0.7	0.4	0.1	0.1		0.0
5	2	1	2	8	4	6	0	4	9	0	0.03	1
1	0.8	0.5	0.2	0.7	0.5	0.2	0.6	0.4	0.1	0.0		0.0
	0	7	9	5	0	3	7	0	7	9	0.03	1
1.5	0.7	0.5	0.2	0.7	0.4	0.2	0.6	0.3	0.3	0.0		0.0
	7	3	5	1	5	0	3	6	2	8	0.03	1
2	0.7	0.5	0.2	0.6	0.4	0.1	0.6	0.3	0.1	0.0		0.0
	5	0	3	9	3	8	0	3	3	7	0.02	1

Source: Author's calculation

Form previous table one can see that highest non-linear income taxes are generated with high tastes for redistribution where $g = 0$ and Pareto shape parameter $\alpha = 0.5$ and with labor elasticity $e = 0.2$. Generated tax rates are $\tau \in (0.92, 0.88, 0.55)$ for Pareto shape parameters $\alpha \in (0.5, 1.5, 5)$. For the same elasticities and Pareto shape parameters but with very low almost non-existent redistributive tastes generated low tax rates are: $\tau \in (0.23, 0.09, 0.03)$ respectively. On a very high (unrealistically high) labor elasticities generated are tending to zero $\tau \rightarrow 0$. Next original Mirrlees (1971) paper main result has been simulated. First we start with two graphs presenting the original Mirrleesian taxation idea.

Figure 1 Mirrleesian taxation: consumption and earnings schedule

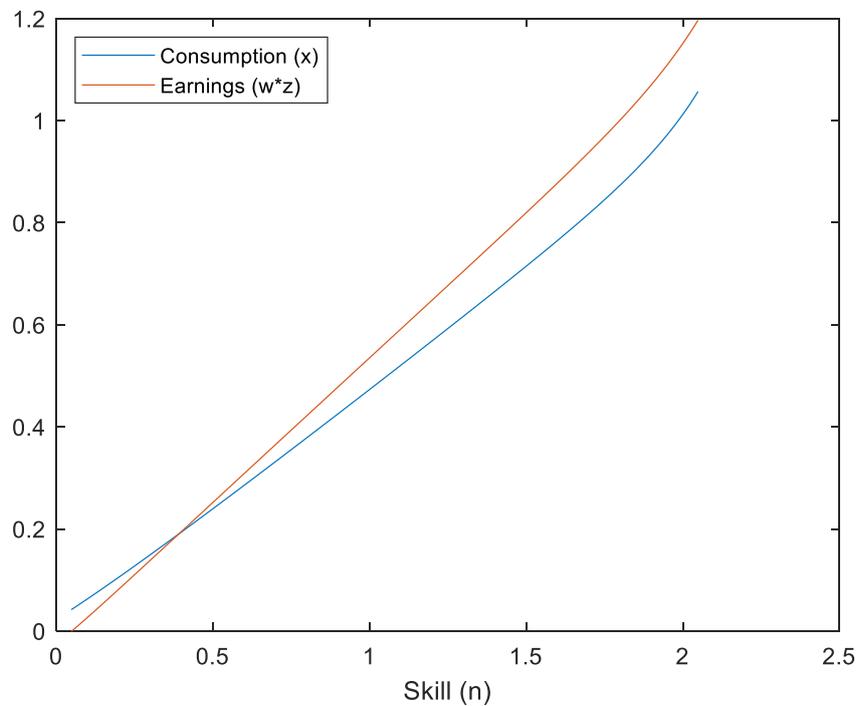
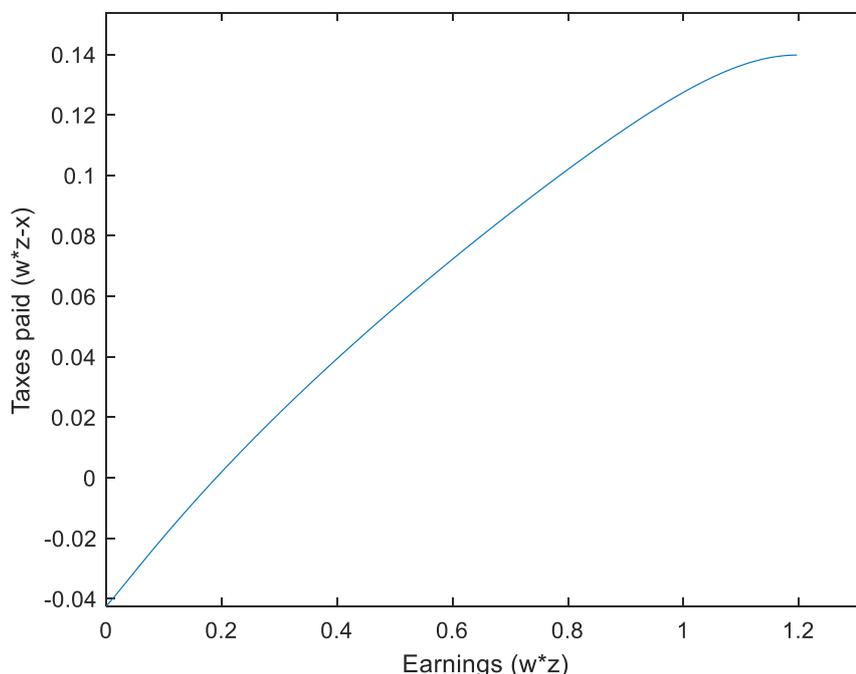


Figure 2 Mirrleesian taxation: taxes and earnings schedule



In previous two figures we can see the schedules of taxes and earnings as well as skills and earning in the Mirrlees taxation model. What do studies tell? The compensated elasticity of labor supply with respect to real wage ϵ_w^* has been estimate approximately to be 0.5 see Gruber, Saez (2002). Gruber, Saez (2002) estimate that for the US taxpayer with incomes above 100K\$ have elasticity around 0.57. And those <100K\$ have elasticity around 0.2 or even less. Next in table 4 FOC's for the Mirrlees model are presented.

Table 4 FOC's for the Mirrlees model

iteration	Func- count	f(x)	Norm step	of First-order optimality
0	3	1.37E-01		
1	6	9.01E-04	0.000224	0.00276
2	9	2.13E-04	2.97E-01	0.000677
3	12	5.02E-08	4.86E-01	9.93E-06
4	15	2.87E-14	6.74E-03	7.50E-09

In the next table 5 skills and consumption of agents that previously were depicted graphically are presented.

Table 5 skills, consumption and earnings for the Mirrlees model

F(n)- skills	x-cons.	y-income	x(1-y)	z- earnings
0	0.0424	0	0.0424	0
0.1	0.116	0.3894	0.0708	0.0869
0.5	0.18	0.4382	0.1011	0.1612
0.9	0.2888	0.4686	0.1535	0.2842

0.99 0.4315 0.4841 0.2226 0.4412

Table 6 depicts earning schedule, consumption, average tax rate and marginal tax rate correspondingly.

Table 6 average and marginal tax rates for Mirrlees model

z-earnings	x-consumption	average tax rate	marginal tax rate
0	0.0424	-Inf	0.2147
0.05	0.0847	-0.54	0.2336
0.1	0.1271	-0.1558	0.2223
0.2	0.214	0.0273	0.1993
0.3	0.3031	0.0817	0.1824
0.4	0.3937	0.1052	0.1698
0.5	0.4856	0.1171	0.1599

Optimal mirrleesian taxation is flat for a long range of top incomes >1 .

6. Conclusion

Optimal tax rates as this paper shows depend on redistributive tastes of the supposedly benevolent social planners. The marginal social welfare weight on a given individual measures the value that society puts on providing an additional dollar of consumption to this individual. As the numerical solutions in the non-linear optimal tax rates showed that high tax rates are obtained when there unrealistically low uncompensated and compensated elasticities, also the shape parameter of Pareto distribution must be lower. For high tax countries e.g. countries with highest tax burden around 50% the area that provides such high tax rates is where compensated elasticity is between 0.2 and 0.5 and uncompensated elasticity and unrealistically high compensated elasticity between 0.5 and 0.8 but medium redistributive tastes $\bar{g} = 0.5$. Or alternatively, if uncompensated elasticity is high $\varepsilon_u = 0.5$ than also the taste for redistribution must be high e.g. $\bar{g} \in (0, 0.25)$. For low tax countries the area where those taxes are provided is in high Pareto distribution parameter and very low taste for redistribution. These are very loose results and are conditioned by themselves and their combinations. In turn there is not straightforward solution to the optimal linear or non-linear labor income tax problem. Pareto efficient tax rates differ from those proposed by Mirrlees (1971). In the dynamic Mirrlees approach, when it comes to the result for capital, capital is taxed to provide more efficient labor supply incentives when there is imperfect information (private distributions of ability unknown to other parties) and as a part of optimal insurance scheme against stochastic earning abilities. Intuition here is that savings affects incentive to work, so government needs to discourage savings to prevent the flowing deviation by highly skilled: 1) save more today; 2) work less tomorrow. That was the second model we reviewed and from there some optimal fiscal policy features are: 1) On average wealth taxes across individuals are zero ex-ante ;2) However, they depend on future labor income-if labor income is below average, your capital tax is positive. If your labor

income is above average, then your capital tax is negative. 3) So, this tax or this fiscal policy might be regressive for incentive reasons. So, in general about dynamic Mirrlees approach it can be concluded that: this approach assumes that agents' abilities to earn income are heterogeneous, stochastic, and private information. Tax instruments ex ante are unrestricted. The model solves for the optimal allocations using dynamic mechanism design (subject only to incentive compatibility constraints) and then considers how to implement these allocations using decentralized tax systems, see also [Stantcheva \(2020\)](#). This story also has normative element into it. Namely we must not forget principles of horizontal and vertical equity according to neo-classical economics defined by [Feldstein \(1976\)](#) when we define tax systems and marginal tax rates. Feldstein's Horizontal Equity Principle: Two people with the same utility before tax must have the same utility after tax and Feldstein's Vertical Equity Principle (No Reversals): If person i has greater utility than another person j before tax, then person i must have greater utility than person j after tax. Feldstein's no-reversals principle has important efficiency implications in a second-best world of imperfect information in which the government might not know how well-off certain people are, and they may have powerful incentive to hide private information about themselves, if the tax laws permitted reversals of utility

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THE DETERMINANTS OF NON-PERFORMING LOANS:
THE CASE OF BALKAN COUNTRIES

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Abstract

The purpose of this research is to conduct an empirical analysis, covering the years 2000-2019, of the influence that macroeconomic factors and characteristics particular to banks have on the amount of bank loans that are considered to be non-performing in Balkan nations. The purpose of this research is to conduct an empirical analysis, covering the years 2000-2019, of the influence that macroeconomic factors and bank-specific variables have on the amount of bank non-performing loans in Balkan nations. It adds value by presenting data on macroeconomic factors that affect the quality of bank loans in all Balkan countries, as well as evaluating the effects of public finance variables on the ratio of non-performing loans. Has been investigated which factors assess Non Performing Loans (hereinafter NPL) on an aggregate basis by looking at both macro-variables (e.g. annual percentage growth rate of gross domestic product, public debt as percent of gross domestic product, unemployment) and micro-variables (e.g. loans to deposits ratio, return on assets, return on equity). Overall, our findings show clear links between NPL and a variety of macroeconomic (public debt, unemployment, annual percentage growth rate of gross domestic product) and bank-specific (capital adequacy ratio, previous year's rate of nonperforming loans, and return on equity) variables.

Key words: non-performing loans, Bank specific variables, Macroeconomic variables

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1. Introduction

The general and well-known truth is that the stability of the banking system is one of the key preconditions for all societies' economic development, as banks play a vital role in allocating capital from capital-sufficient agents to capital-deficient participants in society's economic existence. (Fukuda, & Dahalan, 2012).

The quality of loan portfolios was relatively stable before the financial crisis of the last decade of this century. The efficiency of their loan portfolios declined rapidly afterward. The deterioration in the quality of the loan portfolios of banks has caused the level of NPLs to rise. So, today, in both developing and emerging countries, this issue is almost equally evident. According to (Makri et al., 2014) only extreme NPL level growth should be achieved. That is expected to have a negative impact on global macroeconomic stability over the coming period.

In the Balkan region, the recent financial crisis has left a legacy of extremely high levels of NPLs. In 2008, at the beginning of the last decade, countries that had focused their economic growth on the booming banking sector (Sirtaine, S. and Skamnelos, I., 2007) found themselves facing a sudden halt in credit growth.

In recent decades, the "non-performing loans" (NPL) theme has drawn more attention. Several studies have analyzed bank failures and found that the quality of assets is an insolvency predictor (Demirgüç & Kunt, 1989). Before bankruptcy, banks also had a high degree of delinquent loans. Consequently, the large number of bad loans in the banking system typically results in a bank failure. One of the major causes of the problems of economic deflation is the NPL. In the financial sector, each impaired loan raises the risk of leading the business to difficulties and unprofitability.

For regulatory authorities seeking financial stability and successful bank management, the investigation of the factors underlying ex post credit risk is of considerable importance. In fact, it is assumed that Non-Performing Loans would proxy the ex-post credit risk (NPLs). Non-Performing Loans (NPLs) can be used to signal the start of a bank crisis, according to (Carmen et al., 2010), (Nkusu, 2011), (Louzis et al., 2012)

It is probable that the NPL would hamper economic growth and reduce economic productivity. Factors unique to the bank or macroeconomic conditions can result in shocks to the financial system. In general, research carried out in developed economies has confirmed that credit risk is influenced by macroeconomic conditions. Against this backdrop, the objective of this study is to assess the determinants of non-performing loans in the Balkan countries' commercial banks by looking at both bank-level data and macroeconomic indicators for the 2010-2019 period.

Considering the NPL as an endogenous variable, by evaluating the index through macroeconomic and bank specific variables, our research contributes to a growing literature. More specifically, for the period 2010-2019, we focused exclusively on the Balkan Zone, using aggregate data from 6 countries.

The aim of this research is to look at how bank-specific and macroeconomic variables influence non-performing loans in Balkan countries. It looks at the impact of return on asset, return on equity, capital adequacy ratio,

loans to total deposit, government debt, fiscal balance, GDP, inflation, and unemployment in Balkan countries.

The rest of the study is divided into the following sections: The sample, data, and methodology are all described in the third section. The empirical results are presented in section four, and the final section draws conclusions and addresses the consequences of the study's findings.

2. Literature Review

Two sets of factors have been listed in the previous literature that have caused NPLs to be distressed over time. The first group is internal factors, which are called bank-specific variables that can be easily managed by the efficient management of respective banks. External variables, such as macroeconomic conditions, are not explicitly controllable by bank management, but the percentage of risk can be minimized by taking properly prepared action.

As a result, problem loans are characterized as financial arrangements in which the borrower fails to pay the interest and/or payments on a regular basis. In other words, loans would be listed as nonperforming loans (NPLs) if they do not produce profits for the bank and hence no longer meet the terms of the loan agreement (Anjom et al., 2015).

Empirical studies of the factors that influence the amount of nonperforming loans (NPLs) show that a real increase in GDP typically translates into higher levels of income, increasing borrowers' financial ability. On the other hand, when the economy is performing poorly or in a recession, the level of nonperforming loans (NPL) may rise as a result of increased unemployment, putting borrowers in a difficult position to repay their debt. (Salas & Saurina, 2002), (Ranjan & Dhal, 2003), (Fofack, 2005).

Authors Keeton and Morris (1987) introduced one of the earliest empirical studies on NPLs investigating the causes of loan loss diversity on a sample of 2,500 banks in the USA. Their study showed that a substantial part of the variation in loan losses was due to differences in local economic conditions and to unusually poor performance in particular industries like agriculture and energy. On the other hand, only a minor part of the remaining variation in losses can be attributed to bank-level factors, such as banks deliberately taking greater risks and granting loans that they knew had a high probability of default.

According to some authors each factor has a different quantitative effect on NPLs. (Makri et al., 2014) used a dynamic panel regression approach on 17 eurozone countries from 2000 to 2008 in order to examine the determinants of NPLs in the Eurozone. The overall findings showed close links between NPL and a variety of macroeconomic variables (public debt, unemployment, annual percentage growth rate of gross domestic product).

For Central, Eastern, and South-Eastern European countries, several longitudinal studies examine the determinants of non-performing loans (Beck et al., 2013). Their results reinforce previous findings that the state of the real economy has a direct effect on the dynamics of non-performing loans in the countries studied.

Authors Anjom and Karim (2015) found a negative relationship between inflation, public debt as a percentage of GDP, return on equity, return on assets, total loan to total asset ratio, total loan to total deposit ratio, and a non-interest income ratio in another empirical study of Bangladesh's banking system NPLs.

In their study of US banks conducted between 1985 and 2010, some authors found that inflation and general loans have a significant effect on NPL (Saba et al., 2012). Researcher Zeng (2012) used a model based on optimal control theory to analyze NPL in Chinese cases between 1999 and 2000. He concluded that the equilibrium value of Chinese banks' nonperforming loans is determined by microeconomic factors (for example, internal management) in the context of macroeconomic conditions such as openness to the outside world and government policies.

(Messai, 2013) conducted an empirical analysis to classify the key macroeconomic and bank-specific factors that influence the non-performing loans ratio for a sample of 85 banks in Greece, Italy, and Spain from 2004 to 2008. The authors discovered a connection between the NPL ratio and a number of macroeconomic and financial variables, including GDP growth rate, unemployment rate, real interest rate, return on assets, and loans losses reserves.

2.1. Theoretical Framework

The following theoretical framework is built based on the above literature reviews and illustrates the relationship between dependent and independent variables.

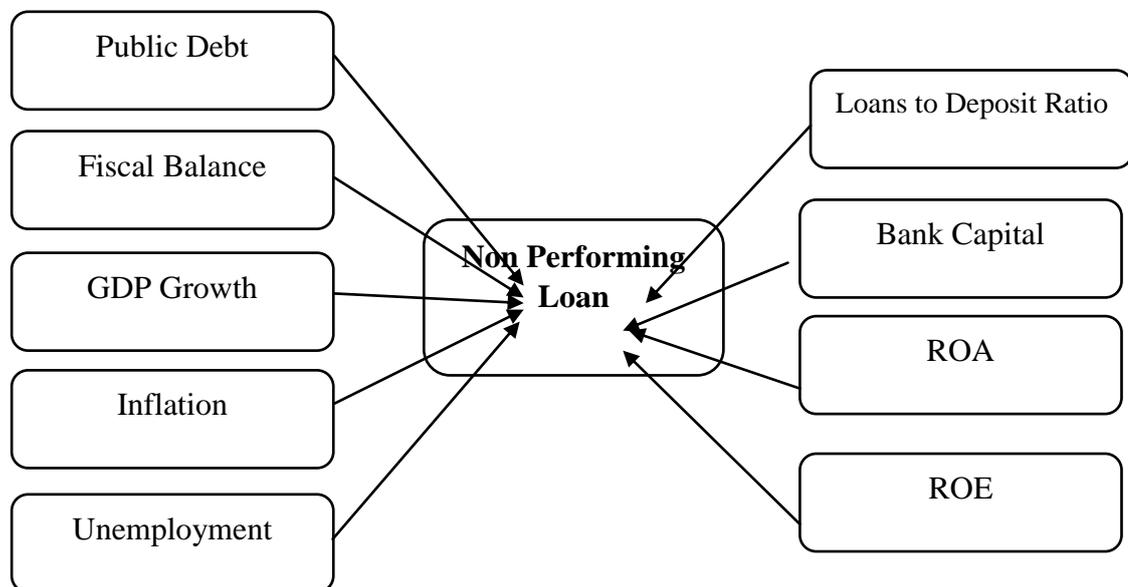


Figure 1: Bank Specific and Macroeconomic Variables affecting non-Performing Loans (obtained by the author)

3. Data and Methodology

3.1. Data

To discuss issues related to the variables affecting non-performing loans in Balkan countries, the analysis used a descriptive research design and a casual comparative research design. The research is based on secondary data gathered from the World Bank, as well as supervision reports and annual banks reports from respective countries. For this, a panel data study of 6 countries based on 109 observations was performed from 2000 to 2019.

Table 1. Observations per Country

Countries	Number of Observations
Albania	17
Bosnia & Herzegovina	20
Kosovo	18
Montenegro	16
North Macedonia	20
Serbia	18
Total	109

Source: Compiled by the author from IMF, World Bank and Eurostat.

3.2. Methodology

Using panel data for Albania, Bosnia and Herzegovina, Kosova, Macedonia, North Macedonia, and Serbia from 2000 to 2019, we examine the bank-specific and macroeconomic factors affecting NPLs in transition economies.

To explore the impact of bank-specific and macroeconomic factors of non-performing loans in Balkan countries, this study uses the regression equation from (Abduh et al., 2017) and Pooled Ordinary Least Square (OLS). Pooled OLS method is simply, OLS estimations applied on a panel data. Therefore, we are using two models to be estimated as under:

Model 1. General model

This is a normal regression model that can be used to assess the effect of bank-specific characteristics on NPL. Note that i corresponds to the examined country of the sample and t to the year.

$$NPL = \beta_0 + \beta_1 CAP_{it} + \beta_2 LDR_{it} + \beta_3 ROA_{it} + \beta_4 ROE_{it} + \varepsilon_{it} \quad (1)$$

Model 2. The model with additional variables

In addition to the existing model, we added five more variables including macroeconomic Government Debt, Fiscal Balance, GDP Growth, Inflation and Unemployment to check the robustness of the model.

$$NPL = \beta_0 + \beta_1 CAP_{it} + \beta_2 LDR_{it} + \beta_3 ROA_{it} + \beta_4 ROE_{it} + \beta_5 DEBT_{it} + \beta_6 FISC_{it} + \beta_7 GDP_{it} + \beta_8 INFL_{it} + \beta_9 UNEMP_{it} \quad (2)$$

The independent variables consist of bank-specific and macroeconomic variables as under:

Table 2. Presentation of Variables

	Symbol	Explanation	Expected Sign
Bank Specific Variables	NPL	Aggregate non-performing loans to total gross loans	(+)
	CAP	Bank capital and reserves to total assets	(-)/(+)
	LDR	Loans to deposit ratio	(+)
	ROA	Return on assets	(-)
	ROE	Return on equity	(-)
Macroeconomic Variables	DEBT	Public debt as % of GDP	(+)
	FISCAL	Government budget deficit or surplus as % of GDP	(-)
	GDP	Annual percentage growth rate of GDP	(-)
	INFL	Annual average inflation rate	(+)/(+)
	UNEMP	% of unemployment	(+)

Source: Compiled by the author

3.3. Variables Analyzed

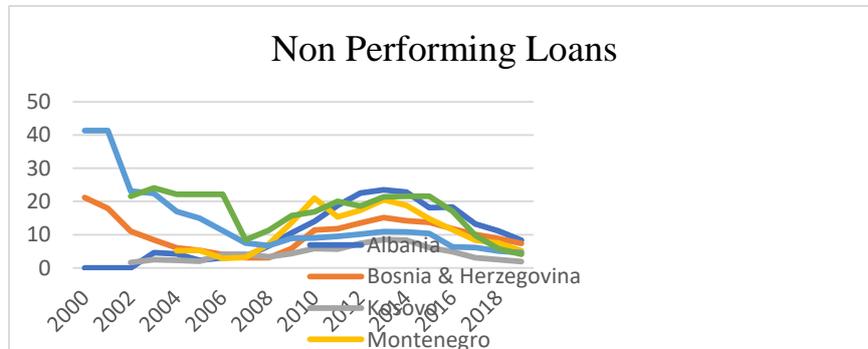
Many non-performing loan ratios have been used by researchers in the banking literature to measure non-performing loans. We used the following variables based on the literature review:

Dependent Variable

Non-Performing Loans

When borrowers fail to repay principal and/or interest within the agreed-upon time period, which is typically three months or 90 days, the loan is deemed non-performing. The NPL is measured in this analysis by the ratio of non-performing loans to total loans, which has been done in previous studies in a similar way (Kjosevski & Petkovski, 2017 and Mohaddes et al., 2017). The impact of macroeconomic conditions on credit risk is well known and verified in the literature. Numerous studies have looked into the relationship between

macroeconomic factors like GDP, inflation, interest rates, and unemployment, as well as loan efficiency (Farhan et al., 2012).



Graphic 1 – NPL’s Ratio during periods 2010-2019 (CBK 2019)

Independent Variables

- Loans to Deposit Ratio
- Bank Capital and Reserves to total assets
- Return of Assets – ROA
- Return of Equity – ROE
- Public Debt
- Fiscal – Deficit or Surplus as % of GDP
- GDP Growth
- Inflation
- Unemployment

4. Empirical results

4.1. Descriptive Results

Table 3 displays the descriptive statistics for the variables used in this empirical report. NPL ranges from 1.6 to 41.3%. Variables LDR present a minimum of 15.34 and a maximum of 655.47, while Bank_CAP ranges from 4.7 to 23.6. As far as profitability ratios are concerned, it has to be mentioned that ROA records a relatively high disparity between countries, which presents minimum by -4.68 to maximum 5.54. Also, ROE ranges from a minimum -41.22 to a maximum value 29.1.

Variable DEBT, presents a very high disparity, since its minimum value stands at 5.27 and maximum at 76.5. Variable FISCAL extends from -114.6 to 90.5 denoting those countries present either deficit or surplus for negative and positive signs, respectively. Similarly, GDP shows positive and negative values, -5.8, respectively 9.03 indicating that, over the period 2000-20, some Eurozone countries marked negative growth. Furthermore, INFL demonstrates a minimum of -2.41 and a maximum of 19.5. Finally, variable UNEMP ranges from 12.33 to 55.

Table 3 Descriptive Statistics of Variables in Equations 1 & 2

Variable	Obs	Mean	Std. Dev.	Min	Max
NPL	109	11.437	7.746	1.6	41.3
LDR	109	97.964	63.519	15.34	655.47
Bank Capital	109	12.936	4.563	4.7	23.6
ROA	109	.968	1.26	-4.68	5.54
ROE	109	8.387	9.847	-41.22	29.1
DEBT	109	41.661	20.207	5.27	76.5
Fiscal Balance	109	.152	20.407	-114.6	90.5
GDP Growth	109	3.441	2.563	-5.8	9.03
Inflation	109	3.231	3.725	-2.41	19.5
UNEMP	109	24.767	9.308	12.33	55

Source: Results obtained by the author

4.2. Estimation Results

4.2.1. Correlation Matrix

After indicating the descriptive statistics, the correlation coefficients for the chosen variables were computed, and the results are shown in Table 4.

Table 4. Correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) NPL	1.00								
(2) LDR	0.24	1.00							
(3) Bank_Capital	-0.41	0.35	1.00						
(4) ROA	-0.47	-0.25	-0.05	1.00					
(5) ROE	-0.57	-0.31	-0.20	0.85	1.00				
(6) DEBT	0.44	-0.03	-0.00	-0.36	-0.38	1.00			
(7) Fiscal_Balance	-0.12	-0.04	0.02	0.09	0.08	-0.19	1.00		
(8) GDP_Growth	-0.32	0.00	-0.05	0.20	0.27	-0.09	0.03	1.00	
(9) Inflation	0.31	0.32	0.42	-0.23	-0.30	0.09	0.02	0.24	1.00

				0	8					
(10)	-	-	-	0.25	0.26	-	0.31	0.05	-	1.00
UNEMP	0.24	0.01	0.01	6	7	0.79	7	0	0.17	0
	7	9	3			8			4	

Source: Results obtained by the author

Table 4 shows that all the correlations can be considered as low, but none of them is significant. In the ratio between NPL and LDR we see that we have a positive relationship of 0.243, which means that with the increase of the values of one variable, we have an increase of the values of the other variable. Also, we have almost the same ratio with Bank_Capital, where there is a negative relationship of -0.411, so with the increase of NPL, the bank's capital decreases. NPL shares a negative correlation between ROA and ROE, of -0.472, respectively -0.574, a ratio which shows that with the increase of NPL there are losses which are reflected in Assets and Equity, which makes the coefficients of these two ratios decrease. While, in terms of macroeconomic factors, we notice that we have a negative relationship between NPL and Fiscal_Balance, GDP_Growth and Unemployment, which is consistent with the theoretical part that the growth of NPL also comes as a decrease of these macroeconomic factors. And finally, we have Debt (Public Debt) and Inflation with which it has a positive relationship.

4.2.2. Regression analysis

Table 5 shows the regression of bank-specific and macroeconomic factors on non-performing loans.

Table 5: Regression Results of Equations 1 & 2

	(1)	(2)	(3)	(4)	(5)	(6)
	NPL	NPL	NPL	NPL	NPL	NPL
LDR	-.005 (.01)	.001 (.01)	0 (.01)	.004 (.009)	.002 (.009)	.004 (.009)
Bank_Capital	.565*** (.14)	.579*** (.133)	.582*** (.133)	.57*** (.129)	.495*** (.138)	.473*** (.133)
ROA	-.429 (.914)	-.215 (.867)	-.205 (.869)	-.314 (.842)	-.309 (.837)	-.269 (.804)
ROE	- .357*** (.12)	-.282**	-.283**	-.221*	-.193*	-.166
DEBT		.109*** (.03)	.105*** (.03)	.109*** (.03)	.107*** (.029)	.215*** (.045)
Fiscal_Balance			-.019 (.027)	-.017 (.027)	-.019 (.026)	-.042 (.027)
GDP_Growth				-.611*** (.217)	-.746*** (.234)	-.79*** (.225)
Inflation					.265 (.177)	.372** (.174)
UNEMP						.297***

						(.097)
_cons	8.009** *	1.891	2.049	3.453	4.037	-8.203*
	(2.057)	(2.573)	(2.59)	(2.555)	(2.569)	(4.691)
Observations	109	109	109	109	109	109
R-squared	.419	.485	.488	.525	.535	.576

Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Source: Results obtained by the author

The coefficients of the independent variables, as well as the corresponding p-values, are shown. The coefficients of the regressors were examined, and statistically significant correlations with nonperforming loans were discovered.

In particular, bank specific variables LDR (Model 1), ROA (Models 1,2,3,4,5,6) and ROE (Models 1,2,3,4,5,6), are negatively correlated. In addition, macroeconomic variables DEBT (Models 2,3,4,5 & 6) and UNEMP (Model 6) were also found positively and significantly related to non-performing loans. On the contrary, variable GDP (Model 4,5,6) denoted a significant negative relationship. Contrary to our expectations, ROA & Bank Capital and FISCAL Balance & INFLATION didn't show any significant impact on NPL ratio to all model specifications.

Conclusions

As independent variable with LDR, where one of the most relevant causes of nonperforming loans is excessive loan disbursement in relation to asset and deposit. This conduct by banks reflects the banks' aggressive lending practices. Increased bank exposure to loans without proper borrowers' screening leads to an increase in non-performing loans.

As independent variable, Bank Capital has a positive correlation with NPL which suggest that the higher the bank's capital, the management is tempted to give more loans, in many cases without properly analyzing the banking conditions, which leads to the growth of NPL.

The regulatory authorities in charge of the banking system in the Balkan Zone should focus much of their efforts on improving bank management performance. Following that, the authorities should strengthen the monitoring systems that will help to mitigate credit risk by ensuring that laws and regulations are followed.

At the same time, public debt, GDP, and unemployment appear to be three additional macroeconomic factors that influence the NPL index, revealing that the state of the economy in the Balkan Zone is inextricably related to loan portfolio quality.

Thus, public debt has a positive correlation with NPL, since budgetary consolidation entails either lower budgetary expenses or higher budgetary revenues, it's understandable that such steps could result in lower wages, borrowers' ability to repay debts, and a higher non-performing bank loan ratio.

The annual real GDP growth rate (GDP) has a significant effect on the rate of non-performing loans, according to our findings. The variable's coefficients are statistically significant and negative, which matches our expectations.

Unemployment (UNEMP) has a major effect on non-performing loans, much as the GDP growth rate does. The coefficients are statistically significant and positive, as expected, and in line with the findings of (Klein, 2013), (Castro, 2013). As previously stated, the study looked at the years 2000 to 2019, before and after the start of the prolonged recession. Because data for previous periods for all Balkan Zone countries was not available, we were unable to include more data in our study.

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ECONOMIC AND FINANCIAL ANALYSIS OF THE
MANAGEMENT OF PUBLIC HEALTH INSTITUTIONS IN
THE REPUBLIC OF NORTH MACEDONIA

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Abstract

This research paper analyses the management of the financial resources of the Public Health Institutions. Recognition of cost divisions makes it easier to analyze their basic characteristics and how they behave in the work process of Public Health Institutions.

Management is an integral process that involves planning health policies, formulating health programs, providing funding for priority programs, monitoring, controlling and evaluating. Every manager's decision is based on a preliminary analysis of its attitudes to costs, respectively how the decision affects them and the reasonableness of the decision.

Therefore, it is necessary to make financial planning and control over expenditures, respectively analysis of the management or leadership of Public Health Institutions.

Financial control as an important parameter of public financial control performs financial and budgetary controls in Public Health Institutions. The reason of the controls is to verify the accuracy of the documents related to financial activities, incomes, obligations and expenses.

In this way, the efficiency at work and the consumption of financial resources dedicated to healthcare system are controlled. As a result of this, it is possible to offer better quality health services.

Key words: Healthcare, Healthcare Management, Health Insurance Fund, Financial Analysis, Public Health Institutions, and others.

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1. Introduction

Healthy people are a prerequisite for a healthy and developed society. Over the recent years, we have been witnesses of many reforms that have been carried out in the health system, in terms of their financing and management.

Financing the health system represents an important issue and it is a matter of concern for many countries and it depends on the economic-social and political conditions. According to the Constitution of the Republic of North Macedonia, every citizen is guaranteed the right to health protection. The health system in our country is founded on the principle of compulsory health insurance where the administration of funds is implemented by the Health Insurance Fund.

Management is a continuous process focused on meeting the objectives of the organization as efficiently as possible. Management includes all aspects related to: the commitment of material, financial and human resources; with the organizational structure; with its development; by setting objectives and choosing criteria for evaluating achievements in any type of health organization.

Good management means responsibility and coordination of all levels of administration and non-governmental organizations as well as the involvement of well-informed media. Health management works to improve the health status of the population and not only to manage the health institution in economic and financial terms.

The subject of research in this research paper is mainly about the public health institutions in the Republic of North Macedonia and their management. It mainly includes the management of financial resources of public health institutions.

Knowing the breakdown of expenses makes it easier to analyze their basic characteristics and how they influence the work process of public health institutions. Expenses are of great importance in the decision-making process by administrators of institutions. Each decision of the manager is based on the preliminary analysis of its relationship with the expenses, namely with the way the decision affects them and with the justification of the decision. This is precisely why there is a need for planning and controlling expenses.

Planning means setting up goals, while control ensures their achievement. If the institution has properly defined objectives and if it adheres to the principles for their construction, the control results will confirm the successful operation.

Financial control as an important parameter of public financial control performs financial and budgetary supervision in public health institutions. The purpose of the controls is to verify the accuracy of all documents related to financial activities, the realization of requests, income, obligations and expenses, as well as the assessment of their compliance with laws, by-laws and internal acts. With decisions and agreements, before and after their execution.

In this way, the efficiency at work, the consumption of funds dedicated to public health institutions and the way of researching the health services performed are controlled. The control ensures the forwarding of information from the Health Insurance Fund to public health institutions and vice versa. Through financial control, the educational function is realized through which public health

institutions gain knowledge to avoid irregularities in the part of financial activities.

Given the importance of the quality of health services, it is necessary for public health institutions to be managed in order to adhere to basic principles such as: equality, quality, honesty, responsibility, inclusion and non-discrimination, sustainable financing, cost-effective financing, co-financing and others.

The objectives of this research are:

- Clarification of health financing in the Republic of North Macedonia;
- Analysis of the management of sources of income in public health institutions, having as a priority the establishment of efficient and quality services;
- To determine the forms and methods of financing, which in order to increase the economy in the workplace of health in the Republic of Northern Macedonia;
- The impact of the financial controls of the Health Insurance Fund on operation of Public Health Institutions in the Republic of North Macedonia.

2. Theoretical background for Healthcare System

According to the World Health Organization, health represents: "A state of complete physical, mental and social well-being and not merely the absence of disease or physical infirmity" (Andrija Stampar, first President of the General Assembly of the World Health Organization, 1946). According to the WHO, reaching the highest level in health is one of the basic human rights, regardless of race, religious and political affiliation, as well as without economic and social differences. Health can be elaborated from two aspects, namely: as physical health and as mental health, respectively spiritual. Physical health is about the health of the body and it depends on the normal functioning of organs and systems, physical activity, nutrition and rest. While mental health means emotional or cognitive well-being as well as the absence of spiritual disorders.

According to the Law on Health Protection of the Republic of North Macedonia, health protection includes a system of social and individual measures, activities and steps for maintaining and promoting health, prevention, early detection and treatment of diseases, injuries and other health disorders. Caused by the impact of the environment where we live and work, early detection, efficient treatment, as well as health care and rehabilitation. The health system in the Republic of North Macedonia is organized in three levels, namely: primary, secondary and tertiary level.

Contemporary public health is a leading concept that contains a multitude of ideas, experiences and knowledge about health inequality in developed and underdeveloped countries in universal health protection, related to how to deal with diseases, reducing the consequences of disease and with the improvement of the health condition of the population. Modern public health deals with activities such as: analysis and planning, preparations to act in emergency situations as well as the creation of policies and strategies for improving public health.

The functions of public health represents the overall activities through which the main goal of public health is achieved, which is the progress of the health of the population.

The main functions of public health in the Republic of North Macedonia are:

- Monitoring and evaluation of the health and well-being of the population;
- Identification, prediction, examination and reduction of health problems and health risks in the community;
- Health protection, assessment of needs and appropriate activities for ensuring health protection;
- Disease prevention through measures taken by primary and secondary medicine;
- Advancement of health and health education;
- Proposals for the adoption and implementation of laws and other legal provisions through which health protection is ensured;
- Ensuring a competent multidisciplinary framework in public health;
- Support and implementation of research related to health;
- Development and planning of health policies;
- Preparation and administration of extraordinary public health situations, including prevention, reduction or mitigation of consequences;
- Ensuring cross-sector partnerships and community participation to improve health and reduce inequality.

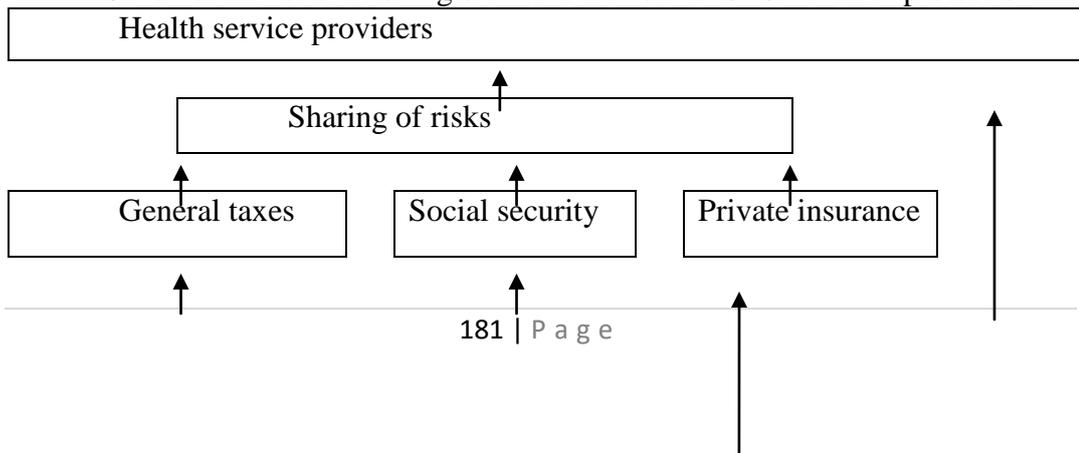
2.1 *Healthcare financing process*

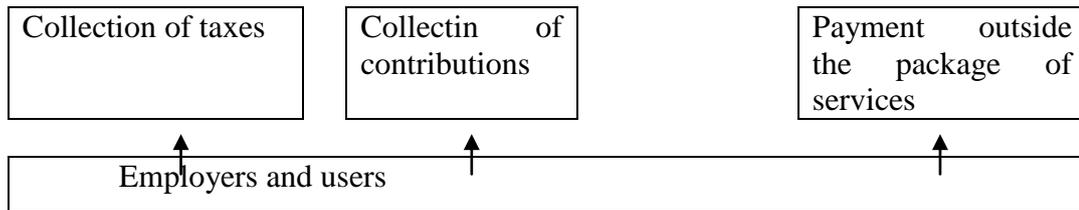
Financing represents a rising incomes to pay for services and goods. Financing as a function of the public health system means the mobilization, accumulation and allocation of funds to cover the health needs of people, individuals or groups in the health system.

Every country is faced with the need for health financing regardless of whether it is for the entire population or for its most vulnerable stratum, which includes the poor and the elderly. As the basis of general inclusion, equal access, solidarity, sustainability and optimal quality of health services, by 2010 in all countries, members of the World Health Organization, a stable financing had to be established. This financing must respond to the needs of the population, while the resources must be oriented towards financial measures based on scientific facts in order to enable the progress and protection of health.

Based on the fourth study of the Center for research and creation entitled Reforms in the health system in the Republic of Northern Macedonia (2011), the functioning of financial mechanisms in health protection can be (Scheme 1):

Scheme 1. The functioning of financial mechanisms in health protection





Source: Center for research and creation entitled Reforms in the health system in the Republic of Macedonia (2011)

The health insurance system represents a mechanism for the collection of financial contributions to the fund, with the help of which funds are collected to cover the costs of health services. The Health Insurance Fund is the intermediary institution that provides health and medical services to insured members. The fund pays funds to providers of medical services on behalf of the insured person who uses the services. By type, health insurance can be: mandatory health insurance and voluntary health insurance.

3. Data and Methodology

3.1 Empirical Strategy

During the preparation of the scientific research, the subject of the research was examined from both the theoretical and practical aspects. The processing of the theoretical part of the work is based on the latest knowledge and contemporary literature of the country and abroad, as well as scientific publications in the field of health institutions management.

The basic data of this paper was collected through the questionnaire. The questionnaire consists of 9 closed questions. The collected data was processed in the Microsoft Excel program. The survey questionnaires were sent to public health institutions. As far as respondents are concerned, 60 managers participated to this survey of public health institutions and 100 health workers.

The results obtained from the survey have been processed and summarized and then presented by charts (tables) and graphs. During the development and the presentation of the questions uses the χ^2 -test and the coefficient of contingency, in order to determine the connection between the variables, which are from interest of this research. The chi-square test (χ^2 -test) is one of the most practical and well-known non-parametric tests based on contingency. It is used in cases when data obtained from empirical research are expressed in frequencies or when they can be reduced to frequencies. The test is used when differences between the group variance of the subjects should be examined and the theoretical frequencies.

$$\chi^2 = \sum \frac{(f_i - f_0)^2}{f_0} \quad (1)$$

where:

f_i = studied frequencies obtained by empirical research or experimentation;

f_0 = expected or theoretical frequencies (frequencies that are expected at certain hypothesis).

The investigated frequencies are obtained from the conducted empirical research, while, on the other hand, the expected frequencies are obtained so that

the sum of the row is multiplied by the sum of the column and the resulting result is divided by the total sum of frequencies. The obtained value for the test is compared with the theoretical value the distribution test, which was formulated by K. Pearson. He counted them and created the tables of limit values of the test for the corresponding number of degrees of freedom and corresponding probability, i.e. Significance threshold. Threshold of significance refers to the allowable error or risk and is commonly used level of probability $p=0.05$ and $p=0.01$. This paper uses a probability level of 0.05, i.e. 5%. When the frequencies are arranged in rows and columns, the degrees of freedom (n) are calculated as follows:

$$n = (k - 1)(r - 1) \tag{2}$$

where:

n = degrees of freedom;

k = number of columns;

r = number of rows.

In this empirical research, the frequencies are divided into two columns and three rows, resulting in 2 degrees of freedom. The table value on the χ^2 -test, for 2 degrees of freedom and a significance threshold of 0.05, it is 5.991. When the calculated value of the χ^2 -test is greater than the limit value in the table, which in our case has a value of 5.991, then we come to the conclusion that the statements of managers and employees different. Conversely, when the alculated value of the χ^2 -test is lower than the table value value, in which case the statements of managers and employees are similar.

As can be observed, the χ^2 -test determines the probability of association between two variables, not the degree of association. Such connectivity is measured by the contingency coefficient (C):

$$C = \sqrt{\frac{\chi^2}{N + \chi^2}} \tag{3}$$

where:

χ^2 = calculated value for χ^2 ;

N = total number of frequencies.

The contingency coefficient can have a value from 0 to 1. When this coefficient is closer to 1 interdependent modality of the studied variables is stronger, and when the calculated coefficient is closer to 0, then the interdependence is weak.

3.2. Empirical Results

The processed results obtained from the questionnaire are presented in Table 1.

Tab. 1 A summary presentation of the data obtain from the questionnaires:

Questions	Answers			
	Managers		Employed	
	value	%	value	%

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Digitalized Environment (EBSiDE 2022)

1. How do you rate the health system in Republic of Northern Macedonia?	Good	43	72%	42	42%
	Not good	10	16%	30	30%
	Very good	7	12%	28	28%
	Total	60	100%	100	100%
$\chi^2=18,556$					
2. Do you think that budgets from the Health Insurance are distributed in a transparent way to public health institutions?	Yes	52	87%	70	70%
	No	8	13%	12	12%
	No answer	0	0%	18	18%
	Total	60	100%	100	100%
$\chi^2=14,647$					
3. Does your health institution use the funding source in a correct and transparent way?	Yes	60	100%	84	84%
	No	0	0%	2	2%
	No answer	0	0%	14	14%
	Total	60	100%	100	100%
$\chi^2=17,391$					
4. Are the managers and the leaders of your healthcare institution trying to reduce unproductive costs?	Yes	56	93%	68	68%
	No	0	0%	8	8%
	Partly yes	4	7%	24	24%
	Total	60	100%	100	100%
$\chi^2=21,205$					
5. Have you made an annual project plan or business plan in order to increase your own income from other sources (donations, grants, etc.)?	Yes	48	80%	64	64%
	No	6	10%	12	12%
	Partly yes	6	10%	24	24%
	Total	60	100%	100	100%
$\chi^2=7,724$					
6. Do you think	Yes	47	78%	72	72%

that the Ministry of Health is recognizing the current situation in the health care system and its advancement?	No	0	0%	12	12%
	Partly yes	13	22%	16	16%
	Total	60	100%	100	100%
$\chi^2=13,187$					
7.Do you think that the institution where you are working offers quality and efficient services	Yes	54	90%	74	74%
	No	0	0%	12	12%
	Partly yes	6	10%	14	14%
	Total	60	100%	100	100%
$\chi^2=14,228$					
8.In your opinion, in what way do financial controls by the HIF affect the management of PHI in RNM	Positively	56	87%	88	88%
	Negatively	1	3%	4	4%
	No answer	3	10%	8	8%
	Total	60	100%	100	100%
$\chi^2=0,371$					
9.How much do the leaders of your Institution implement the recommendations of the controllers of the HIF?	Yes	54	90%	84	84%
	No	0	0%	8	8%
	Partly yes	6	10%	8	8%
	Total	60	100%	100	100%
$\chi^2=8,429$					

*HIF-Health Insurance Fund, PHI-Public Health Institutions,RNM-Republic of Northern Macedonia

After processing the data for the two groups of respondents in relation to the first question of the calculation of χ^2 and the coefficients of the contingency is obtained:

$$\chi^2 = 18.556 > \chi^2_{0,05} = 5.991$$

$$C = 0.291$$

From the results, we can see that the calculations are valuable for χ^2 -tests is 18,556, which is greater than the tabular value for two degrees of freedom and probability 5% which is 5,991.

By analyzing the data of the respondents regarding the transparent distribution of the budget for healthcare institutions, we have those results:

$$\chi^2 = 14.647 > \chi^2_{0,05} = 5.991$$

$$C = 0.261$$

From the results it can be seen that the calculated value for the χ^2 -test is 14.647, which is greater than the corresponding table value. From that it can be concluded that the responses of the staff and patients regarding this question are similar. The contingency coefficient is 0.261, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

After processing the data for both groups of respondents in relation to the first question of the calculation of χ^2 and the coefficients of the contingency is obtained:

$$\chi^2 = 17,391 > \chi^2_{0,00} = 5.991$$
$$C = 0,283$$

From the results it can be seen that the calculated value of the χ^2 -test is 17.391, which is greater than the corresponding table value. From that it can be concluded that the responses of employees and managers regarding this question are not the same. The contingency coefficient is 0.283, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

The fourth question aimed to provide data regarding the reduction of non-productive costs in Public Healthcare Institutions in Republic of Northern Macedonia. From the obtained results, we have:

$$\chi^2 = 21,205 > \chi^2_{0,00} = 5.991$$
$$C = 0,310$$

From that it can be concluded that the responses of employees and managers regarding this question distinguish. Based on tabular data, we can conclude that in the health institutions they try to reduce non-productive costs, in order to increase the economy in operation.

Analyzing the results of the fifth question, we see that 90% of health care facilities managers (80% yes and 10% partial yes), and 88% of health care facility employees (64% yes and 24% partial yes) responded positively to this question and that is a good indicator that the health institution is making an annual project plan and a business plan in order to increase its own income from other sources (donations, subsidies, grants, etc.). After processing the data for both groups of respondents in this regard question of the calculation of χ^2 - and the coefficients of the contingency is obtained:

$$\chi^2 = 7,724 > \chi^2_{0,00} = 5.991$$
$$C = 0,139$$

The contingency coefficient is 0.139, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

After processing the data for the two groups of respondents in relation to the sixth question of the calculation of χ^2 and the coefficients of the contingency is obtained:

$$\chi^2 = 13.187 > \chi^2_{0,00} = 5.991$$
$$C = 0.249$$

The contingency coefficient is 0.249, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

Analyzing the attitude of the respondents regarding the services offered by the health institution, we have the following results:

$$\chi^2 = 14,228 > \chi^2_{\alpha, \text{df}} = 5.991$$

$$C = 0,258$$

The contingency coefficient is 0.258, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

The eighth question aimed to provide data on how the financial controls of the Health Insurance Fund influences the management of Public Healthcare Institutions in Republic of Northern Macedonia. From the obtained results, it can be observed that the majority surveyed managers (87%) and the majority of health workers (88%) estimate that financial controls by the controllers of the Health Insurance Fund have a positive impact on the functioning of health institutions, while a very small part, 3-4% , stated that financial controls have a negative effect and 9% of managers and employees did not answer this question.

After processing the data for the two groups of respondents in relation to the sixth question of the calculation of χ^2 and the coefficients of the contingency is obtained:

$$\chi^2 = 0.371 < \chi^2_{\alpha, \text{df}} = 5.991$$

$$C = 0.093$$

From the results it can be seen that the calculated value for the χ^2 -test is 0.371, which is less than the table value by two degrees of freedom and a significance threshold of 5% which is 5.991. From that it can to conclude that the responses of the managers and employees are similar to this question.

Based on this fact, we can conclude that the financial controls by the auditors of the Health Insurance Fund give very positive results in the operation and functioning of public health institutions. Through the analysis of the data obtained from this question, we can conclude that the controls by the Health Insurance Fund have an impact on the better utilization of the funds in Public Healthcare Institutions in order to increase the efficiency of the operation.

The last question aims to obtain data regarding the implementation of the recommendations from the controllers of the Health Insurance Fund. After processing the data for both groups of respondents in relation to the first question of the calculation of and the χ^2 coefficients of the contingency is obtained:

$$\chi^2 = 8,429 > \chi^2_{\alpha, \text{df}} = 5.991$$

$$C = 0,201$$

The contingency coefficient is 0.201, which indicates weak intensity between the answers of the two groups of respondents: the managers and the employees.

Based on the data presented in tabular form, it results that 90% of managers affirm the fact that they fully implement the recommendations given by the Health Insurance Fund, and 10% of them affirm that partially implement the

recommendations. While only 84% of the employees consider that the recommendations of the controllers of the Health Insurance Fund are implemented, while 8% of them think that the recommendations are partially implemented and 8% of the employees think that the recommendations are not implemented at all.

After the quantitative and qualitative analysis of the results from the tenth question, we have a clearer picture in terms of the applicability of the recommendations given by the controllers of the Health Insurance Fund. As a result, we can come to the conclusion that managers and leading persons in public health institutions adhere to the recommendations of the controllers of the Health Insurance Fund.

4. Conclusion

The situation in the health system is influenced by many factors, such as: socio-economic factors, health activities that are under the competence of the Ministry of Health and the sectors responsible for health protection. This means that improving health should be the object of cooperation between many relevant sectors, as well as efficient financial control in public health institutions.

From what we have learned in both theoretical and practical parts of this study, the following recommendations should be applied to:

- In order to have an efficient health system, the management structures in the public health institutions of the Republic of North Macedonia must create relevant and successful strategies;
- The Ministry of Health should follow the current situation in the health system and take care of its improvement, create better working conditions, engage professional people, enable training and advancement of management structures and health workers in public health institutions of Republic of North Macedonia;
- Funding and distribution of resources in public health institutions in the Republic of North Macedonia must be done in accordance to the general values based on the principle of equality, economy, solidarity and quality;
- The sources of financing of the Health Care Institutions should be used as fairly as possible, taking into account the priorities of the health institution;
- Public health institutions in the Republic of North Macedonia must adhere to the recommendations given by the financial and budgetary controllers of the Health Insurance Fund, in order to avoid irregularities and omissions in public health institutions;
- Health institutions need to have a clearly defined vision in their work, to have clearly defined goals and priorities that need to be achieved in a certain period of time;
- The responsibility of the management structures of the public health institutions in the Republic of North Macedonia must increase the level of awareness, professionalism, accountability and transparency at work should be raised as well.

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MACROECONOMIC DETERMINANTS OF NON-
PERFORMING LOANS IN THE REPUBLIC OF NORTH
MACEDONIA

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Abstract

One of the main indicators of the banks' financial performance is non-performing loans. The level and dynamics of the non-performing loans mean facing the direct consequences of credit risk. Namely, the problem with the non-performing loans leads to greater restriction of the banks' performance on the credit market, thus limiting investments and consumption, and threatening economic growth and even financial stability. Accordingly, to manage non-performing loans efficiently, it is crucial to analyze their determinants. The main objective of the study is to examine the macroeconomic determinants of non-performing loans in the Republic of North Macedonia for the period from 2006 to 2021. The study is based on a time series analysis of secondary data obtained from reports issued by relevant institutions, through the development of an Auto-Regressive Distributed Lag (ARDL) model, to investigate the dependence of non-performing loans to total loans ratio as a target variable on several macroeconomic variables/regressors such as GDP growth rate, inflation rate, unemployment rate, loans interest rate, exchange rate, and gross loans to GDP ratio. The results show that, in a long run, all the regressors have a statistically insignificant impact on the target variable; only the exchange rate negatively affects the target variable, whilst all other regressors have a positive impact on it.

Keywords: non-performing loans, banks, time series analysis, ARDL model, North Macedonia

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1. Introduction

Commercial banks play a crucial role in the economic growth of the country by making available the funds for investors to borrow as well as financial deepening in the country. In most cases, this refers to the possibility for the best transformation of savings into productive investments, which in turn represents an engine for economic development. The banks, as financial mediators, accumulate resources from several sources and allocate them into a credit portfolio comprised of different securities. They canalize the resources of the entities that have a surplus of liquid assets, to those that lack them. With that, they make the capital flows and trade easier. Here, they face an “exchange” between the risk and the return. So, at a given risk level, they attempt to maximize the returns.

Loans are the major output provided by the bank and they are related to credit risk. Hence, the bank usually wants it to be a performing one since its nonpayment leads to the incidence of huge loss on banks in particular and the country in general. The quality of the credit portfolio determines the performance of the banks and it is a crucial factor affecting the profitability of individual banks and the entire banking sector. Accordingly, proper credit policy is considered to be a fundamental determinant of the financial stability of banks (Kil & Miklaszewska, 2017). Consequently, managing credit risk should be given special emphasis, as the quality of credit risk management influences the success or failure of financial institutions (McNaughton *et al.*, 1997). In the relevant literature, one of the most commonly used proxies of credit risk is non-performing loans (NPLs).

A bank loan is considered non-performing when more than 90 days pass without the borrower paying the agreed installments or interest (ECB, 2016). A performing loan will provide a bank with the interest income it needs to make a profit and extend new loans. When customers do not meet their agreed repayment arrangements for 90 days or more, the bank must set aside more capital on the assumption that the loan will not be paid back. This reduces its capacity to provide new loans. Furthermore, if a bank has too many bad loans on its balance sheet, its profitability will suffer because it will no longer earn enough money from its credit business. In addition, it will need to put money aside as a safety net in case it needs to write off the full amount of the loan at some point in time (ECB, 2016). So, to be successful in the long run, banks need to keep the level of bad loans at a minimum level so they can still earn a profit from extending new loans to customers.

International analysis indicates that the maintenance of non-performing loans in the banks’ balance sheets and the long resolution process lead to debt overhang and the inability to reduce leverage. This additionally restricts private sector investment incentives, tends to decrease credit demand, and weakens debt repayment, all of which creates new pressure on banks’ profitability, their ability to reduce non-performing loans, and ultimately loan supply.

According to Greenidge & Grosvenor (2010), NPLs are therefore a measure of the stability of the banking system, and thereby the financial stability of a country. Consequently, to ensure a healthy and stable banking system, it is crucial to encourage many activities in the function of decreasing the volume of

non-performing loans. Regarding all these above, it is crucial to understand the determinants of NPLs and to investigate the relationship between them. Many studies in their attempt to analyze the determinants of non-performing loans identify two groups of factors. The first group is focused on macroeconomic determinants, while the second one is related to the bank-specific determinants. So, the main objective of our study is to examine the macroeconomic determinants of non-performing loans to ensure the improvement of non-functional loan management.

The rest of the paper is organized as follows. Section 2 deals with some previous work on the effect of the selected macroeconomic determinants on non-performing loans. Section 3 reviews and analyzes the non-performing loans in the Macedonian banking system. Section 4 provides insights into the objectives of the study, the research hypothesis, data, and methodology. The results obtained from the time series analysis are presented in Section 5, whilst Section 6 deals with their interpretation. The last section concludes and recommends.

2. Related research

Many studies have attempted to explore the effects of macroeconomic determinants on non-performing loans which had derived several variables such as gross domestic product rate, inflation rate, interest rate, exchange rate, unemployment rate, etc. Notable among them is the study conducted by Bošnjak *et al.* (2021). They examine the impact of some macroeconomic determinants on non-performing loans in Croatia and revealed that the unemployment rate and construction work volume have an impact on the NPL levels. Namely, while the increase in unemployment rates results in an increased level of NPLs, an increase in construction works volume and a decrease in unemployment rates were not correlated with a decrease in NPL. Otašević (2013) explores the impact of macroeconomic and bank-specific determinants on non-performing loans, using a sample of 33 banks in the Republic of Serbia in the period from 2008:Q3 to 2012:Q2. The findings of this paper indicate that it is only the macroeconomic determinants that have an impact on non-performing loans, while the impact of the bank-specific determinants is statistically insignificant. This is to say that the decrease in the GDP growth and the depreciation of the dinar lead to the deterioration of the credit portfolios of the Serbian banks. Beck *et al.* (2013) from European Central Bank in their study analyze the macroeconomic determinants of non-performing loans in 75 countries for one decade and conclude that the growth of real GDP is the main driver for non-performing loans. In the study, Ciukaj & Kil (2020) attempt to identify the quality of credit exposure determinants of banks in European Union countries (Bulgaria, Croatia, Cyprus, Italy, Ireland, Greece, Portugal) that were characterized by a high level of impaired loans at the end of 2017. They analyzed the NPLs determinants by using the static panel-based approach for the period from 2011 to 2017. The results of the panel research carried out show that the value of the NPLs ratio of the analyzed banks is statistically significantly affected by macroeconomic factors, such as GDP and the unemployment rate, as well as bank-specific factors such as the size of the bank or the dynamics of lending. Similar results are confirmed in the study conducted by

Ćurak M. *et al.* (2013) who revealed that lower economic growth, higher inflation, and higher interest rate are associated with higher non-performing loans in Southeastern European banking systems. In her study, Skarica (2013) confirmed that the primary cause of high levels of NPLs is the economic slowdown, which is evident from statistically significant and economically large coefficients on GDP, unemployment, and the inflation rate in selected European emerging markets and e. Similar results are gained from the study of Bashir *et al.* (2017) who explored the NPLs determinants on the banking system of China and they revealed, that determinants like macroeconomic factors have a huge impact on NPLs, predominantly real GDP, inflation, and real interest rate.

Regarding the research related to the macroeconomic determinants of non-performing loans in North Macedonia, it can be concluded that the studies are limited. One of the recent studies is the research revealed by Nikolov & Popovska-Kamnjar (2016). They examined macroeconomic and bank-specific determinants of NPLs in Macedonia using descriptive and econometric analysis and their findings indicate that in a period of economic growth and higher inflation, non-performing loans are low and stable. Also, they confirmed that as long as the economy is stable and banks are profitable and have adequate capital, nonperforming loans are on a level suitable for the banks. In a similar study, J. Kjosevski *et al.* (2019) found out that the profitability of banks, the growth of loans to enterprises and to households respectively, as well as the growth of GDP, all have a negative impact, while banks' solvency and unemployment have a positive impact on the rise of non-performing loans in both models. In addition, their results indicate that the exchange rate has a positive and statistically significant impact on the level of NPLs, while inflation has a negative and statistically significant impact on the increase in non-performing loans to households. Similarly, Ilievska *et al.* (2012) reported a negative relationship between GDP growth and non-performing loans ratio, as well as a positive relationship between NPLs and interest rates.

Based on the results of the conducted research it can be concluded that the macroeconomic determinants play an important role in explaining the dynamic movement of non-performing loans (NPLs) and their increase can affect banks' liquidity and solvency. Regarding this, defining the macroeconomic determinants that influence non-performing loans has crucial importance on the banks' performance and the stability of the financial system as a whole.

3. Non-performing loans of the Macedonian banking system

Proper credit policy is considered to be a fundamental determinant of the financial stability and profitability of banks. The increased number of banks with high-risk loans leads to an increase in the value of loans not repaid on time and an increase in provisions created on this account and consequently reduces the profitability of the entire banking sector.

In the literature, many indicators are used by both banks and supervisors to measure the quality of credit exposure. However, the most frequently used indicator is non-performing loans (NPLs), also called non-performing exposures (ECB, 2017).

A bank loan is considered non-performing when customers do not meet their agreed repayment arrangements for 90 days or more. Thus the bank must set aside more capital on the assumption that the loan will not be paid back which results in reduced banks' capacity to provide new loans. The non-performing loan growth involves the necessity of provisions for loans and advances losses, which reduces the overall profits and weakens the structure. A non-performing loan is a risky asset and it leads to the insolvency of banks and major effect on the economy as a whole. So, to maintain a sound banking system, but also to enable sustainable credit growth with all the consequent effects on the dynamics of total economic growth, it is crucial to urge activities and efforts to reduce the volume of non-performing loans.

Regarding this, non-performing loans (NPLs) and the banking system stability nexus continue to gain more research attention, especially after the 2008/2009 global financial crisis (GFC) that led to the credit crisis in most economies (Ciukaj & Kil, 2020). The management of banks has been aware of the significance of credit risk in banking operations for many years and since 2013 it considers them the greatest threat to the financial stability of banks in surveys (Kil & Miklaszewska, 2017).

The increased non-performing loans in banks' balance sheets is one of the important challenges faced by most European countries in the post-crisis period and especially after the emergence of debt problems in some countries of the EU area. This problem was more pronounced in the countries in Central, Eastern, and Southeast Europe where non-performing loans significantly increased during the post crises period. Since the onset of the crisis, NPLs in the region increased to an average of 11% (end-2011) from just above 3% in 2007 (Klein, 2013).

In the Macedonian banking system, between 2008 and 2014, the share of non-performing loans to total gross loans grew slower compared to other countries in Central Eastern or Southeastern Europe. An important factor was that the credit growth in the Republic of North Macedonia in the period before the global crisis was double-digit only in a relatively short period and substantially smaller compared to other countries. This, together with the relatively good coverage of non-performing loans with impairment, was the main reason why the global financial crisis and the resulting economic slowdown were not a concern for the Macedonian banks compared to some other countries.

The graph in Fig. 1 depicts the level of non-performing loans to the non-financial sector of the Macedonian banking system for the period from 2005 to 2021.

Based on the graph in Fig. 1, it can be concluded that the share of NPL in total loans of non-financial entities was at a very low level in 2008 and was followed by a steady increase until 2013. But, in 2016 non-performing loans recorded a significant decline, mainly due to the amendments to the regulation of the National Bank, requiring banks to transfer all claims that have been fully provisioned for more than two years to off-balance sheets (NBRM, 2017). This compulsory cleansing of credit portfolios of banks is the main driver for the improvement of the credit risk indicators and resulted in dropped NPLs ratio of 6.6%. Such positive movements in NPLs ratio continued in the following years and it decreased significantly in 2019, whereby their share in the total loans to the

non-financial sector reduced to 4.2%. In the portfolio comprised of non-financial companies, non-performing loans decreased as a result of the selling of non-performing claims from one non-financial company, conducting mandatory write-offs by banks, and to a lesser extent due to foreclosures.

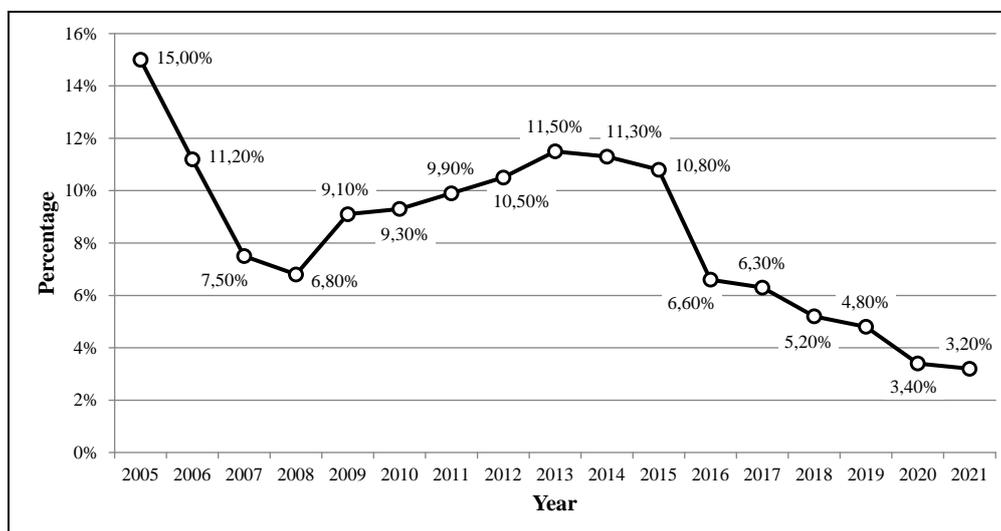


Figure 1. Non-performing loans ratio, 2005–2021 (Source: NBRNM, Banking System Indicators)

Although in 2020 the Macedonian banking sector faced many challenges, it succeeded to maintain its stability and contributed to mitigating the consequences of the COVID-19 crisis, registering solid growth of activities. This was a result of the public trust in the banking system, amid strong capital and liquidity positions with banks, but on the other hand, it arises from the National Bank's rapid reaction. Regarding the quality of the loans portfolio, as is shown in Fig. 1, non-performing loans decreased by 26.5%, reducing their share in total loans by 1.4 percentage points, to a very low level of 3.4%. The reduction of non-performing loans was influenced by the regulatory measure for the mandatory write-off of fully provisioned nonperforming loans and also influenced by regulatory measures undertaken by the National Bank in the area of credit risk management, primarily the introduction of the possibility for temporarily delayed repayment of loans due to corona crisis. This measure led to a temporary delay in the possible materialization of the credit risk in the banks' portfolios (NBRNM, 2020). Such positive movements continued in the following 2021 and the non-performing to total loan ratio remained at the historically lowest level of 3.2%. Even though during 2020 and 2021 the Macedonian banking sector was functioning in conditions of severe health and economic crisis, it could support the corporate sector and households and remained sound and stable (NBRNM, 2021).

4. Research Methodology

4.1 Objectives of the Study

The primary objective of the study is to examine the nature and the magnitude of the impact several macroeconomic determinants have on non-performing loans in North Macedonia.

4.2 Research Hypothesis

The null hypothesis this study attempts to confirm can be specified as:
 H_0 : Macroeconomic determinants have a significant impact on non-performing loans.

4.3 Data

The study examines the impact of several macroeconomic determinants on non-performing loans (NPLs) in North Macedonia. The dataset obtained for the study consists of officially published quarterly time-series data, covering the period from 2006:Q1 to 2021:Q4 (16 years \times 4 quarters/year = 64 observations). The variables of interest are given as follows:

- *Dependent variable*
 - Non-Performing Loans to Total Loans ratio (*NPL2TL*), in percentages [%], as a measure of the quality of banks' loan portfolio;
- *Independent variables*
 - Gross Domestic Product Rate (*GDPR*), in percentages [%], as a measure of the economic activity in the country;
 - Inflation Rate (*IR*), in percentages [%], as a measure of macroeconomic stability;
 - Unemployment Rate (*UR*), in percentages [%];
 - Loans Interest Rate (*LIR*), in percentages [%];
 - Exchange Rate (*EXR*), in percentages [%];
 - Gross Loans to GDP ratio (*GL2GDP*), in percentages [%], as a measure of intermediary financial development;

All the data used in this research have been exploited from secondary online sources, i.e. the official websites of the National Bank of the Republic of North Macedonia (NBRNM, –) for *NPL2TL*, *LIR*, *EXR*, and *GL2GDP*, Ministry of Finance of the Republic of North Macedonia (MoF, –) for *IR* and *UR*, and State Statistical Office of the Republic of North Macedonia (MAKStat Database, –) for *GDPR*.

4.4 Methodology

The stationarity of the variables was tested by Augmented Dickey-Fuller (ADF) test and Phillips-Peron (PP) unit root tests, taking into account two information criteria: AIC (Akaike Information Criterion) and SIC (Schwarz Information Criterion).

The optimal lag length is estimated based on the evaluation of a corresponding unrestricted/standard VAR model.

The ARDL model is specified taking into account the variable *NPL2TL* as dependent one, and six dynamic regressors (*GDPR*, *IR*, *UR*, *LIR*, *EXR*, and *GL2GDP*), based on the AIC selection criterion, and automatic selection of a certain number of lags as maximum dependent lags.

Based on the obtained ARDL short-run coefficients, the short-run causality tests are performed using the series of Wald tests.

The long-run coefficients of the regressors and cointegration equation are estimated after performing the Bounds Cointegration Test.

The residual diagnostics include testing for the presence of autocorrelation and serial correlation using the Ljung-Box Q-statistics, testing for normality of residuals using the Jarque-Bera test, testing for the presence of serial correlation using the Breusch-Godfrey Serial Correlation LM Test, and testing for heteroskedasticity test using both Breusch-Pagan-Godfrey and ARCH tests.

The stability diagnostics of the selected ARDL model is carried out using the CUSUM and CUSUM of Squares Test.

All data analyses were carried out using the EViews v10 econometric package.

5. Results of the analysis

The results of both unit root tests (ADF and PP) and both information criteria (AIC and SIC) indicate that only the variable *GDPR* is stationary at level, i.e. its order of integration is $I(0)$. All other variables (*NPL2TL*, *IR*, *UR*, *LIR*, *EXR*, and *GL2GDP*) are not stationary at level, but they become stationary after being first-differenced. Therefore, their order of integration is $I(1)$. None of the variables has an order of integration $I(2)$. Since all the variables of interest have an order of integration that is either $I(0)$ or $I(1)$, but not $I(2)$, an ARDL (Auto-Regressive Distributed Lag) model can be built.

The optimal lag length was determined to be 4 according to the AIC selection criterion.

Based on the evaluation of numerous ARDL models vis-à-vis trend specification, and taking into account the values of important parameters like R^2 , Adjusted R^2 , F-statistics, and Durbin-Watson statistics, the ARDL(4, 2, 2, 2, 4, 4, 3) model was selected among 62,500 evaluated models, based on an unrestricted constant & unrestricted trend specification and minimal AIC value of 1.795308 (Table 1):

Table 1. ARDL(4, 2, 2, 2, 4, 4, 3) model summary statistics
(Source: Authors' calculations, EViews output)

R-squared	0.982547	Mean dependent var	8.132409
Adjusted R-squared	0.966783	S.D. dependent var	2.795224
S.E. of regression	0.509442	Akaike info criterion	1.795308
Sum squared resid	8.045470	Schwarz criterion	2.807575
Log likelihood	-24.85925	Hannan-Quinn criter.	2.191262
F-statistic	62.32911	Durbin-Watson stat	1.972548
Prob(F-statistic)	0.000000		

The specification of the ARDL(4, 2, 2, 2, 4, 4, 3) model is given in Table 2.

Table 2. Specification of the ARDL(4, 2, 2, 2, 4, 4, 3) model and short-run coefficients (Source: Authors' calculations, EViews output)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
NPL2TL(-1)	0.563571	0.152690	3.690960	0.0009
NPL2TL(-2)	0.161123	0.170551	0.944719	0.3521
NPL2TL(-3)	-0.025637	0.169535	-0.151219	0.8808
NPL2TL(-4)	0.197254	0.127881	1.542480	0.1331
GDPR	0.057704	0.026855	2.148695	0.0396
GDPR(-1)	0.067998	0.027330	2.488009	0.0184
GDPR(-2)	-0.070299	0.026848	-2.618452	0.0135
IR	0.067927	0.084963	0.799490	0.4301
IR(-1)	-0.244045	0.119347	-2.044828	0.0494
IR(-2)	0.314418	0.091625	3.431575	0.0017
UR	0.057316	0.207348	0.276424	0.7841
UR(-1)	0.220610	0.248610	0.887376	0.3817
UR(-2)	0.362307	0.216644	1.672365	0.1045
LIR	5.148388	1.701593	3.025628	0.0050
LIR(-1)	3.825919	1.873254	2.042392	0.0497
LIR(-2)	-6.982085	1.840258	-3.794079	0.0006
LIR(-3)	-0.627310	1.781253	-0.352174	0.7271
LIR(-4)	2.830798	1.250922	2.262970	0.0308
EXR	3.734549	1.998945	1.868260	0.0712
EXR(-1)	3.473223	1.929644	1.799930	0.0816
EXR(-2)	-7.636210	2.242558	-3.405134	0.0018
EXR(-3)	-1.591507	1.914990	-0.831078	0.4123
EXR(-4)	-3.804857	2.006711	-1.896066	0.0673
GL2GDP	0.411660	0.122056	3.372713	0.0020
GL2GDP(-1)	-0.314975	0.154079	-2.044236	0.0495
GL2GDP(-2)	-0.417506	0.144195	-2.895432	0.0069
GL2GDP(-3)	0.371976	0.130387	2.852855	0.0077
C	286.2993	232.2976	1.232468	0.2270
@TREND	0.668565	0.183687	3.639697	0.0010

The Bounds Cointegration Test showed that there is cointegration among the variables in the model, i.e. there is a long-run relationship, which allows one to estimate both a short-run ARDL model and long-run ECM/VECM model, as F-statistic = 5.496136 > I(1) at all levels of significance (1%, 2.5%, 5%, and 10%) (Table 3).

Table 3. The outcome of the Bounds Cointegration Test
(Source: Authors' calculations, EViews output)

F-Bounds Test		Null Hypothesis: No relationship	No levels	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	5.496136	10%	2.53	3.59
k	6	5%	2.87	4
		2.5%	3.19	4.38
		1%	3.6	4.9

The cointegration equation is specified in Table 4:

Table 3. The outcome of the Bounds Cointegration Test
(Source: Authors' calculations, EViews output)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.103689	0.015302	-6.776380	0.0000

The estimated values of long-run coefficients are summarized in Table 5.

Table 5. Long-run coefficients of the ARDL(4, 2, 2, 2, 4, 4, 3) model and error correction (EC) term (Source: Authors' calculations, EViews output)

Levels Equation				
Case 5: Unrestricted Constant and Unrestricted Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPR	0.534316	0.587515	0.909451	0.3701
IR	1.333792	1.953676	0.682709	0.4999
UR	6.174546	6.388705	0.966479	0.3413
LIR	40.46433	46.01817	0.879312	0.3860
EXR	-56.17563	90.18301	-0.622907	0.5379
GL2GDP	0.493366	1.212143	0.407019	0.6868
EC = NPL2TL - (0.5343*GDPR + 1.3338*IR + 6.1745*UR + 40.4643*LIR - 56.1756*EXR + 0.4934*GL2GDP)				

6. Interpretation of the obtained results

Based on the results of the analysis presented in Table 2, it can be concluded that in the short run:

- The first lag of *NPL2TL* is both positive and statistically significant (p-Value = 0.0009 < 1%). The third lag *NPL2TL*(-3) negatively affects the current value of *NPL2TL*, but it is statistically insignificant. The second and the fourth lag of *NPL2TL* positively affect the current value of *NPL2TL*, but they are statistically insignificant, too;
- At level, *GDPR* positively (+0.057704) affects the current value of *NPL2TL*; this impact is statistically significant (p-Value = 0.0396 < 5%);
- At level, *IR* has a positive (+0.067927), but statistically insignificant impact on the current value of *NPL2TL*;
- At level, *UR* has a positive (+0.057316), but statistically insignificant impact on the current value of *NPL2TL*;
- At level, *LIR* has a positive (+5.148388) impact on the current value of *NPL2TL*, which is also statistically significant (p-Value = 0.0050 < 1%).
- At level, *EXR* has a positive (+3.734549) and statistically significant impact on the current value of *NPL2TL* (p-Value = 0.0712 < 10%).
- At level, *GL2GDP* has a positive (+0.411660) and statistically significant impact on the current value of *NPL2TL* (p-Value = 0.0020 < 1%).

The series of Wald tests, which tests the null hypothesis that the specific regressor's lags cannot jointly influence the current value of the target variable, *NPL2TL*, have shown that this null hypothesis can be rejected at a 1% level of significance for all dependent variables included in the ARDL model. In other words, it can be concluded that all dependent variables along with their lags and their current value can jointly influence the current value of *NPL2TL* in the short run because there is a short-run causality running from them to the current value of *NPL2TL*.

The outcome of the Bounds Cointegration Test shown in Table 3 shows that since $F\text{-statistic} = 5.496136 > I(1)$ at all levels of significance (1%, 2.5%, 5%, and 10%), the null hypothesis stating that there is no cointegration among the variables has to be rejected. This confirms that there is cointegration among the variables, i.e. there is a long-run relationship, meaning that time series are related to each other and therefore they can be combined linearly. This justifies the estimation of both the short-run ARDL model and the long-run ECM/VECM model.

Based on the results given in Table 4, the coefficient of the $\text{CointEq}(-1)$ is negative, with a coefficient estimate of -0.103689 , and statistically significant (p-Value = 0.0000 < 5%) at 5% level of significance. This implies that there is a long-run causality running from all the regressors to *NPL2TL*. The speed of the adjustment towards long-run equilibrium is 10.36%, i.e. the system corrects its

previous period of disequilibrium at a speed of 10.36% within one period of time (a quarter).

The long-run values of the regressors' coefficients presented in Table 5 undoubtedly suggest that in a long run:

- All the regressors have a statistically insignificant impact on *NPL2TL*;
- One of the regressors (*EXR*) has a negative (-56.17563) impact on *NPL2TL*;
- All other regressors (*GDPR*, *IR*, *UR*, *LIR*, and *GL2GDP*) have a positive impact on *NPL2TL*;
- The increase of *GDPR* by 1 percentage point (pp) yields an increase of *NPL2TL* by 0.534316 percentage points (pp), having minded the *ceteris paribus* principle;
- The increase of *IR* by 1 pp yields an increase of *NPL2TL* by 1.333792 pp, having minded the *ceteris paribus* principle;
- The increase of *UR* by 1 pp is expected to increase *NPL2TL* by 6.174546 pp, having minded the *ceteris paribus* principle;
- The increase of *LIR* by 1 pp is expected to increase *NPL2TL* by 40.46433 pp, having minded the *ceteris paribus* principle;
- The increase of *EXR* by 1 pp is expected to decrease *NPL2TL* by 56.17563 pp, having minded the *ceteris paribus* principle;
- The increase of *GL2GDP* by 1 pp is expected to increase *NPL2TL* by 0.493366 pp, having minded the *ceteris paribus* principle.

According to Table 1, the extremely high value of the coefficient of determination R^2 suggests that the regressors explain 98.25% of the variation of the target variable, *NPL2TL*. The extremely high value of Adjusted R^2 (0.966783) points out the fact that the model includes regressors that highly contribute to the explanatory power of the model, which suggests that the observed ARDL(4, 2, 2, 2, 4, 4, 3) model is a good-fitting model. The model is also statistically significant since the value of 62.32911 of the F-statistics is statistically significant ($p\text{-Value} = 0.000000 < 5\%$). Since the value of the Durbin-Watson statistics is slightly below the value of 2.00 ($1.972548 \approx 2.00$), it can be concluded that the model is free from autocorrelation, i.e. free from first-order serial correlation.

The Ljung-Box Q-statistics for high-order serial correlation shows that there is no serial correlation in the residuals up to 28 lags. The Jarque-Bera test of normality of the residuals confirms the fact that the residuals are normally distributed. The residuals obtained from the ARDL model are free from serial correlation up to order 4. The Breusch-Pagan-Godfrey test proves that the residuals are free from heteroskedasticity. Finally, the plots of the CUSUM and CUSUM of Squares tests remain strictly between the 5% critical bounds, which proves the structural stability of the ARDL(4, 2, 2, 2, 4, 4, 3) model, as well as the stability of the variance of the regression error.

7. Conclusions

The banking system in each country has a crucial role in providing financial resources to the corporate sector and supports economic development, especially in developing countries and transition economies where the banks dominantly participate in the financial system as the capital market is still poor and undeveloped. The Macedonian financial system is characterized by the dominant role of the banks which are the most important source of funding in the Macedonian economy. The credit exposure of the Macedonian banks for the last five years increased about 40% from 484,201 million MKD in 2017 to 672,939 million MKD in 2021. Closely related to banks' credit exposure are credit risk and non-performing loans as the main indicator of the quality of banks' loan portfolios. The credit risk has to be managed carefully by the supervisory authorities to avoid bankruptcies and to keep the safety and stability of the banking and the financial system as a whole. So, the main objective of this study was to examine the impact of macroeconomic determinants on the ratio of non-performing loans to total gross loans in North Macedonia. To reach the goal of the research we apply Auto-Regressive Distributed Lag (ARDL) model and our findings show that, in a long run, GDP growth rate, inflation rate, unemployment rate, loans interest rate, and gross loans to GDP ratio have a positive, yet statistically insignificant effect on the non-performing loans ratio, while the exchange rate negatively affects the target variable. So, the results did not confirm the null hypothesis of the study since the impact of all macroeconomic determinants that are taken into account on the non-performing loans ratio is not statistically significant.

This study will contribute to the existing research in this field and can be a basis for further research on the relationship between NPLs and some variables that were not analyzed in this paper. A challenge for the next research will be the inclusion of the causality between the non-performing loans ratio and profitability indicators in North Macedonia.

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THE ROLE OF THE GATS ONREINSURANCE SERVICES:
REPUBLIC OF NORTH MACEDONIA CASE

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Abstract

Financial markets have become very complex due to financial liberalization and technological development. The current era of financial globalization poses new challenges for regulatory authorities, which must keep pace with technological and financial sophistication as well as advancing regulatory infrastructure which will facilitate international trade in services. The creation and development of a strong global insurance and reinsurance market is a requirement of the time but at the same time an indicator that proves the existence of a developed market economy. There is a close correlation between the insurance market and the economic growth of a country or region.

The purpose of this paper is to explain impact of General Agreement on Trade Services on insurance and mainly reinsurance services. Therefore, this paper aims to measure the effect of this agreement, positive and negative implications to insurance and reinsurance services, taking for example, the Republic of North Macedonia. The research paper can be classified into two major categories; descriptive and explanatory part of addressed topic. This article presents an analytical description of the GATS and how it works in insurance and reinsurance, which of the different modes are available for trade services in this sector and what have been the recent practices in developing and developed countries. The readers targeted by this article are those who deal with insurance, reinsurance as well as those who are engaged in planning, creating strategies, making policies and creating internal rules for their developing and undeveloped countries.

JEL classification: F13, G2, G20, G22, G28

Keywords: Reinsurance, Insurance, financial services, GATS, modes.

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1. Introduction

Global demand for services and international services trade in recent years has dramatically increased the need of the legal infrastructure within countries as well as the advancement of international agreements which facilitate free trade activity with an emphasis on international trade services as a result; we have GATS in the framework of WTO. Between 1990 and 2005, the share of services in gross domestic product (GDP) has grown continuously, from 66 per cent to 73 per cent in industrialized countries and from 49 per cent to 52 per cent in developing countries. Services now account for about 72 per cent of employment in industrialized countries and 35 per cent of employment in developing countries. Moreover, over the past five years, world services exports have accelerated, with annual average growth rates of 12 and 13 per cent for industrialized countries and developing countries respectively (Mashayekhi&Tuerk, 2010).

The main purpose of this research is to highlight the impact of General Agreement on Trade Services in insurance and mainly on reinsurance services. The General Agreement on Trade in Services (known as the GATS) is the first multilateral trade agreement to promote the liberalization of services in countries around the world. It is an important new element in the international framework that affects the regulation of every WTO Member's financial sector.

The development of financial market and international trade services has its positive impact in socio-economic developments: in social aspect, it enables the citizens to receive better trade services expanding the variety of products and reducing costs, while from the economic point of view it gives investors opportunities from the specific country to focus their investments in various fields and activities for which they have advantages over competitors abroad.

Functioning of financial market segments in this sense, reinsurance affects country's economy, regional and global: by increasing the markets in which it operates by sharing risks, compensation of damages from insured cases, consequently opportunities are increased directly.

Increased quality management of risks improves the confidence of customers towards insurance companies and increases the credit potential, which in turn directly impacts the improvement of investments and reduction of unemployment rate in host country. Increased investment initiatives also affect the growth of budget revenues and improve the tax system efficiency of the country. In this sense, consequences that may arise from the informality reduction must be accepted. These indicators are related to each other and have multiplying effect on numerous financial and economic outcomes.

The paper is organized as follows. The next section provides an overview of the literature and history of insurance and reinsurance services. Section III introduces objectives and research questions. Section IV presents and describes data and methodology. Section V, Empirical analyses: What is General Agreement on Trade Services and its function and assessing positive and negative implications of this agreement to insurance and reinsurance services in North Macedonia? The last section includes summary of conclusions and remarks.

2. Literature review

Reinsurance has been practiced as a commercial endeavour for centuries (Kramer, 1980). Published references to reinsurance are found in English and European laws from the 15th, 16th, and 17th centuries (Holland, 2009). For example, a translation from the *Guidon de la Mer* (Normandy, 1671) states: But if an underwriter repent of what he has done; if he be afraid to encounter the risk he has engaged to run, or find that he has incautiously bound himself to a greater amount than he may be able to discharge, he may shift it, or part of it, from himself to other insurers by causing a re-insurance to be made on the same risk, upon the best terms he can, and the new insurers will be responsible to him in case of loss, to the amount of the re-insurance (Marshall, 1810). One author surmised that “reinsurance almost certainly grew out of the practice of offering risk to more than one insurer when the first insurer could not accept it all” (Kramer, 1980).

Prior to the American Revolutionary War, reinsurance for the fledgling American insurance industry was primarily provided through Lloyd’s—an insurance market in London with roots dating to 1688: The market now known as Lloyd’s of London began conducting business from Edward Lloyd’s coffee house in 1688. It is among the world’s oldest suppliers of reinsurance, and has had a longstanding role as a supplier of reinsurance to U.S. insurers. Lloyd’s has a structure unique in the insurance industry: it is organized as a marketplace where underwriting “members” (the risk bearing capital suppliers), now primarily consisting of corporations and insurance groups, including U.S.-based insurers, join together and provide capital to “syndicates” that underwrite risk. Presently, 91 syndicates operate within Lloyd’s and underwrite a wide variety of insurance and reinsurance lines. Syndicates are essentially annual joint ventures; members have the right, but not the obligation, to participate the following year. Managing agents, engaged by members to operate one or more syndicates, provide management, support staff, and the business infrastructure to individual syndicates. Business at Lloyd’s must be placed through an accredited Lloyd’s broker. Oversight of the market is conducted by the Corporation of Lloyd’s, which sets capital standards, reviews and analyzes the activities of syndicates, and provides various other monitoring functions” (FRN on behalf of Lloyd’s).

Access to Lloyd’s was not available to the U.S. market, however, during the American Revolutionary War and in the very early years of the nation. By the first quarter of the 19th century, some reinsurance business was being conducted by U.S. companies, but it appears that most reinsurance was at that time placed overseas (Holland, 2009). Reinsurance was well established as an industry in the United States by the early 20th century (SwissRe, 1995). Concurrently, the modern global reinsurance industry developed during the 18th and 19th centuries. The first independent professional reinsurance company was the Cologne Re. The need for such a company was evident following the losses of the Great Fire in Hamburg. On Dec. 22, 1842 invitations were sent to deliberate on the founding of a reinsurance company in Cologne. Cologne Re was founded in Germany as the first professional reinsurance company in 1842. Statutes were drafted in 1843 and the Cologne Re was founded on April 8, 1846. Its first official treaty was written in 1852; Golding notes that one of the main goals in founding Cologne Re was “to

preserve for a German company the surpluses which the direct German offices had previously placed with French and Belgian companies.” Aachener Re (1853), Frankfurter Re (1857) and Magdeburger Re (1862) (Holland, 2009).

In the following decades, additional reinsurers were established throughout Europe, including Swiss Re in 1863 and Munich Re in 1880. Some of these companies continue to operate globally to this day, including as reinsurers of all over the world. During the first half of the 20th century, in large part due to the world wars, new reinsurers began to emerge in the United States as well as in countries (e.g., Switzerland) which experienced fewer commercial disruptions during the wars (Holland, 2009). On the eve of World War II, to demonstrate its ability to reliably service U.S. business, Lloyd’s set up an American trust fund to receive all dollar-denominated premiums and from which claims could be satisfied (Mount&Mendes, 2000). That fund evolved into the “Lloyd’s American Trust Fund” and related funds established to secure the liabilities of its underwriting syndicates (Lloyd’s, 1998).

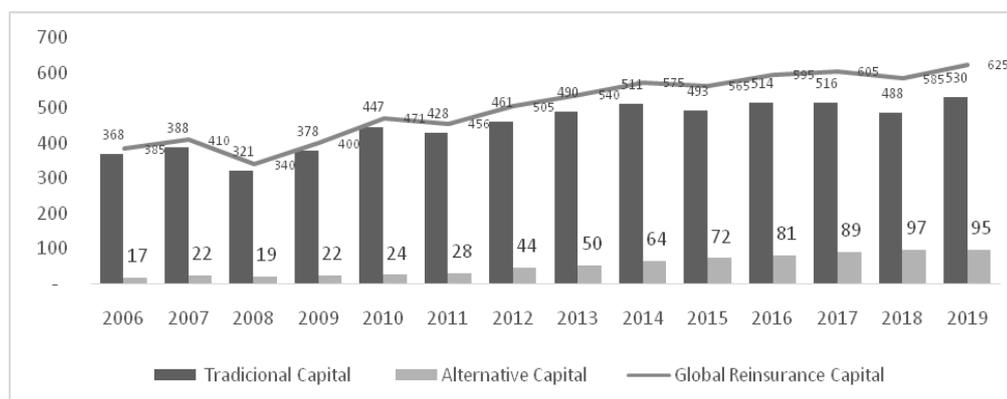
Today, the reinsurance industry supporting the U.S. direct insurance market is global in scope, and primarily consists of approximately 50 large, professional reinsurers and reinsurance groups, as well as many smaller reinsurers (Standard&Poor’s, 2014). According to analysis by the Reinsurance Association of America, in 2013 approx. \$46 billion in total (P/C) reinsurance premiums were ceded by U.S.-based insurers to unaffiliated reinsurers; of this amount, approx. \$28.4 billion of premiums were ceded to non-U.S. reinsurers and approximately \$17.6 billion of premiums were ceded to U.S. professional reinsurers (Reinsurance&AssociationofAmerica, 2014). Capital in the reinsurance sector has generally been increasing year-over-year for most of the past decade. www.statista.com reports that global reinsurance capital amounts to \$625 billion as of end of-2019 (Figure 1). Of this amount, \$530 billion is classified as traditional³ capital and \$95 billion as alternative⁴ capital⁵.

Figure 1: Value of global reinsurance capital from 2006 to 2019 (in billion U.S. dollars)

³Traditional reinsurers provide insurance coverage to cedants in exchange for a premium. The coverage is normally provided on an indemnity basis (providing payments based on the actual levels of losses incurred) with the reinsurer’s obligation to the cedant backed by reserves and capital held by the reinsurer (or retrocedent if risk is transferred through retrocession) or backed by collateral posted by the reinsurer, where required. Depending on the contractual arrangements, the reinsurer may pay the cedant a ceding commission to share some of the ceding’s costs related to originating the underlying insurance policies and may also share the costs of loss adjustment (loss adjustment expenses) and/or profits

⁴The alternative reinsurance market began to develop in the aftermath of Hurricane Andrew in 1992 in response to capacity shortages in the traditional reinsurance market. The alternative reinsurance market provides a means for investors such as hedge funds, private equity funds and pension funds to gain exposure to reinsurance risks that provide relatively high-yields and are usually uncorrelated to credit cycles - as an alternative to investing directly in reinsurance companies

⁵The amount of alternative reinsurance capital has steadily risen since 2008. Alternative capital refers to capital from non-traditional sources, such as catastrophe bonds, pension funds, endowments, family offices, hedge funds and other private investors, rather than equity capital. www.statista.com/statistics/802672/global-reinsurance-capital-by-type/



Source: <https://www.statista.com/statistics/273529/global-reinsurance-capital-from-2006/>

Reinsurers are important for the stability of the financial system mainly because they are of systemic importance to the primary insurance market. This is because they facilitate risk-spreading, mainly of extreme losses, from primary insurers. To diversify risk concentrations, most reinsurers are active globally and in a multitude of insurance segments, reinsurers can also cede risks to other reinsurers (called retrocession). This allows reinsurers to reduce the volatility of payment claims and thereby lower the sum of total risk capital required. To accurately identify potential losses facing euro area reinsurers it is important to have information on reinsurers' underwriting risk exposures. "A number of countries have made trade liberalization commitments under the General Agreement on Trade in Services: Annex on Financial Services allowing for the provision of financial services by suppliers in other countries. These commitments are scheduled across different financial services sub-sectors (life insurance, non-life insurance, reinsurance and retrocession, insurance intermediation, etc.) indicating any limitations on market access and/or national treatment applicable to each sub-sector in terms of cross-border supply, consumption abroad, commercial presence, and presence of natural persons"⁶.

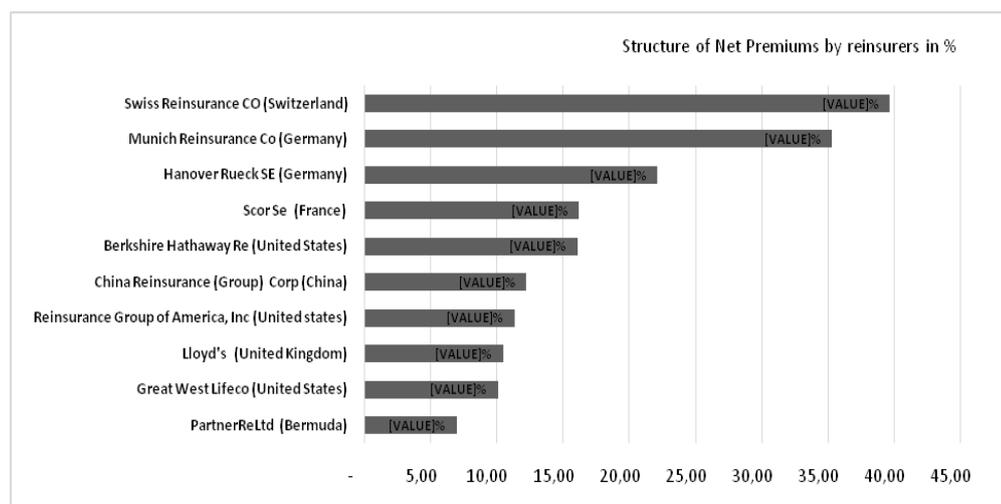
The presents information from reinsurers annual reports on what reinsurers are insuring and where.⁷Euro area reinsurers mainly reinsure non-life insurance (47%), followed by life/health insurance (39%). Some, however, also provide primary insurance⁸.

Figure 2. Largest reinsurers worldwide in 2019, by net premiums written

⁶<https://www.oecd.org/finance/the-contribution-of-reinsurance-markets-to-managing-catastrophe-risk.pdf>

⁷ Reinsurers' annual reports and ECB calculations. Note: Data for Cologne Re, Hannover Re, Mapfre Re, Munich Re and Scor: https://www.ecb.europa.eu/pub/financial-stability/fsr/focus/2008/pdf/ecb~217b43e23f.fsrbox200806_17.pdf

⁸<https://www.statista.com/statistics/273158/largest-reinsurers-worldwide-by-net-premiums/>



Source: www.statista.com/statistics/273158/largest-reinsurers-worldwide-by-net-premiums/

The non-life reinsurance segment can be seen as the riskiest part of the reinsurance business, as losses and probabilities are often more difficult to assess and potentially very large. For example, natural catastrophes or terror attacks can cause very large losses on properties, which account for 16% of total insurance. Similarly, the insurance of ships, oil platforms, airplanes and satellites (6% of total insurance) can also result in extreme losses that are very difficult to predict. Furthermore, the financial market turmoil that erupted during the summer of 2007 is likely to trigger significant litigation against investors and investment advisors and is an example of how liability reinsurance (9% of total insurance) can affect reinsurers. Motor reinsurance (7% of total insurance) can be seen as a more stable source of losses for reinsurers, as it is typically easier to estimate potential losses due to the more stable nature of motor insurance claims.

Reinsurance is a contract of indemnity between commercial parties – an insurer (i.e., the “cedent” or “ceding insurer”) and one or more “assuming insurers” (reinsurers) – by which, in exchange for a premium, a specified portion of the risks under one or more insurance policies written by the cedent are transferred (“ceded”) to the reinsurers. “The reinsurance of peak risks originally assumed by primary insurers – risks with low probabilities of occurrence, but high severities – is the core business of reinsurers”⁹. Developing country challenges in relation to insurance services sector arise essentially from five areas (Puri, 2007):

- First is the impact of insurance liberalization on developing countries;
- A second area is the importance of building supply side capacity;
- A third area is the role of regulation frameworks;
- A fourth area, relates to the current negotiations on insurance services within the GATS. One part of this relates to proposals made and discussions on issues such as classification of insurance services, transparency, and the scope of the prudential carve out, the exemption for

⁹Association of Insurance Supervisors, Reinsurance and Financial Stability, 19 (July 19, 2012) [www.iaisweb.org/Reinsurance_and_Financial_Stability%20\(1\).pdf](http://www.iaisweb.org/Reinsurance_and_Financial_Stability%20(1).pdf)

services supplied in the exercise of governmental authorities, among other things. The other part relates to specific commitments made and those that are being requested of developing countries. For instance, it is estimated that approximately 30 of the total 69 offers made in the current Doha round of negotiations relate to insurance and insurance related services;

- A fifth area for consideration relates to the role of the Government as a provider of insurance services and the extent of its role as a provider of insurance services.

Developing countries have expressed concerns regarding Mode 1 (cross border supply) and Mode 2 (consumption abroad) liberalization given the sensitivity and importance of the financial services sector and weaknesses of their supervisory and regulatory frameworks, specifically in sectors like reinsurance and marine, aviation and transport insurance. It has been pointed out that any liberalization should take into account the financial, monetary and exchange policies of the countries concerned.

In the practice of insurance activity, we face two notions of insurance liberalization:

- The notion of liberalization and insurance within the obligation at the level of internal competition as well as within the level of tariffs for insurance premiums,
- While the notion of (re)insurance liberalization in terms of the activity in the context of GATS, implies the possibility of signing various insurance opportunities around the world, or their branches for their activities and their activation for the business of them to be settled in their different places (in developing and undeveloped countries) and the exchange of experiences (know how). Insurance liberalization, successfully managed, will help to attract foreign direct investment and drive development in financial services, in turn spurring overall economic development, financial security and levels of prosperity.

Insurance in Macedonia functioned as an integral part of the insurance system of the Yugoslav Federation until the early 1990s. In 1974, under the legal provisions of the Yugoslav Federation, a community for insuring properties and people, ZOIL “Makedonija”, was established. It functioned as such until 1991. With Macedonia's independence from the former Yugoslav Federation and the creation of a new legal framework and the application of the new socio-economic system, the foundations were set on which the development of a new insurance model began. The only insurance company, ZOIL “Makedonija” was transformed into a joint stock company and the first step to be undertaken under these new circumstances was to establish cooperation with external reinsurance companies. In 1993, the Law on Insuring Assets and Persons was adopted, which was the first step towards the liberalization of the insurance market in Macedonia, allowing for the creation of new joint venture companies (Osmani&Imeri, 2018).

Until 2000, the insurance market operated as a monopoly market where 90% of the market was covered by only one insurance company. In 2002, the new Law on Insurance Supervision was adopted, after extensive consultations with domestic experts and relevant supervisory insurance authorities. This law created

new rules for the establishment and operation of an insurance business in the country and the liberalization of the conditions for free movement of capital. These were the prerequisites for foreign insurance companies to invest in the domestic insurance market and to increase the competitive market. All these elements have influenced the transformation of the structure of the Macedonian insurance industry (Pervan&Ćurak&Poposki, 2014).

The effect of the GATS agreement is summarized by AadityaMattoo: General Trade in Services (GATS) has created a more secure environment for trade in services, but it has not generated the negotiating momentum to reduce protection or the rules to ensure that protection takes a desirable form. In dealing with the trade-impeding impact of domestic regulations it has achieved even less. Many countries have taken advantage of the GATS to create a more secure trading environment by making legally binding commitments to market access. The credibility of reform would increase with wider commitments to maintain current levels of openness or to increase access in the future. Multilateral rules on domestic regulations can help promote and consolidate domestic regulatory reform, even when the rules are designed primarily to prevent the erosion of market access for foreign providers (A.Mattoo, 2001).

Efforts to liberalize trade in services are increasingly important as services trade increases even more rapidly than trade in goods, paralleling the increasing share of modern services in the economies of the industrialized countries (A.Krueger&A.Mattoo, 2003). The GATS guarantees to foreign service providers access to markets under stable conditions; the countries would gain in terms of output and employment growth in services and cheaper and better-quality services, thereby generating, also, positive welfare effects on the economy as a whole (G.Kemekliene&A.Watt, 2010).

Liberalization of trade can be based on three general approaches: Non – discrimination, mutual recognition or harmonization. These approaches can be supplemented by the application of a so-called necessity test. Non-discrimination requires that different services and service suppliers are treated no less favourably than like foreign or domestic service suppliers. However, non-discrimination does not require a country to accept regulatory standards applied by other countries. Mutual recognition requires this acceptance. Under system of mutual recognition, a service which is supplied in accordance with regulatory requirements of one country can also be supplied in another country without fulfilling the regulatory standards of the host country (K.Nikolaidis, 1996).

3.Objectives

The main objective of this article is to consider the effects that the GATS agreement brings to international trade with special emphasis on insurance and reinsurance services. By the end of this paper, the reader will be able to understand and evaluate through the main research questions and sub-questions, the importance of the main objectives of this paper, as follows:

- What is it and how does this agreement work, positive and negative implications to the insurance and reinsurance services, namely the capital inflow of large insurance and reinsurance companies from developed to

developing countries and increase the quality of these services and competitiveness on these countries which is now made possible or advanced these relations from the GATS agreement?

3.1. Research questions

- What is General Agreement on Trade Services and its function?
- What are positive and negative implications of General Agreements on Trade Services to Reinsurance Services?
- What is the impact of the General Agreement on Trade Services on the insurance industry in the Republic of North Macedonia?

4. Data and methodology

Methodology and data collection for this research paper is based on secondary data or archival records from WTO web page from specific documents: official annual reports, annual financial stability reports. This is based on the reasoning that this data archive consists of official information collected, processed and published by the certified authorities as the oversight body of the financial system in the world. Other used source of secondary data are annual reports published on websites of the largest insurance and reinsurance companies, such as Swiss re, Hanover Re, Munich Re, SCOR, Lloyd's and statistical and financial reports from Insurance Supervision agency of North Macedonia. Deductive approach is selected to deal with the problem because deductive approach involves formulation of objectives and their subjection to testing during the research process. In this paper we will use quantitative method that emphasizes objective measurement and statistical or numerical analysis of secondary statistical data.

The purpose of a study can be classified into two major categories; descriptive and explanatory. The selected method determines how the data are collected. Interviews, questionnaire, documentation, observations, standardized tests, archival records are some of the frequently used methods for data collection. According to Sekaran (1992), there are two categories of data; primary and secondary. Primary data are the ones that a researcher collects himself for a specific purpose or study. They are often collected through direct observations, surveys and interviews. Secondary data refers to the data that are collected by another researcher for another purpose or study; so, it is collected from external sources (Masum & Fernandez, 2008).

During the realization of this research in the function of determining the role of General Agreement on Trade in Services on Reinsurance, more statistical methods and techniques have been used which have produced substantial results. The level of development of the insurance market in North Macedonia has been measured by using the comparative analysis of statistical and financial data of companies published in the financial and statistical reports provided by the official data published by supervision insurance agency.

This was done by measuring the structure of share market divided on foreign and domestic by ownership companies, the structure gross written premium which goes to reinsurance and or coinsurance for Non-Life and Life Insurance results, substantially affected by the opening of the market and Macedonia's membership in the WTO, as well as being part of the General Agreement on Trade in Services.

5. Empirical data and analysis

5.1. What is General Agreement on Trade Services and its function?

The General Agreement on Trade in Services is a multilaterally agreed framework agreement for the trade in services which applies to all 148 WTO members. The General Agreement on Trade in Services is a relatively new agreement. It entered into force in January 1995 as a result of the Uruguay Round negotiations to provide for the extension of the multilateral trading system to services. All Members of the World Trade Organization are signatories to the GATS and have to assume the resulting obligations. In this capacity, they are committed, in accordance with Article XIX of the GATS, to enter the subsequent rounds of trade liberalization negotiations. The first such Round started in January 2000 and was integrated later into the wider context of the Doha Development Agenda (DDA). So, regardless of their countries policy stances, trade officials need to be familiar with this Agreement and its implications for trade and development. These implications may be far more significant than available trade data suggest. All WTO members are at the same time members of the GATS and, to varying degrees, have assumed commitments in individual service sectors¹⁰. The GATS apply in principle to all service sectors, with two exceptions. Article I (3) of the GATS excludes “services supplied in the exercise of governmental authority”. Furthermore, the Annex on Air Transport Services exempts from coverage measures affecting air traffic rights and services directly related to the exercise of such rights.

Among other specific terms the most important parts and articles or structure of this agreement is as bellow:

Part I - Scope and definition

Part II - General obligations and disciplines

- *Most-Favoured-Nation Treatment*
- *Transparency*
- *Disclosure of Confidential Information*
- *Increasing Participation of Developing Countries*
- *Economic Integration*
- *Labour Markets Integration Agreements*
- *Domestic Regulation*
- *Recognition*
- *Monopolies and Exclusive Service Suppliers*

¹⁰https://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm

- *Business Practices*
 - *Emergency Safeguard Measures*
 - *Payments and Transfers*
 - *Restrictions to Safeguard the Balance of Payments*
 - *Government Procurement*
 - *General Exceptions*
 - *Security Exceptions*
 - *Subsidies*
- Part III-Specific commitments
- *Market Access,*
 - *National Treatment,*
 - *Additional Commitments*
- Part IV progressive liberalization
- *Negotiation of Specific Commitments*
 - *Schedules of Specific Commitments*
 - *Modification of Schedules*
- Part V institutional provisions
- *Consultation*
 - *Dispute Settlement and Enforcement*
 - *Council for Trade in Services*
 - *Technical Cooperation*
 - *Relationship with Other International Organizations*
- Part VI Final provisions
- *Denial of Benefits*
 - *Definitions*
 - *Annexes*

The exceedingly complex structure of GATS reflects the multi-faceted nature of the services sector and the close links between “barriers to trade” and government regulation. Generally speaking, the same principles apply as with GATT¹¹:

- Most-favoured nation principle for all WTO members
- Non-discrimination between domestic and foreign suppliers (national treatment)
- Improvement of market access

Not excluding the importance of all other articles of this agreement, in the following we will specify the content of the two articles, Part I Article II from general commitments and Article X VI from Part III of this agreement from specific commitments which are entirely substantive within this agreement.

Part I - Article II: Most-Favored-Nation Treatment

1. With respect to any measure covered by this Agreement, each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment no less favourable than that it accords to like services and service suppliers of any other country.
2. A Member may maintain a measure inconsistent with paragraph 1 provided that such a measure is listed in, and meets the conditions of, the Annex on Article II Exemptions.

¹¹<https://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/2069.pdf>

3. The provisions of this Agreement shall not be so construed as to prevent any Member from conferring or according advantages to adjacent countries in order to facilitate exchanges limited to contiguous frontier zones of services that are both locally produced and consumed.

Part III- Article X VI: Market Access

1. With respect to market access through the modes of supply identified in Article I, each Member shall accord services and service suppliers of any other Member treatment no less favourable than that provided for under the terms, limitations and conditions agreed and specified in its Schedule¹².
2. In sectors where market-access commitments are undertaken, the measures which a Member shall not maintain or adopt either on the basis of a regional subdivision or on the basis of its entire territory, unless otherwise specified in its Schedule, are defined as:
 - (a) limitations on the number of service suppliers whether in the form of numerical quotas, monopolies, exclusive service suppliers or the requirements of an economic needs test;
 - (b) limitations on the total value of service transactions or assets in the form of numerical quotas or the requirement of an economic needs test;
 - (c) limitations on the total number of service operations or on the total quantity of service output expressed in terms of designated numerical units in the form of quotas or the requirement of an economic needs test¹³;
 - (d) limitations on the total number of natural persons that may be employed in a particular service sector or that a service supplier may employ and who are necessary for, and directly related to, the supply of a specific service in the form of numerical quotas or the requirement of an economic needs test;
 - (e) measures which restrict or require specific types of legal entity or joint venture through which a service supplier may supply a service; and
 - (f) Limitations on the participation of foreign capital in terms of maximum percentage limit on foreign shareholding or the total value of individual or aggregate foreign investment.

The main objective of the GATS is to provide a framework of commonly accepted rules and disciplines governing WTO Members' trade in services and to achieve progressively higher levels of liberalization of trade in services, including

¹²If a Member undertakes a market-access commitment in relation to the supply of a service through the mode of supply referred to in subparagraph 2(a) of Article I and if the cross-border movement of capital is an essential part of the service itself, that Member is thereby committed to allow such movement of capital. If a Member undertakes a market-access commitment in relation to the supply of a service through the mode of supply referred to in subparagraph 2(c) of Article I, it is thereby committed to allow related transfers of capital into its territory.

¹³Subparagraph 2(c) does not cover measures of a Member which limit inputs for the supply of services.

financial services, through periodic rounds of multilateral negotiations. The GATS apply in principle to all measures (irrespective of the government-level at which they are being enacted) affecting trade in all services supplied through four modes of supply¹⁴: cross-border; consumption abroad; commercial presence and presence of natural persons. The GATS contemplate two types of consultations: bilateral and multilateral.

The GATS approach has been formulated to take account of the nature of services, and the fact that services supply takes various forms. Four “modes” of service supply are defined in the GATS on the basis of the origin of the service-supplier and consumer, and the degree and type of territorial presence that they have at the moment the service is delivered. These four modes are (ABI, 2020)¹⁵:

1. Cross-border: where the service supply takes place from the territory of one member into that of another. Only the service itself crosses the border, without the movement of persons.
2. Consumption abroad: this relates to services consumed by nationals of a member, in the territory of another member where the service is supplied. Essentially, the service is supplied to the consumer outside the territory of the member where the consumer resides.
3. Commercial presence: where the service-supplier crosses the border to have a “commercial presence” abroad through which the service is provided. This presence can take the form of any type of business or professional establishment, including incorporation, branch, representative office, joint venture, and so on.
4. Presence of natural persons: this mode applies to natural persons only, when they stay temporarily in the market, for the purpose of supplying services, for example, as employees of service-suppliers.

The GATS distinguish between four “modes” through which services can be traded. As information below shows, the four modes might be compared to the means by which goods are exchanged: exports (mode 1); movement of consumers (mode 2); FDI, called “commercial presence” (mode 3); and movement of service providers (mode 4). These four modes of supply allow countries to specify any restrictions that they wish to make on their voluntary (or “positive”) commitments on market access and national treatment (OECD, 2002).

¹⁴https://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm

¹⁵The Association of British Insurers is the trade association for the United Kingdom’s insurance industry. It represents around 400 companies, accounting for over 95 per cent of the business of United Kingdom insurance companies. They provide all kinds of insurance in Britain and worldwide, including savings, pensions and life insurance, as well as motor, household and health insurance. The United Kingdom has the largest insurance market in the European Union and the third largest in the world (after the United States and Japan). Nearly a quarter of United Kingdom insurance companies’ net premiums is derived from outside the United Kingdom. https://unctad.org/system/files/official-document/ditctncd20074_en.pdf

Table 1: The four modes for reinsurance services

Mode	Definition	Examples for Reinsurance Services
Mode 1: Cross-border	Where the service supply takes place from the territory of one member into that of another. Only the service itself crosses the border, without the movement of persons.	<p>A German or French insurance company transfers an insurance amount (risk) over the level of retention¹⁶ through electronic communication to a reinsurance company in Switzerland in this case, for example to Swiss Re. Regardless of what form of reinsurance (Raim & Langford, 2007):</p> <ol style="list-style-type: none"> 1. Treaty Reinsurance¹⁷ <ol style="list-style-type: none"> a) Pro rata Reinsurance¹⁸ b) Excess of Loss Reinsurance¹⁹ 2. Facultative Reinsurance²⁰

¹⁶“Retention,” the amount of loss the cedent keeps for its own account, is a reinsurance term roughly analogous to a deductible under an insurance policy.

<https://www.treasury.gov/initiatives/fio/reports-and-notice/Document/FIO%20-%20Reinsurance%20Report.pdf>

¹⁷A reinsurance treaty is a standing reinsurance agreement; in exchange for an agreed premium, the treaty covers a class of insurance risks specified in the contract. Typically, the “cession” of the reinsured business by the cedent and the assumption of that business by the reinsurer are obligatory pursuant to treaty terms. That is, under treaty reinsurance premium and losses associated with the covered risks are automatically covered by the agreement to be transferred to one or more reinsurers—the reinsurer does not analyze the reinsured business on a policy-by-policy basis before accepting the risk cession: <https://www.treasury.gov/initiatives/fio/reports-and-notice/Document/FIO%20-%20Reinsurance%20Report.pdf>

¹⁸For risks subject to a pro rata treaty, the insurer and reinsurer share premiums and exposures to losses in an agreed proportion. Pro rata reinsurance has the advantage of simplicity in design and administration, but may come at a relatively high cost to the cedent in terms of underwriting income and total return (as compared to excess of loss reinsurance). This form of reinsurance is particularly suited to addressing a cedent’s need to ensure it has sufficient surplus for the business that it wishes to write, and is useful when a cedent is entering or exiting lines of business. Pro rata reinsurance treaties may be further classified as either “quota share” or “surplus share.”

<https://www.treasury.gov/initiatives/fio/reports-and-notice/Document/FIO%20-%20Reinsurance%20Report.pdf>

¹⁹In contrast to pro rata reinsurance, excess of loss reinsurance is a form of protection against insured losses sustained above a predetermined and stated threshold, known as the cedent’s “retention,”³⁹ and thus does not create a proportional sharing of risk. A reinsurer also may require a cedent to co-participate for a portion of losses above the retention so that the cedent has additional “skin in the game.” Under excess of loss reinsurance, a cedent may choose to purchase coverage attaching at high levels of loss, thereby obtaining protection for a relatively modest premium. By indemnifying the insurer for losses above a specified level, excess of loss treaties help stabilize the net losses (i.e., after reinsurance recoveries) in an insurer’s portfolio. Excess of loss treaties generally take one of three forms: “per occurrence” excess of loss, “aggregate” excess of loss, or “per risk” excess of loss: <https://www.treasury.gov/initiatives/fio/reports-and-notice/Document/FIO%20-%20Reinsurance%20Report.pdf>

²⁰ Unlike treaty reinsurance, facultative reinsurance does not result in an automatic cession of risk by the cedent, nor an automatic acceptance of risk by a reinsurer. Instead, facultative reinsurance

Mode 2: Consumption abroad	This relates to services consumed by nationals of a member, in the territory of another member where the service is supplied. Essentially, the service is supplied to the consumer outside the territory of the member where the consumer resides	A citizen from Kosovo travels to a European country or in any other country of the world obtains a travel health insurance policy in Kosovo in one of insurances companies that has reinsured, for example to Mondial or Coris companies and the client will receive the service in another country from the country in which he purchased the service.
Mode 3: Commercial presence	Where the service-supplier crosses the border to have a “commercial presence” abroad through which the service is provided. This presence can take the form of any type of business or professional establishment, including incorporation, branch, representative office, joint venture, and so on	We have the case of the European insurance and reinsurance company UNIQA group Austria from Austria which has opened its branches in Kosovo, Albania and North Macedonia to provide its insurance services or reinsurance service in the local country where it has opened the branch.
Mode 4: Presence of natural persons	This mode applies to natural persons only, when they stay temporarily in the market, for the purpose of supplying services, for example, as employees of service-suppliers.	If an architect from a large Swiss design company travels to the United States to contract, design, and implement a project, US urban planning authorities require a professional liability insurance policy that can give Switzerland a new lease of life and assume liability his professional project for America. In this case the indemnity can be made either by the central company in Switzerland or its

permits an insurer to decide which specific insured risks will be submitted to a reinsurer for consideration. Upon such submission, the reinsurer has the opportunity to underwrite the individual risk, and may elect to accept or decline such risk. Facultative reinsurance may create greater administrative burdens on both cedents and reinsurers because potential risk cessions must be analyzed on an individual basis rather than in advance as a book of business. As with treaty reinsurance, facultative reinsurance may be structured as either excess of loss or pro rata, depending upon the needs of the cedent. Though insurers have a variety of reasons for using facultative reinsurance, it is generally purchased for large or unusual risks, which may be wholly or partially outside the scope of a cedent’s treaty arrangements:
<https://www.treasury.gov/initiatives/fio/reports-and-notice/Document/FIO%20-%20Reinsurance%20Report.pdf>

		branch in America. Or the case when from Swiss re Switzerland company, a Claim valuation expert goes to America to evaluate hurricane dams on properties.
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Source: Author

The GATS Financial Services section 5 of the Annex applies to “all insurance and insurance-related services, and all banking and other financial services (excluding insurance).” The Annex defines insurance services as follows:

- (1.) Direct insurance (including co-insurance): (A.) life (B.) non-life
- (2.) Reinsurance and retrocession;
- (3.) Insurance intermediation, such as brokerage and agency;
- (4.) Services auxiliary to insurance, such as consultancy, actuarial, risk assessment and claim settlement services.²¹

The GATS have an admittedly wide scope. It applies to all measures by WTO Members affecting trade in services. Services include any service in any sector, including financial services, but excluding the so-called “services supplied in the exercise of governmental authority. (Barth&Marchetti&Nolle, 2006)”. Financial services have been defined in the GATS as including any service of a financial nature offered by a financial service supplier, including all insurance and insurance-related services (direct insurance, reinsurance, insurance intermediation, and auxiliary insurance services), as well as all banking and other financial services (deposit taking, lending, financial leasing, asset management, trading in securities, and financial advice). The measures to which the agreement applies are those taken not only by central governments (or its regulatory agencies) but also by sub federal governments or regulatory agencies (at provincial or state level) or non-governmental bodies exercising regulatory powers delegated by government (securities or future trade exchanges). Despite its wide scope and all-encompassing nature, the GATS contain different layers of obligations²²:

1. The first layer consists of all those general obligations that bind all WTO Members regardless of whether they have agreed to undertake market access commitments for a certain sector or not. The most important of these obligations is the Most Favored Nation principle (MFN), which makes it mandatory for every WTO Member to treat services and service suppliers of any other WTO Member no less favourably than it treats like services and service suppliers of any other country. In other words, the MFN principles impose the obligation not to discriminate among foreign services and service suppliers.
2. The second layer of obligations consists of the specific commitments made by WTO Members to grant market access and national treatment to

²¹WTO, GATS, Annex on Financial Services, “Definitions,” section 5(a), at https://www.wto.org/english/tratop_e/serv_e/10-anfin_e.htm

²² https://www.wto.org/english/tratop_e/serv_e/gatsqa_e.htm

services and service suppliers of other WTO Members. In fact, there is no explicit obligation to grant access to foreign suppliers or to accord them national treatment. WTO Members are free to decide which financial services will be subject to market access and national treatment disciplines.

3. The level of market access and the extent of national treatment obligations are included in national schedules. Commitments on these two principles – market access and national treatment – are entered into with respect to each of the four modes of supply. For example, a WTO Member will be subject to market access and national treatment obligations with respect to deposit-taking services only if it has included that service in its schedule, and to the extent provided therein.
4. The existence of specific commitments on market access and national treatment triggers a third layer of obligations concerning the notification of new measures that have a significant impact on trade; the reasonable, objective and impartial administration of measures of general application; and the avoidance of restrictions on international payments and transfers for current international transactions and, eventually, on capital transactions. Like any other trade agreement, the GATS contain exception provisions, which allow WTO Members to depart from their obligations or commitments under the agreement in very specific circumstances.

5.2. Assessing positive and negative implications of GATS on Reinsurance Services

In February 1997, the WTO intermediate the agreement in order for countries to accept the opening of their telecommunications and financial services markets to competition, allowing foreign operators to buy ownership shares in national telecommunications providers. Under the agreement, which entered into force in early March 1999, 102 countries pledged to open their banking, securities and insurance sectors to varying degrees (Hill&Hult, 2017).

The opening of places for the services market in the impact of the rules set by GATS also affects the insurance segment and reinsurance, either through the movement of capital and foreign direct investment, or through the opening of the market for the transfer of risks in different countries to large reinsurance companies in countries with developed economies. Either through the presence of foreign direct investment or through the transfer of risk to large reinsurance companies, the local economy is affected.

The insurance sector is an infrastructural pillar of the financial services sector and the economy as a whole. It plays a key role in economic development. Several empirical studies suggest a strong correlation between the development of financial intermediaries and economic growth (Mashayekhi&Tuerk, 2010). “According to Patrick there are two, possibly coexisting, relationships between the financial sector and economic growth. The first is the case where the financial sector has a supply-leading relationship with growth, and where economic growth can be induced through the supply of financial services. The second is a demand-

following relationship where the demand for financial services can induce growth of financial institutions and their assets. Developing countries have supply-leading patterns of causality of development and have considered locally incorporated insurance institutions or State-owned monopolies an essential element of economic development” (Patrik, 1966).

Positive implications

Liberalization of trade in services market creates the possibility that the capital of insurance and reinsurance industry extends to countries where barriers to this segment existed. The positive impact of insurance companies’ capital either through direct investment in less developed or developing countries directly affects the economic development of the country. While reinsurance through business risk transfer also effectively affects the creation of stable business development and climate for investment security.

GATS have three main objectives:

- a) To progressively liberalize trade in services,
- b) To encourage economic growth and development
- c) To increase the participations of developing countries in world trade in services.

In this context, after the GATS agreement in different developing countries we have capital movements of insurance companies or large reinsurer groups through the presence of their branches in the respective countries, a movement which will be considered as a positive impact.

Reinsurance helps economic development and stimulates the functioning of free trade through its financial intermediation function through following points (Cooke, 2007):

- Reinsurance of goods in transport and liability in services
- Reinsurance facilitates business
- Reinsurance promotes financial stability and security at both the national and business levels
- Reinsurance facilitates international merchandise trade
- Reinsurance provides risk management services.
- Reinsurance offers risk management through risk pooling
- Reinsurance encourages technical methods of reducing risk
- Reinsurance mobilizes companies’ savings.
- Reinsurance plays a key role in fostering efficient allocation of capital and economic resources.

It is of course entirely possible to liberalize an insurance market without reference to the GATS: indeed, most OECD countries had advanced far along the path of liberalization well before the advent of the GATS in 1994. But the GATS offer a number of practical advantages, both to the country concerned and to participants in the sector in question. In particular it offers (ABI, 2020):

- Reference principles and rules, concerning market access for foreign market entrants and non-discriminatory equality of treatment (“national treatment”) once the market has been entered;

- A system of binding commitments which allows a Government to augment domestic reforms (designed to encourage growth and development) with international undertakings to maintain its level of liberalization;
- A standard of comparison by which the degree of liberalization in different markets can be compared;
- A negotiating process, allowing Governments the reassurance that negotiated liberalization will maintain a degree of parity between trading partners;
- A clear system of liberalization undertakings in a framework that is understood by commercial enterprises, providing business with a guarantee that commitments, once scheduled under GATS, will not be rescinded.

The impact of sharing services on employment: commercial presence in sharing services can benefit developing countries by:

- generating additional resources for investment in and upgrading system, infrastructure and technologies,
- generating opportunities for employment,
- reducing unemployment of qualified personnel,
- providing specialized and specific services, and
- mode 4 - Presence of natural persons (this mode applies to natural persons only, when they stay temporarily in the market, for the purpose of supplying services, for example, as employees of service-suppliers).

In services like insurance, transport, and telecommunications, many developing countries are increasingly becoming important destination markets for investment, due mainly to their huge capital and technology requirements in these areas (Chanda, 2002). Services output and employment have also witnessed rapid growth in developing countries during the past two decades. In some developing countries, services today constitute over 50 per cent of economic activity, significantly more than traditional sectors such as agriculture (Chanda, 2002).

Negative implications

There are several criticisms that have been levelled at the GATS, mostly by non-governmental organizations, consumer and public interest groups. These concerns are highly interrelated and mostly centre around issues of national autonomy and sovereignty, the likely adverse effects of liberalizing services, and the trade-offs between commercial interests and efficiency type considerations on one hand and social, developmental, and equity goals on the other. Some of the main criticisms are highlighted below. These are by no means exhaustive but are illustrative of the key issues and concerns raised about the GATS (Chanda, 2002):

- “Corporate takeover” of services
- Extensive coverage of domestic regulations
- Extensive coverage of services and ambiguities in scope
- Alternative to Multilateral Agreement on Investment
- Curbs on public subsidies, government procurement, and delivery systems
- Asymmetric liberalization

Critics of new GATS negotiations are mostly from the OECD area, assert that more open markets will bring about a myriad of undesirable outcomes. Most of their claims and concerns can be classified as follows (OECD, 2002)²³:

- Liberalization will reduce the availability, increase the costs, threaten the quality or skew the distribution of social services such as health and education or vital utilities such as electricity and water.
- Unlimited entry of cultural products such as films, television programmers and music will undermine, displace and marginalize indigenous cultures.
- Giant multinational corporations will be the only real beneficiaries of open services markets, and the GATS will give them the means to overwhelm both their smaller competitors, especially in developing countries, and the regulatory powers of national governments and provider of services.

There are two group of authors classified for the negative implications of GATS:

- The first consists of concerns, which are really not well founded and are based on misconceptions/insufficient understanding of the GATS framework.
- The second consists of concerns that are genuine and merit further analysis and call for actions to modify the existing GATS framework and provisions to further the realization of both equity and efficiency objectives in the service sector (Chanda, 2002).

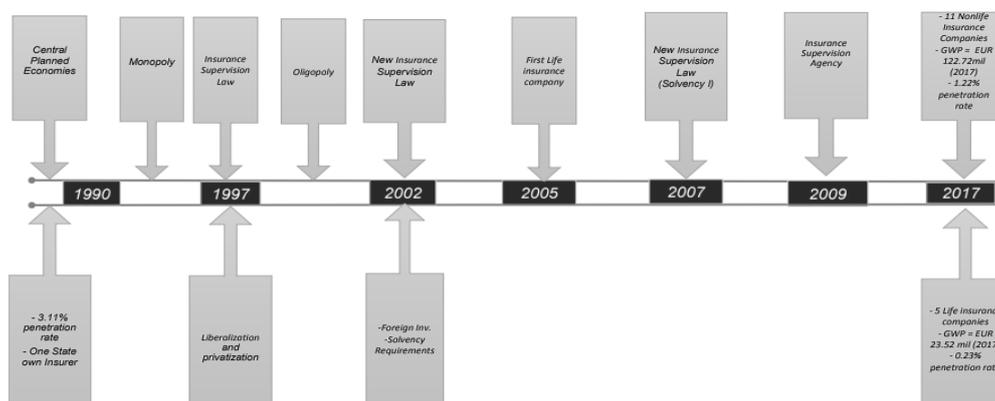
Political risk is blocking reinsurers' best efforts to push back the frontiers of insurability, says Denis Kessler, Chairman and CEO of SCOR in an article published in Reactions (Kessler, 2018).

The biggest concern about the negative implications of GATS in services in general but also in insurance and reinsurance services is that:

- It will force developing countries to open up all service sectors and, in this respect, also insurance market to foreign competition and
- Compel them to privatize and deregulate services.
- Another negative impact is the fact that the insurance industry is shifting towards a dominance of foreign capital alongside domestic capital and,
- Transfer of market risk in parallel with the transfer of premium to reinsurers in accordance with reinsurance agreements.

It is incorrect to equate the GATS with the multilateral agreement on investment simply because commercial presence is included as one of the 4 modes of supply. Countries are free to leave this mode unbound in their schedules or to limit any commitments made under this mode via foreign equity restrictions, stipulations on the type of legal entity, quantitative limits, and discriminatory conditions concerning employment, subsidies, and taxes (Chanda, 2002).

²³ OECD 2002 GATS: The Case for Open Services Markets (<https://www.oecd-ilibrary.org/docserver/9789264196452en.pdf>)



5.3. Impact of the GATS in the insurance industry in Republic of North Macedonia

North Macedonia has been a member of WTO since 4 April 2003. The process of fulfilling the conditions of membership lasted from 1994 to 2003 when North Macedonia it became a full member as 146th Member. Analyzing the development trend of the insurance industry in North Macedonia and all other countries of the western Balkans the situation is quite descriptive if we quote the authors (Pervan & Ćurak & Poposki, 2014) with the statement: “Macedonian insurance industry can be described as small and underdeveloped, but with a high potential for further growth and development. Main characteristics of the latest development trends in this industry can be summarized as follows: the high level of harmonization of the national insurance regulation with the EU insurance directives and the international insurance core principles and standards, dominantly foreign ownership and control over the domestic insurance undertakings, favorable market concentration, growing competition, accelerated growth rate of life insurance, innovation and design of new products”. The share of insurance in the financial sector in Republic of North Macedonia was 3.5% in 2017 (Osmani & Imeri, 2018).

The situation in all other western Balkan countries is almost similar with some specifics. With initiative of World bank project - Southeastern Europe Catastrophe Risk Insurance Facility (SEEC CRIF) to promote development of the catastrophe and weather risk insurance market in the region on 2013 has been established – reinsurance company Europa Reinsurance Facility Ltd. (Europa RE) formed in state ownership of Macedonia, Serbia and Albania (K. Poposki, 2018). To better analyze the developments in the insurance sector and also the impact of the general agreement on trade in services in Republic of North Macedonia we will present the following scheme by K. Poposki presented on November 15, 2018, Frankfurt, Germany:

Figure 3: Insurance milestone in North Macedonia

Source: Klime Poposki PHD (15th Talk on Insurance and Regulation); (Insurance Market and Regulatory Developments in the western Balkan Countries –

Challenges and Perspective) Goethe University Frankfurt International Centre for Insurance Regulation (ICIR). Frankfurt, November 15, 2018

By analyzing the scheme which presents the events in this sector, we can easily see that after Macedonia's full membership in the WTO in 2003 and at the same time being part of the GATS agreement, we have the entrance of the first Life Insurance Company in this sector in 2005, then new supervision law was adopted on 2007 which aimed to reach the high level of harmonization of the national insurance regulation with the EU insurance directives and the international insurance core principles and harmonization with the EU directives within the Solvency I regime. The Law incorporates the provisions of the First, Second and Third EU Insurance Directive, the Directive 77/92/EEC with regard to the insurance intermediaries as well as Directive 64/225/EEC with regard to reinsurance and retrocession. All this is followed by the establishment of Insurance Supervision Agency in 2009 and in the following we will present the structure of share market to the insurance industry of North Macedonia for:

- Ownership structure,
- non life insurance,
- life insurance,
- percentage of premium which goes to reinsurance and/or coinsurance from non life and
- percentage of premium which goes to reinsurance and/or coinsurance from life insurance

Figure 4: Ownership structure of the insurance companies- North Macedonia

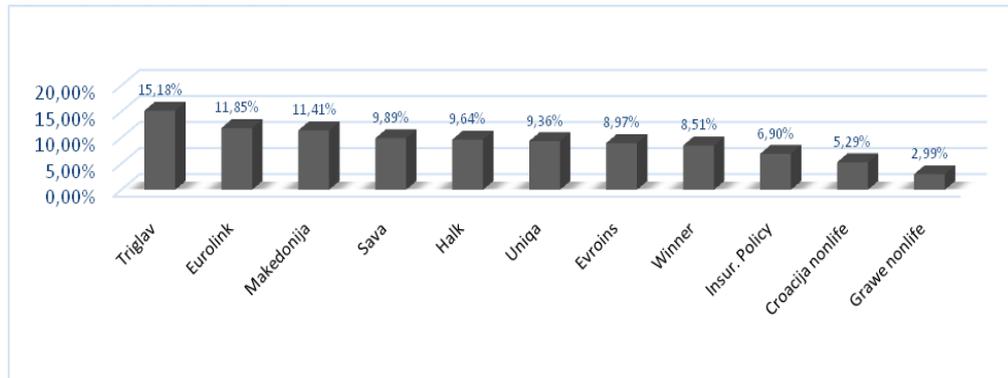


Source: National insurance supervisory agencies- North Republic of Macedonia

The situation created by the entry of companies with foreign capital in the insurance market in North Macedonia mainly from 2005 onwards after the opening of the market to foreign investors, WTO membership and the impact of the GATS agreement, is most of the market share of this industry is owned by foreign capital. Insurance companies are predominantly owned by foreign legal entities in the financial sector (79.51%), which are partially or fully present in 14 out of 16 insurance companies on the market in total. Twelve (12) insurance

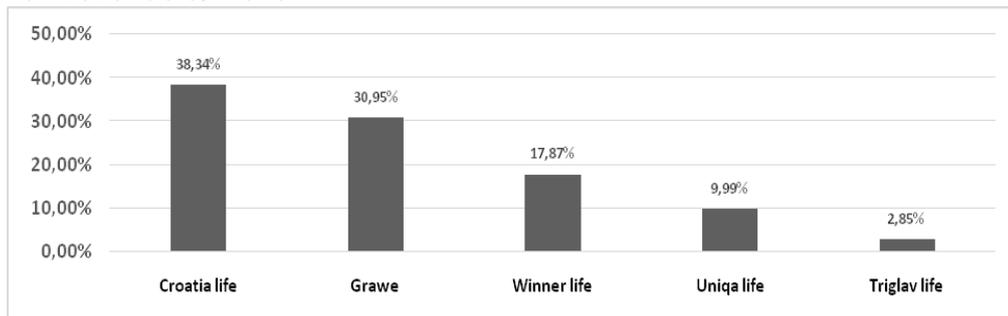
companies are part of insurance groups based in EU member states, while two insurance companies are fully owned by domestic investors.

Figure 5: The structure of share Market Non-Life Insurance in Republic North Macedonia
01.01.2020- 30.09.2020



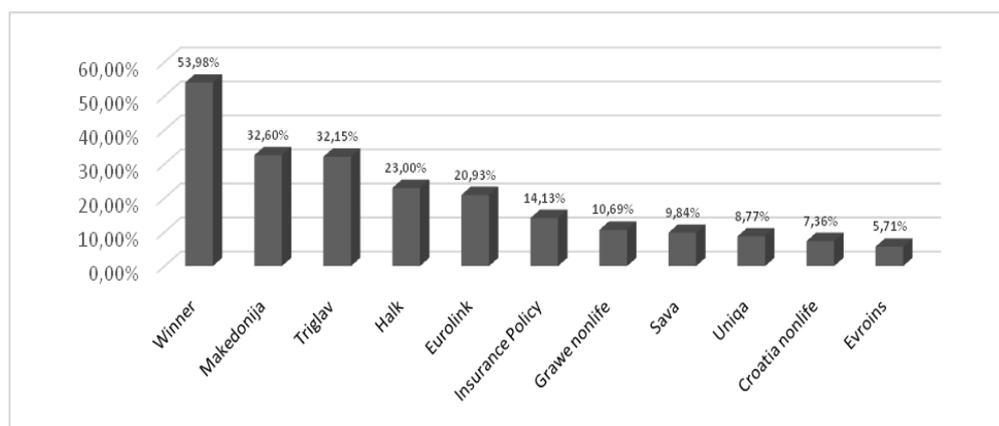
Source: National insurance supervisory agencies- North Republic of Macedonia

Figure 6: Share market Life Insurance in Republic of North Macedonia
01.01.2020- 30.09.2020



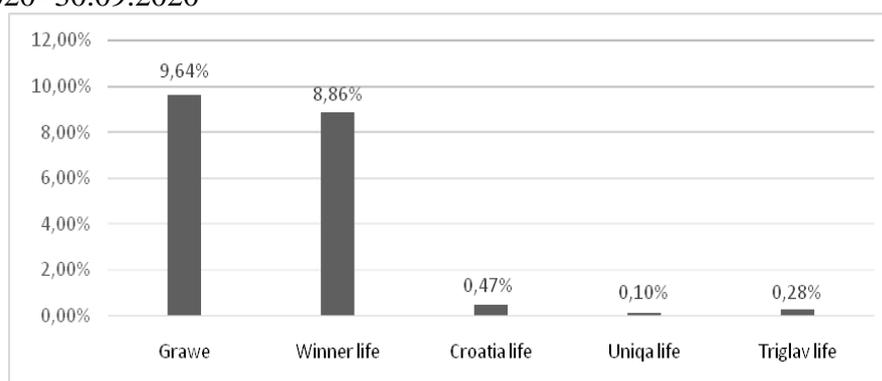
Source: National insurance supervisory agencies-North Republic of Macedonia

Figure 7: Percentage of Premium and risks which goes to Reinsurance and/or coinsurance
from Non-Life Insurance Market in Republic of North Macedonia
01.01.2020- 30.09.2020



Source: National insurance supervisory agencies- North Republic of Macedonia

Figure 8: Percentage of premium and risks which goes to reinsurance and/or coinsurance from Life Insurance Market in Republic of North Macedonia 01.01.2020- 30.09.2020



Source: National insurance supervisory agencies – North Republic of Macedonia

This situation has brought a number of advantages to this industry and is providing a direct impact on the economy even through risk share or transfer to large reinsurance companies from local businesses and local companies, is increasing the opportunity for businesses to operate with greater security and to create new jobs.

This situation has brought some of the following implications, whether positive or negative:

- New insurance products
- Increase in numbers and market share of foreign insurance groups
- Increase in numbers of highly educated insurance specialists
- Complete insurance legal framework (laws) harmonized with the international insurance core principles and standards
- Continued development of actuarial profession
- Cooperation and participation in projects with international organizations in the field of insurance
- Reduced market concentration

- Increased awareness among insurance companies for financial education of the clients
- Unfair competition expressed through breach of the existent tariffs of insurance premium with a goal of increasing the sale and market share, and
- very large dominance of capital by foreign owners

There is no obligation for any country to schedule a sector which it is not prepared to open to foreign competition or to guarantee domestic competition. Countries have the right to retain public or private monopoly in any service sector. Moreover, even if a country chooses to schedule a sector, it can be selective about the activities and sub-sectors it commits. Even for these chosen activities/sub-sectors it can be selective about the modes it wishes to commit on, the form in which it makes these commitments, and the kinds of limitations/conditions to which it subjects these commitments, along with retaining the discretion of taking MFN exemptions. Governments have a lot of discretion in the scheduling process based on their assessment of the potential costs and benefits of granting more liberal market access and national treatment in any sector. Moreover, countries can also renegotiate their commitments by withdrawing or modifying them. Exceptions can also be invoked under Article XIV of the GATS to protect public interests (GATT/WTO, 1998). The following is a scheme of commitments and concessions schedule by sector and sub-sector, for the example of North Macedonia:

Table 2: Final List of Article II (MFN) Exemptions- North Macedonia Example

Sector or subsector	Description of measure indicating its inconsistency with Article II	Countries to which the measure applies	Intended duration	Conditions creating the need for the exemption
Real estate and Land All Sectors	<p>Foreign natural persons may by inheritance obtain a right to ownership of real estate and land on the territory of FYROM, under condition of reciprocity.</p> <p>Foreign legal persons may, under condition of reciprocity, obtain a right to ownership of real estate and land on the territory of FYROM through inheritance, on the basis of a testament.</p> <p>A foreign natural person may, under condition of reciprocity, obtain a right to ownership of a flat or a building in FYROM.</p> <p>A foreign natural person may, under condition of reciprocity, obtain a right to ownership and right to a long-term lease of business premises on the territory of FYROM.</p> <p>A foreign natural or legal person may, under conditions of reciprocity, obtain a right to a long-term lease of building land for construction of business buildings and premises and apartment buildings and apartments on the territory of FYROM.</p> <p>Building land can be owned by domestic natural and legal persons only. Foreign natural and legal persons are only permitted to acquire long-term leases of no more than 99 years.</p> <p>A foreign natural or legal person may, under conditions of reciprocity, obtain a right to long-term lease of agricultural land on the territory of FYROM.</p>	All countries	Indefinite	Requirements of bilateral and regional commitments.

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Sector or subsector	Description of measure indicating its inconsistency with Article II	Countries to which the measure applies	Intended duration	Conditions creating the need for the exemption
Legal Services (excluding consultancy on home country, foreign and international law)	Legal services of foreign suppliers may be provided on the basis of reciprocity.	All countries	Indefinite	Reciprocal coordination of the legal profession within the overall regional development of judicial and administrative institutions.
Audiovisual Services - Production and distribution of cinematographic works and television programmes	Measures based upon government-to-government framework agreements, and plurilateral agreements, on co-production of audiovisual works, which confer national treatment to audiovisual works covered by these agreements, in particular in relation to distribution and access to funding.	All countries with whom cultural co-operation may be desirable.	Indefinite	The aim of these agreements is to promote cultural links between the countries concerned.
Audiovisual services - Production and distribution of audiovisual works through broadcasting or other forms of transmission to the public	Measures which define works of European origin in such a way as to extend national treatment to audiovisual works which meet certain linguistic and origin criteria regarding access to broadcasting or similar forms of transmission.	European countries	Indefinite	The measures aim, within the sector, to promote cultural values both within EC Member States, and with other countries in Europe, as well as achieving linguistic policy objectives.
Audiovisual Services - Production and distribution of television programmes and cinematographic works	Measures granting the benefit of any support programmes (such as Action Plan for Advanced Television Services, EURECA Audiovisual, MEDIA or EURIMAGES) to audiovisual works, and suppliers of such works, meeting certain European origin criteria.	European countries	Indefinite. Exemption needed, for certain countries, only until an economic integration agreement is concluded or completed.	These programmes aim at preserving and promoting the regional identity of countries within Europe which have long standing cultural links.
Educational Services	Preferences may be extended in implementation of student exchange programs, for visits by educators, and for educational institutions in order to promote cooperation in cultural exchange.	All countries	Indefinite	The requirement for particular international participation in the development of general and specialized educational programs, including special regional or international programs.

Sector or subsector	Description of measure indicating its inconsistency with Article II	Countries to which the measure applies	Intended duration	Conditions creating the need for the exemption
CRS and sales and marketing of air transport services	The obligations of CRS system vendors or of parent and participating air carriers shall not apply where equivalent treatment is not accorded in the country of origin of the parent carrier or of the system vendor.	All countries where a CRS system vendor or a parent air carrier is located.	Indefinite	The need for the exemption results from the insufficient development of multilaterally agreed rules for the operation of CRS.
Road Transport Services	Measures applied under existing or future agreements with the governments of other countries offer favourable treatment.	All countries with which FYROM has agreements on road transport in force.	Indefinite	The need for exemption is linked to the region characteristics of the road transport services and to the necessity to regulate traffic rights in and across the territory of FYROM and between FYROM and the countries concerned.

Source: www.wto.org

Table 3: REPUBLIC OF NORTH MACEDONIA - SCHEDULE OF SPECIFIC COMMITMENTS

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Modes of supply: (1) Cross border supply (2) Consumption abroad (3) Commercial presence (4) Presence of natural persons			
Sector or Sub-Sector	Limitations on Market Access	Limitations on National Treatment	Additional Commitments
7. FINANCIAL SERVICES			
All sectors: A single legal person (insurance company or a bank) cannot provide both insurance and banking services. FYROM will conduct a review of the situation in the light of developments in the regulation of financial services sectors and will report whether this limitation can be abolished. Such a review will take place by 31 December 2008. Domestic and foreign bank or insurance company operating in FYROM may set up or acquire another legal person providing the other line of business subject to the following commitments.			
A. <u>Insurance and Insurance Related Services as defined in the "Annex on Financial services"</u>	1) None for reinsurance and retrocession, maritime and aviation insurance, insurance sold for transportation vehicles licensed for commercial purposes, services auxiliary to insurance, and brokerage for such services. Unbound for other insurance services. 2) None for reinsurance and retrocession, maritime and aviation insurance, insurance sold for transportation vehicles licensed for commercial purposes, services auxiliary to insurance, and brokerage for such services. Unbound for other insurance services. 3) Establishment of an insurance joint-stock company in FYROM is required. Branching will be allowed from 1 January 2008, or until such earlier date that FYROM allows it. No other forms of establishment are allowed until FYROM allows them. A foreign or domestic legal or natural person, other than an insurance company or a bank, may not hold more than 25% of stocks management rights in an insurance company. This requirement is valid until 1 January 2008 or until such earlier date that FYROM allows higher levels of stocks management rights. Thereafter, none.	1) None 2) None 3) None	

Source: www.wto.org

6. Summary and Concluding Remarks

- Analysing schedule of specific commitments on GATS for Republic of North Macedonia, sector or subsector, insurance and related services as defined in the Annex of Financial Services there is no limitation on market access regarding reinsurance and retrocession also no limitation on national treatment.
- Conclusion regarding result based on Mode1 cross border (where the service supply takes place from the territory of one member into that of another. Only the service itself crosses the border, without the movement of persons) is that 21.88 % or 1.38 mil of Non-life premiums and 4.77% or 56 thousand of Life Insurance premiums from total insurance portfolio during period 01.01.2020-30.09.2020 goes to reinsurance and/or coinsurance. Positive effects of being member of WTO and beneficiaries from GATS beside others are that there has been risk transfer; as a result, opportunities have increased for businesses as well as insurance companies.
- While regarding the findings we can conclude that the effects from Mode 2 Consumption abroad for the same period 01.01.2020-30.09.2020, have had symbolic percentage of only 1% of the gross written premium from the total of Non-life insurance portfolio in Republic of North Macedonia which belongs to the insurance product or line of business "Tourist's assistance", a premium written to take the risk for the clients who will receive their services abroad. Share of the premium together with

the risk is transferred to the reinsurance companies depending on the agreements with the reinsurers.

- With all the advancements that GATS bring, the entry of large insurance and reinsurance companies presents a major challenge for regulatory systems both domestically and in the international financial system. With or without commitments under GATS, greater entry of foreign insurance suppliers presents a major challenge to national and sub-national insurance regulatory systems. However, by analysing all of the above and taking it for granted, without a faster trend of economic development in general, in particular purchasing power or the amount of money that can be allocated to insurance, it cannot succeed in increasing the demand for voluntary insurance products and consequently in risk transfer or reinsurance as a service.
- Despite the opening of the market from North Macedonia and being part of the WTO and GATS agreement, the entry of companies with foreign capital, increased competition and raised level of services, which resulted in positive effects, we must again conclude that the share of the insurance industry in the financial system is only about 3.5% and approximately the same situation is in Kosovo which is not part of WTO (but has liberalized the entry of foreign capital investments in the insurance market) insurance industry participates with around 3% from structure of financial system, which means that it did not manage to create or increase a demand for insurance in both states, which is due to the fact that it is conditioned by the general economic development.
- The entry of foreign suppliers makes it more urgent for states to create an effective regulatory framework, and build capacity to enforce those regulations, for all kind of insurance and reinsurance in this sector.
- Creation of legal infrastructure is not enough, but it should be strengthened to build capacity to implement these laws and regulations in order to create a genuine and fair competition throughout the insurance industry. As a result of unfair competition large companies are reluctant to enter the market and even if they enter the market they risk leaving (It's case of the insurance groups and companies Croatia Osiguranje- Non-Life and also Grawe Group - Life and Non-Life) which after a few years are completely removed from the market in Kosovo. Even if we are part of the WTO and GATS and we are beneficiaries of the opportunities that this fact brings to the country and we have proper regulatory framework and legal infrastructure again large numbers of developing countries would have to make significant progress towards meeting the highest standards in terms of a country's risks components (political, economic and financial risks) which serious investors always analyze when deciding whether for foreign direct investment or, in particular, in the trade sector of services.
- The limitation of this paper is the lack of treatment of financial health and position of insurance companies with domestic capital in the Republic of North Macedonia after market opening and liberalization, the inflow of foreign investment in this sector, respectively the impact of the GATS

agreement, and analysis of the reasons why despite the inflows of capital and large European companies, it has not been possible to create a greater need for insurance, respectively to increase the demand. In order to address these two topics in more detail requires more research activity.

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IS IT POSSIBLE TO GET NEW INVESTORS BY
IMPROVING

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Abstract

Investor engagement is an important construct whose primary goal is to attract and retain investment and improve the relationship between shareholders and the company. The construction of investor engagement has been researched and extensively discussed in the economic literature. With that in mind, different perspectives emerge from successive waves of research, both extremes being possible positively as well as negatively. This thesis shows the possible measures within the constructions that can be used to convince investors. Further, the costs and opportunities of the activities undertaken through the investor engagement construction are examined in detail. The aim is to show whether the investor engagement construct is useful for promoting ESG investments and whether performance-only figures in the field of ESG investments are sufficient to obtain an investor on board. In order to achieve the formulated goal, the literature on the specific topic is analyzed in detail. The literature research served as a basis for a qualitative analysis of three renowned pillars of business. The analysis was performed under the following conditions. A research question is posed: Can investor engagement measures be used to persuade investors in ESG investments? Analysis of the results of previous research confirmed that opinions in the literature on the impact of investor engagement measures on the long-term relationship between shareholders and companies are converging. Larger investments in physical capital, improvement of human capital and reform efforts within the company, which affect the development of the share price can have a positive impact or the opportunity to be identified for companies. Another advantage would be the communication channels, which are also outside the legal minimum to be set between the company and the investor. They significantly contribute to the concerns of the company and investors, which significantly positively reflects on their long-term cooperation. Qualitative analysis showed that the range of efforts in the field of ESG, depending on the examined company are very pronounced. It was found that only the isolated figures in the field of ESG fail to positively affect the share price and accordingly it was not possible to find an investor who invested solely on the basis of ESG criteria.

Keywords : ESG, shareholder, Qualitative analysis ,human capital

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1. Introduction

"Money does not fall from the sky. You have to earn them here on earth", (Thatcher and Audio GO, 2011, p.23). This quote by Margaret Thatcher can be applied to almost any industry, because there is no business model that can generate profit from anything either in the real economy, or the stock market. Both approaches are subject to the scarcity paradigm, which means that the scarce resource, in this particular case money, should be used at as many levels as possible. (Kolmar, 2021, p.115). Efficient handling of one's own financial resources and ensuring the highest possible profit has always been of great importance. Then there comes a time when the invested money is required to add a charitable shade to its own portfolio. This can be seen in the field of ESG (Environmental, Sustainable and Governance) investments, which have experienced rapid growth and are continuously entering the mainstream of investing (Pathel, 2018, pp 26-45). In order for a company to be able to provide legitimacy to its shareholders today, it must have more than just a good balance sheet. On the one hand, investors want good compensation in the form of dividends, and on the other hand they want to know how these profits are generated from aspects of environmental conservation, social commitment and leadership. Investment Engagement Construct (IEK) is an approach to attract potential investors from ESG investments and convince them. IEK should create a framework so that investors can get a deeper insight into the business philosophy and to get a better picture of the effects of their investment, and if necessary can make a correction to them. In this way, proxy advisors who no longer work with institutional investors can also advise shareholders more effectively. This paper examines the measures within the IEK that are most commonly used in the theory. Then an empirical-qualitative analysis of the content is carried out, which is intended to improve the chances of success of such ESGI measures and to evaluate them in practice. The processing framework determines the following research question: Can investor engagement measures be used to attract potential investors from ESG investments and can they be convinced?.

2. Literature Review

In order to gain access to the capital market as a company, and thus competitiveness, it is necessary to ensure that ESG criteria are taken seriously. This reflects the importance of these criteria even though this information is not required by law. Based on these additional criteria, the existing and potential investor can create a better corporate image and does not base his assessment only on numbers in the financial sector. Therefore, it is essential for business: not only to set their own procedures in terms of costs and earnings, but investors must also understand the nature of returns from an ESG processing perspective. In order to attract the attention of investors, companies have different options as measures that are available and are shown below.

Measure 1: More detailed notes in the annual reports: Every company must submit an annual report to the outside world at least once a year, for public

companies, depending on the stock exchange on which the company is listed, there is also a quarterly report. Annual reports in recent years are much more detailed compared to annual reports earlier (Scheffer, 2019, p. 68).

Measure 2: Identifying types of investors and their influence: A company needs to know what type of investor invests its money and thus expects him to be compensated for the risk through profit sharing. Depending on the type and size of the investor the requirements to be considered vary. (Wassermann, 2011, pp. 52–55). It is also important to distinguish which time horizon an investor is aiming for in terms of investment duration.

Measure 3: Investment in intangible assets, research and development: Since companies cannot grow arbitrarily organically, they should try to use or acquire or participate in pioneering patents and technologies. (Kimell, 2017, pp.23-46).

Measure 4: Good reputation: The company should always try to maintain its reputation. This can already be done by hiring new employees. Employees are the main bearers of reputation. (Glassdoor Team, 2022). Another step can be quality management that will provide customers with products and services that fulfill their promises. It is even more important to take care of the customer after the sale and ensure that various channels are available for the customer to raise their concerns.

Measure 5: Humanitarian aid: Humanitarian aid is a necessary resource, especially for children in third world countries. Companies making profits in the billions could be pioneers in this area and signal that every working hour or sale includes humanitarian aid. (, 2022). In addition to hunger, several million people do not have access to clean water (Water for water, 2022).

2.1 Implementation of the measures

Companies have different measures to attract investors. Pure performance in terms of earnings and balance sheets is always the most important criterion when evaluating a company, but ESG criteria are increasingly in the focus of potential investors. Companies go by accounting standards much further than necessary and thus you have the opportunity to place their company among the ESG criteria.

Measure 1 indicated that it would be valuable if the company made more relevant figures available to potential and existing investors regarding its sustainability efforts. Creation costs increase in relation to the amount of information provided and both internal and external can be compiled. In both cases it has a high cost and the calculation is essential because of the mainstream to be able to keep up with the competition. The ability of this measure to convince investors can be quite high.

Measure 2 addressed the types of investors and their influence. It was determined that retail investors to institutional investors exist and have different needs. Institutional investors are more difficult to target because no one person is the decision maker. When an institutional investor is ready to invest, then he becomes long-term and sticks to the investment. The objective of the institutional investor is a reliable return over a long period, to provide a period of time that also does not involve any reputational risk. Another player among investors, who does not exert direct influence through investment, is the financial analyst. He can

influence the value of the share through his forecasts, which can also refer to ESG criteria.

Measure 3 shows the importance of intangible assets of research and development. Under certain circumstances, it can be a very large cost driver that can lead to an important signal for investors. It should signal the company's technologies and patents for itself through participations or acquisitions, and thus its competitiveness, can be maintained or expanded.

Measure 4 reflects the importance of a good reputation. This can have two positive effects. On the one hand, motivated employees are attracted who work more efficiently and serve customers better, and on the other hand, an increase in sales can lead to an increase in profits. Based on performance, this can motivate other investors to invest. Also the allocation of resources, which should be sustainable and save resources, serves a good reputation.

Measure 5 is a global project dealing with humanitarian aid. That would be the goal by incorporating humanitarian aid into everyday business, not only on a monetary basis here and with intangible projects and to be able to support people in need, but also to raise awareness in society in this area. The idea of conservation the resources for future generations can go to that level, to adapt, so the people of this era must also be helped. In comparison of the capital intended for setting up such projects, it shows the reputation of the company and its disproportionate increase.

3. Methodology

The methodology of the qualitative research was chosen through the analysis of published reports from the conducted activities. The analysis focuses on the sustainability efforts of the respective companies and their goals for the future. It is the purpose of the analysis to learn how companies plan to advance their efforts in these areas and how they have developed over the last few years in terms of ESG. In the analysis, there will be text and figures that will show the relationship on the subject of sustainability from the following companies: Nestle, Swatch and Apple. These companies will be tested for the same factors. There will be a summary for each venture. A content analysis has been conducted and inductive reasoning has been set. The data is analyzed and should help to form a statement regarding the centralization of ESG criteria in the context of IE and the chances of success, by increasing share prices. Transparency is ensured by openly communicating every step of the analysis. It should be subjectively perceived when presenting the data generated by the author, the same will be openly communicated and discussed. The range is provided by the checked content and at any time a third party can be reconstructed and arrive at the same results.

3.1 Evaluation

Qualitative analysis of the Swatch Group

When analyzing the Swatch Group, it is striking that the use of materials to generate the products is becoming more and more consistent. In addition, it has set

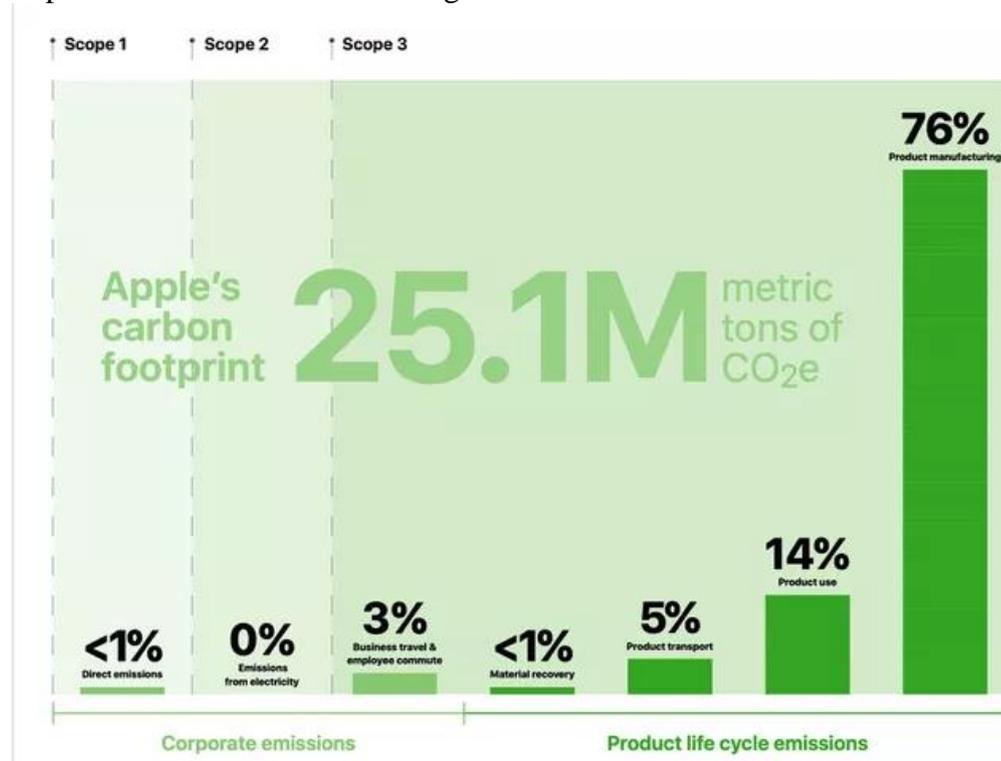
itself a climate goal of zero grams of CO₂ by 2050. For direct and indirect CO₂ emissions, the Swatch Group adheres to bands 1 and 2.

Various buildings and properties of the company were renovated to reduce heating costs and heat loss (Swatch Groupe, 2022).

Qualitative analysis of Apple

Most of the materials used by Apple have a higher level of recycled materials compared to the Swatch Group. The growing percentage of recycled materials at high percentages is on trend, for example with aluminum reaching 100%. In addition, the climate target of zero grams of CO₂ was already achieved in 2020, at its own production facilities, excluding the product range. The range of products should be completed by 2050 and reduced to zero grams. In direct and indirect CO₂ emissions, Apple considers both scopes 1 and 2. Emissions levels have been reduced by 67% by 2011. Suppliers must also comply with Apple's CO₂ requirements. The proportion of plastic in products fell from 14% to 4% between 2017-2021. A special trade-in program ensures that old devices are returned to Apple and properly recycled. The packaging of devices is constantly being developed to produce less waste. Also product development in the area of longevity and repair options are in progress so that devices can be used longer (Apple Inc., 2022).

Graph 1 – The norm of not emitting carbon dioxide



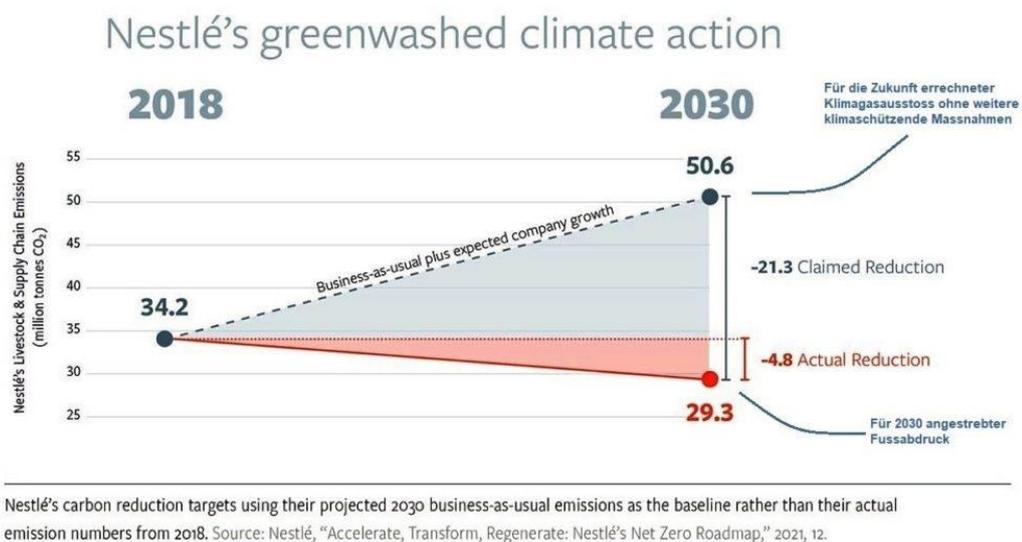
Source: Apple Promises to be Carbon Neutral by 2030 (www.treehugger.com)

A Qualitative Analysis of Nestle

The Nestlé company also focuses on the environment and also makes a great contribution in this area. Nestlé also wants to reduce CO₂ emissions to zero grams by 2030. Packaging is constantly evolving to reduce waste. Already today

we have a waste reduction of 50% to 97% of recyclable packaging. In package production, the transition to weather-related sowing led to a reduction in emissions. Nestlé also has internal environmental and social standards that are constantly updated and should be communicated to suppliers in the form of conditions. In addition, audits are carried out continuously to check whether suppliers comply with these standards. The emission of harmful gases has decreased by 67% since 2011. Nestlé also optimizes during the renovation of production buildings and real estate, as well as the machine parks that are part of these buildings. (Nestle AG Deutschland, 2021).

Graph 2: reduction of carbon dioxide in the nestle group



Source- Emissionen von Europas Fleischwirtschaft steigen - infospurber

Despite an in-depth review of ESG factors, causality between ESG and share price could not be confirmed. For this reason, the following theory is obvious: The share price does not depend or cannot be influenced by the company's efforts in the field of ESG criteria.

Conclusion

The previous analysis showed what efforts are being made by the three companies in the field of sustainability. The aim was to find out if it is possible to bring in new investors by improving the ESG criteria. As it has been proven, such a thing is not possible. Relevant criteria such as reducing heating oil costs or reducing CO₂ have no direct impact on the share price and no direct benefit to investors promoting them using IE. On the other hand, these efforts can directly affect costs, which in turn affect profits. This can also indirectly be an indicator of increasing the company's attractiveness from the point of view of potential investors and can in a certain period lead to new investments. Since expenses are a position in the income statement, the way it is classified can be seen as publicity through an annual sustainability report. This paper considered appropriate investor

engagement measures and simultaneously examined the costs they generate when using these and their potential for success. Considering the qualitative analysis and the examined factors in the field of ESG, the initially asked question which was the purpose of this research could not be fully answered or confirmed. The classification of the results succeeds only for the ESG criteria, but no clear results for investor engagement can be obtained, as no conclusions were drawn about the intent of the investors from the company's point of view. One reason for this is that there are many more criteria involved when it comes to an investment decision. It is not enough to only consider ESG criteria in isolation, but many other important factors should be taken into account during that decision. Much more in the future, this question can serve as a framework to use in quantitative research, to get a more precise answer and provide insight into the motivation behind each investment decision and to be able to schematically classify the results. An additional construct that may be helpful for further research may be the construct of public relations.

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List of abbreviations

FDFA- Federal Department of Foreign Affairs

HSG -University of St.Gallen -Switzerland

SDG Sustainable Development Goals

UN / UN- United Nations / Organization of the United Nations

ESG -Environmental, Sustainable and Governance

METHODOLOGICAL ISSUES IN MEASURING
COUNTRIES INFLATION

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Abstract

The paper intends to analyze the methodological aspects of inflation measurement through comparative analysis of three inflation measures, i.e. the strengths and weaknesses of certain inflation indicators. Besides to unemployment and economic growth, the problem of inflation is one of the three central problems in macroeconomic analysis. Inflation is a complex phenomenon and a serious disturbance of the stability of contemporary financial systems. The causal intertwining of the financial and real sector of the economy makes inflation an even more serious disturbance of the macroeconomic balance, and in that sense imposes the need to manage it as an imperative. But the number of economic categories and other factors that directly or indirectly affect inflation make some difficulties in its measurement, and imply a number of indicators through which its rate is determined and monitored.

The simplest determination of inflation as a general increase in the price level is an issue of interest for a number of entities and is subject to assessment, measurement and analysis by professional and scientific, but also political and business groups. Starting from the simplest explanation of the phenomenon of inflation as a condition in the economy when monetary (purchasing) funds exceed commodity funds, the key question refers to the indicators used to measure such a condition and their methodological processing. In conditions of strong inflation risk, the paper elaborates the most important methodological issues in measuring inflation in countries around the world (in the example of Macedonia, Serbia, Slovenia and EMU) through several commonly used indicators, including: Consumer Price Index - (CPI) - Consumer prices (annual%), GDP deflator (annual%), Food production index etc. Monitoring the annual changes of these indicators will show their methodological strengths and weaknesses and the need for their combined use.

Keywords: Inflation, Consumer Price Index – (CPI), Consumer Prices (Annual %), GDP Deflator (annual %), Food Production Index

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1. Introduction

Inflation is one of the most complex and complicated economic phenomena. Defined as a general rise in the price level, inflation is one of the basic economic characteristics and problems of the modern world. The issue of inflation is an issue that occupies professional and scientific, but also political and business subjects. In an attempt to determine the complex phenomenon of inflation, the simplest explanation would be that it is a state of the economy when monetary funds exceeds the supply of goods and services, that in itself and according to the basic economic rules of supply and demand causes growth in the general price level. Exploring this rule, if we go back in economic history, Keynes' multiplicative model focused on the impact of changes in aggregate demand on output and unemployment, while the impact of prices was neglected. But it is noticeable that in modern economies prices tend to rise throughout the year, and sometimes very quickly. Each time when nominal GDP rises, the price components raise along with the production components. Inflation occurs whenever the general price level rises, while the inflation rate is defined as the percentage change in the price level.

According to the creators of the quantitative theory of inflation, the amount of money in the economy determines the value of money, and the increase in the amount of money is the main cause of inflation. This is confirmed by monitoring the amount of money in circulation and the inflation rate, as well as the price level, and all categories show almost identical changes. In such circumstances, several essential questions arise: a/. Under what circumstances and for what purpose are surpluses injected into economies? b/. What mechanisms can be used to control the inflationary effect arising from the imbalance of monetary and commodity funds? c/. What is the turning point at which inflation becomes a serious problem for the functioning of the economy? d/. What is the connection of the so-called "Inflation" tax and impoverishment of the population? e/. For what purpose will the excess money be used? This issue is especially important, especially in the context of the claim of some monetarists that controlled inflation can boost economic growth. This, in turn, imposes the need for parallel monitoring of inflation rates and growth rates, as well as examining the long-term correlation of these phenomena. In the context of pursuing such an economic policy, the key point is of course the distinction between production consumption and final consumption. Both consumptions put pressure on the demand side of money, but with completely different macroeconomic effects and pressure on price growth.

The question that is essential for the correctness of the conclusions is always the methodology according to which the obvious phenomena are quantified. Thus, the explanation of the inflation phenomenon is inevitably related to the indicators with which it is measured and the methodology according to which those indicators are calculated. Moreover, despite the harmonization of most indicators, there are still differences in their content, as well as in the methodological procedure of their quantitative expression. These differences certainly exist in a historical context (i.e. some of the indicators have changed,

and new ones have been established as complementary measures to the existing ones), but there are also differences in a geographical context (certain differences in the content or in the weights of some indicators). Some of the differences that cause methodological advantages or disadvantages will be discussed below, and among the indicators that are now used to quantify inflation are: cost of living index, the rise in prices of consumer goods, the rise in prices of agricultural or industrial products, GDP deflator, etc. Thereby, price increases can be tracked through a defined basis or through continuous chain changes.

2. Literature review

There is a large body of literature referring to the inflation as a phenomenon, and to the indicators for its measurement. All contemporary authors start from Friedman's popular definition of "stable and sustainable price growth" (Friedman, 1963, p. 1)⁴, which in principle determines the phenomenon, but it is not an operational definition. Analyzing the inflation rate, Mishkin believes that inflation is a major economic and monetary problem. According to him, "Over the past 50 years, the inflation rate has been constantly changing, reaching high values that in some cases were even double digits. This variation in the inflation rate has emerged as the main economic and monetary problem of all economies, i.e. how to find ways to calm down the so-called an inflationary fire that constantly ignites and inflames prices in all economies of the world" (Mishkin, 2004, p. 751).⁵ The complexity of inflation as a phenomenon prof. Trpeski determines it through the overall interaction impacts it has on economic processes and categories. Taking into account all these relations and the difficulty to define it, he determines it as follows: "Inflation is defined as a process that is self-sustaining and for various reasons causes price growth, which gradually sooner or later, once the stimulus effects of price growth are used, it leads to a decline in the living standards of the majority of the population, to the exhaustion of national sources of foreign exchange, to the deterioration of the foreign exchange balance and the exchange rate of the national currency and finally to the disruption of the market which complicates the continuous functioning of the economy". (Trpeski, 2003)⁶

Although at first glance it seems that inflation is a modern phenomenon, it has "roots" deep in the past and it's a paradox that, still the highest hyperinflations have occurred before WW2. Looking at the initial measurements that determined the "magnitude" of inflation O'Neill, Ralph and Smith (2017, p. 45 - 67) state that: "The identification of the time period that constitutes the "early history" of inflation measurement is, of course, an arbitrary one. In this book, we have taken the period 1700 - 1879 as a useful division of time to cover for this early

⁴Friedman, M. (1963), *Inflation: Causes and Consequences*, Asia Publishing House, New York.

⁵Mishkin, Frederic S. (2004), *The economics of money, banking, and financial markets*, Seventh editions, Columbia University.

⁶Trpeski, Ljube. (2003), *Money and Banking*, Second Edition, University Textbook, Economy Press, Skopje. (in Macedonian language)

history”.⁷ In one chapter of the same book, they describe the early developments that laid the foundation for the official development of inflation measurement. If we start from the time period that they refer to as the "early history" of measuring inflation, we are talking about a period of over 300 years in which measuring "instruments" and indicators have gone through a long period of evolution, adaptation and adjustment to other economic categories, processes and movements. This imposes the problem of comparability of data if long time series are followed and the need for analytical knowledge of the content of individual indicators used in different countries and different time periods. Starting from the early development of inflation measurement from the first considerations of a “price level” in 1707, passes a significant period of time to the introduction of the Interim Index of Retail Prices in 1947. According to these authors, the period up to 1880 was dominated by the work of visionary individuals whose insights laid the foundations of both theory and practice. The resources of the state were harnessed to produce the first official inflation measure in 1914 - the Cost of Living Index. The first use of indexation for adjusting wages followed soon after. The Index was subject to political control during the Second World War and did not reflect the public experience of price changes. As a result, it became discredited and a fresh start was needed after the War.⁸

Measuring inflation is especially evident in times of crisis, as the world now faces. The debate on how to measure inflation properly has blown up in the last few years, involving both distinguished statisticians and economists, states Enrico D’Elia in 2004 (D’Elia, 2004, p. 2).⁹ His position is even more relevant today in the context of the pronounced rise in prices in almost all countries. In such conditions, the indicators that measure inflation are re-examined, i.e. whether the rise in prices defines a serious problem in the economy or the real problem is the purchasing power of money. No matter what indicators are used to measure inflation, the quantitative sizes that will be obtained, as well as inflation expectations are input data for modeling monetary policy measures. Talking about the Bank of Canada, John Murray concludes that “consistently aims for low and stable inflation - not for its own sake, but because it enhances the economy's performance. Aiming for an explicit 2 per cent inflation target not only helps stabilize prices, it also helps stabilize real output and employment, allowing the economy to grow at its maximum sustainable rate. Experience has shown that this is the best contribution that monetary policy can make to the economic welfare” (Murray, 2008, p. 1).¹⁰ Emphasizing the fact that this statement is valid for any Central Bank, then the central question remains which indicator to measure inflation will be applied, what methodology for calculating the respective indicator will be applied, the selective criterion for

⁷O’Neill, Robert., Ralph, Jeff., and Smith, A. Paul. (2017), *The Origins of Inflation Measurement: 1700 -1879*, In book: *Inflation*, DOI:10.1007/978-3-319-64125-6_3.

⁸Ralph, J., O’Neill, R., Smith, P.A. (2020), *The Early History of Inflation Measurement*. In: *The Retail Prices Index*. Palgrave Pivot, Cham. https://doi.org/10.1007/978-3-030-46563-6_2

⁹D’Elia, Enrico, (2004), *Measuring Inflation*, Romanian Journal of Economic Forecasting, n. 3

¹⁰Murray, John. (2008), *Measuring Inflation -Methodology and Misconceptions*, Remarks by Mr John Murray, Deputy Governor of the Bank of Canada, to the Certified General Accountants of Ontario, Toronto.

inclusion or exclusion of certain goods and services in the indicator used, the weights that will be used, as well as the fact that the effects of the appropriate measures will not be immediately noticeable, because the monetary policy works with long and variable lags.

3. Basic inflation indicators – methodological characteristics

Given the complexity of the phenomenon of inflation and the numerous ways to determine it, many authors provide definitions of inflation in which they mention some of the causes, and most often many of the consequences that it causes. Common to all is that it means an increase, inflating something (lat. Inflatio), so in this sense the simplest determination is that inflation means increasing or inflating prices. Because price is a monetary counterpart to the value of goods and services, in conditions where nothing has changed in the use value of the goods and in the technology for obtaining them, it simply means that exactly the same goods are exchanged for a higher price. In order to measure this phenomenon (so that it can be monitored, predicted, and even controlled to the extent that it is possible to do so), it is necessary to measure the degree of price change, i.e. to measure the rate at which prices are rising. Although this concept seems very simple and is quite clear to understand, its application in economics is not at all simple. Given that there are almost infinitely many goods and services whose prices not only do not grow at the same pace, but also do not grow at the same time, the first question when measuring inflation is which prices will be monitored. The prices of those goods that statisticians estimate to be a representative "basket" of goods and services consumed by the population are most often followed, and the changes in their prices are followed as a percentage change compared to the previous year. The first methodological challenge is what to put in the "basket". It is in this determination that the differences between different countries appear, despite the harmonization of the indicators that are calculated. In accordance with the change of consumer habits and research surveys conducted for that purpose, the content of the representative basket changes. Some countries change the basket once a year (for example, Britain), some every two years (for example, America), and some for many more years, as America used to change it every ten years. The next important point is the way of weighting the goods that make up the consumer package, according to the importance and according to the functions they have in meeting the needs. On the other hand, the relative representation of individual products purchased by the richer and poorer strata of the population differs significantly. The richer and the poorer have differences in both preferences and shopping habits. Of course, the share of food in the consumer basket of the poor is significantly higher than in the total consumption of the richer strata, and therefore it is logical that in conditions of more pronounced increase in food prices the poor will be more exposed to the impact of inflation. The relative representation of the needs for food, housing, overhead and utilities, etc., is also different in different countries. The different relative importance of individual products in the consumer basket, the interval in which the contents of that product package are changed and the interval in which the relevant product and service basket is restructured can have a serious impact

on the calculated inflation rate, even annually. The already mentioned difficulties in collecting the input elements for calculating inflation indicate that the quantification of this phenomenon is not a serious problem and that the interpretation of the obtained results is a more serious challenge than the calculation itself.

The first problem in measuring inflation and determining the indicators that will be used for that purpose is the very definition of inflation. In reality, there is little agreement on the concept of inflation, which imposes the application of several indicators for its calculation and quantification. Having in mind that the inflation happens every time when the general level of the prices is rising, while the percent of inflation is defined as a percent of the change of prices level (measured though the index of the living expenses, the rise consumer goods prices, the rise of the agricultural or industrial products prices and etc.). The calculation is done by this simple formula:

$$\text{Inflation rate (year t)} = \frac{\text{price level (year t)} - \text{price level (year t - 1)}}{\text{price level (year t - 1)}} \times 100 \quad (1)$$

The inflation measured with this formula shows the average level of the prices growth. Although the prices of some products rise with slower and of other with faster pace, the inflation rate expresses the average level of growth of the prices. The dynamics of the prices movement on other hand is expressed through the index of prices which is an average number of the individual prices (the weight of every consumer price depends on the importance of that product in the economy). As most important price index can be used¹¹:

- The Consumer Price Index – (CPI);
- The Index of production prices;
- The GDP deflator.

As a most used inflation measure is the consumer prices index - CPI, which is calculated according the prices of the consumer products that create the consumer basket. The index of production prices can include the prices of the means of production, prices of the materials needed for production, prices of the goods for personal use and etc. A standard restriction while calculating CPI is to limit the definition of inflation to precisely defined goods and services whose growth is monitored, most often goods and services purchased from households "for the purpose of directly meeting the needs of consumers" (EU Council regulationn. 2494, 1995).¹² According to OECD, inflation measured by consumer price index (CPI) is defined as the change in the prices of a basket of goods and services that are typically purchased by specific groups of households. Inflation is measured in terms of the annual growth rate and in index, 2015 base year with a breakdown for food, energy and total excluding food and energy. Inflation measures the erosion of living standards. A consumer price index is estimated as a

¹¹Karadjova, Vera., Simončeska, Lidija., *Inflation risk – Conditions, Expectations and Risk Management Strategies*, St. John's University, USA, Global Business Research Symposium, The 7th Annual Conference, June 13-15, 2012, Rome, Italy.

¹² Council Regulation (EC) No 2494/95 of 23 October 1995 concerning harmonized indices of consumer prices, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31995R2494>

series of summary measures of the period-to-period proportional change in the prices of a fixed set of consumer goods and services of constant quantity and characteristics, acquired, used or paid for by the reference population. Each summary measure is constructed as a weighted average of a large number of elementary aggregate indices. Each of the elementary aggregate indices is estimated using a sample of prices for a defined set of goods and services obtained in, or by residents of, a specific region from a given set of outlets or other sources of consumption goods and services.¹³ Taking into account the methodological differences in the structure of the products included in CPI, GDP deflator is calculated as a ratio between the nominal GDP and the real GDP, that is, the deflator of the GDP is an index for the entire GDP (consumption, investment, expenditures, and net export).

In the very "construction" of a "reasonable" aggregate consumer price index (CPI), and considering its limited concept, a solution can be sought through two almost opposite approaches. One would rely on the concept of "cost of living" and would be strictly related to the economic concept of consumer utility; and the second concept would mean a direct connection with the statistical theory of aggregate indices. In doing so, the most serious debates regarding the measurement of inflation refer to the comparison of the relative advantages and disadvantages of the cost of living indices (COLI) and the cost of goods indexes (COGI). Proponents of the COLI concept explain its justification by eroding the living standard of the population through the rise of prices. Diewert (2000)¹⁴, as well as some other economists and statisticians advocate the concept of "superlative" price indexes, as far as they tend to approximate every well-conceived COLI under fairly general conditions. However, a pragmatic view on "ideal" CPI should not disregard the fact that, in practice, a CPI must be used in the context of an economic model, even informal.¹⁵ In any case, when analyzing the results obtained, it must be borne in mind that there is no "perfect" CPI and that a combined interpretation of several indices is required. Very often the subjective perception is that inflation is higher than that calculated by the CPI, due to the selection in the formation of the consumer basket and due to the setting of price restrictions in regulated markets, salary allowances and social benefits. But a more accurate calculation of the CPI, which would be a more reliable reflection of "real" inflation, would increase the pressure on pensions and salaries, as well on taxes (taxpayers could pay too much in order to support social spending). The accuracy of the CPI calculation also has a significant impact on monetary policy (which justifies the "underestimation of inflation" using the economic approach to the CPI calculation). Monetary policy based on targeting "real" inflation would increase inflation expectations, and inflation in the end. In this sense, Eurostat

¹³OECD (2022), Inflation (CPI) (indicator). doi: 10.1787/eee82e6e-en (Accessed on 25 June 2022), <https://data.oecd.org/price/inflation-cpi.htm>

¹⁴Diewert, W.E. (2000), Notes on Producing an Annual Superlative Index Using Monthly Data,

Discussion Paper 00-08, Department of Economics, University of British Columbia

¹⁵D'Elia, Enrico, (2004), *Measuring Inflation*, Romanian Journal of Economic Forecasting, n. 3, p. 2

occasionally changes the structure of the CPI, but still the HCPI theoretical framework remains without a single doctrine, choosing a combination of multiple approaches, giving it an eclectic character and creating theoretical and practical debates about the accuracy of the calculated rate.

4. Inflation indicators – comparative analysis (1992 – 2022)

Having in mind the previous explanation regarding inflation and its measurement, the paper analyzes the official data on three inflation indicators (Inflation, consumer prices (annual %), indicator code: FP.CPI.TOTL.ZG; Food production index (2014-2016 = 100), indicator code: AG.PRD.FOOD.XD; and Inflation, GDP deflator (annual %), indicator code: NY.GDP.DEFL.KD.ZG). Data from World Development Indicators from the World Bank database are used.¹⁶The analysis was made for Macedonia, Serbia, Slovenia and the European Monetary Union, for a period of 27 years (1992 - 2019). The purpose of the comparative analysis of these three indicators that are most often used to measure inflation is on the example of these countries and EMU to follow the trend of indicators in almost thirty years, to identify possible differences in the tendency of individual indicators (if any), and to put forward theses on the reasons for such tendencies. A deeper analysis of the reasons for the methodological differences far exceeds the scope of paper of this type and scope.

In addition to the data for Macedonia, the analysis also takes data for Serbia as a neighboring country with which we shared identical macroeconomic problems (including the problem of inflation) until 1991; Slovenia, which also belonged to the same country and was subject to the same macroeconomic and monetary policy until the 1990s, and which in terms of territory and population is most similar to Macedonia (but it cannot be said by the level of development), and at the same time Slovenia is also a country belonging to EMU; and data for EMU countries. For the period under processing (1992-2019) chain indices are calculated in order to track the annual changes of the respective index and to more easily note the changes that have occurred (in a positive or negative direction), and at the same time such changes are considered in the same time in EMU, Macedonia, Serbia and Slovenia, in order to detect whether the annual changes in the analyzed indices have the same tendency. The following Fig.1 shows a graphical presentation of the chain indices of the three analyzed inflation indicators in the EMU countries. The data show that throughout the analyzed period the inflation rate measured by CPI was stable, only in 1992 it was just over 5% and over 4% in the next 3 years, as well as 4.075% in 2008. In all other years, the CPI is between 0 and 3.3%. The other two indicators also show inflation stability, but what we are analyzing here are the annual changes in the indicators. In a significant part of the chart, the annual changes do not show significant deviations and oscillate around coefficient 1, but what is striking is that unlike other indicators, the CPI chain index shows a significant increase and sharp

¹⁶<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>;
<https://data.worldbank.org/indicator/AG.PRD.FOOD.XD?locations=IM>;
<https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG>;(accessed on 25.05.2022)

growth in 2010 compared to 2009 = 4.144951; 2016/2015 = 4.887056 and 2017/2016 = 7.535167, after which it decreased. However, we must take into account the delayed effect of changes in the economy on inflation and some time lag, as well as the data in the series are available until 2019. The changes that have taken place in the last three years are causing serious monetary and overall economic disturbances that will almost certainly show major annual changes in the coming years.

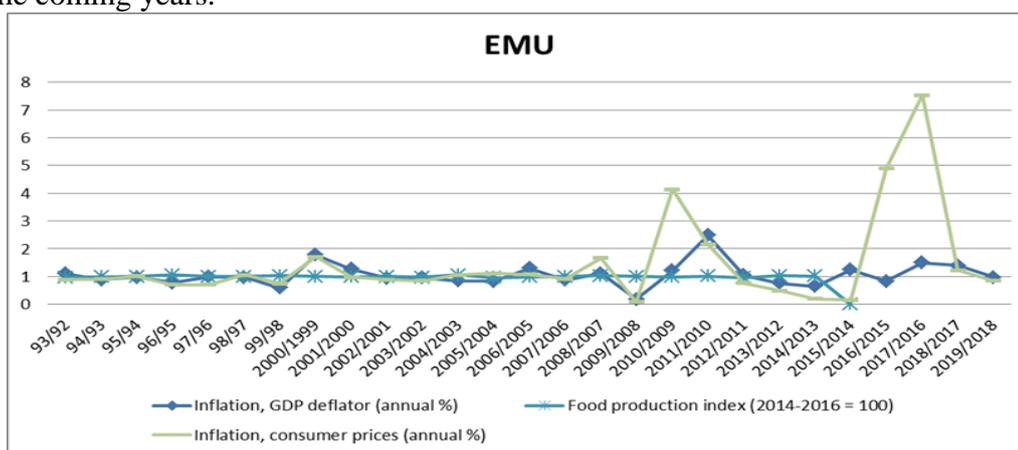


Figure 1. Chain Indices of CPI, GDP deflator & Food production index in EMU (1992 – 2019) (own calculations)

The following graphs (Fig. 2, Fig. 3 and Fig. 4) show the annual changes of the three analyzed inflation indicators in Macedonia, Serbia and Slovenia. What is noticeable from the analyzed data, and even more obvious from the graphs, is that there are significant periods in which the three indicators do not show identical changes, there are time lags in the changes in some of the indicators, and even periods in which one of the indicators shows a tendency to increase, and another tendency to decline. The most striking such points in the analyzed period is: the indicator Inflation, GDP deflator 2005/2004 in Macedonia which shows an annual change of -29,4859, while the other 2 indicators in the same year show almost insignificant changes; and in Slovenia the indicator Inflation, Consumer prices (annual%) in 2017 compared to 2016 shows an annual change of -25,984, and the other two indicators have almost insignificant changes, i.e. coefficient about 1.

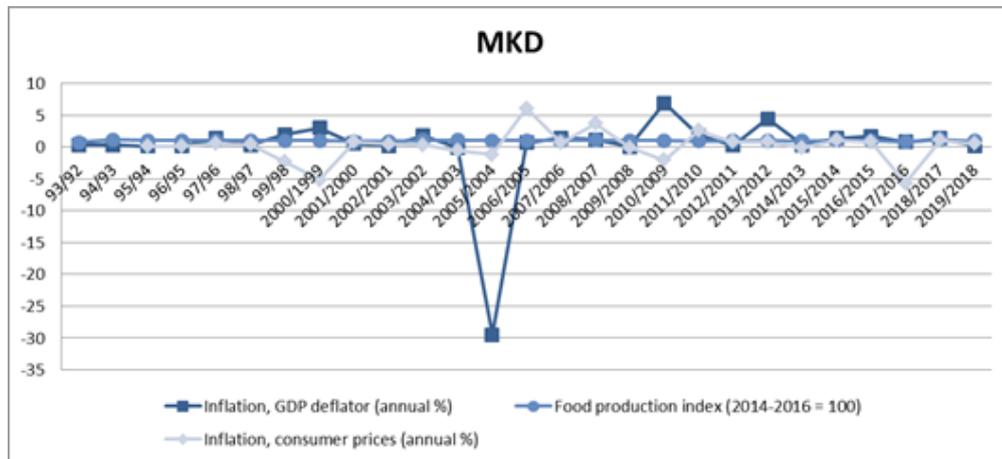


Figure 2. Chain Indices of CPI, GDP deflator & Food production index in MKD (1992 – 2019) (own calculations)

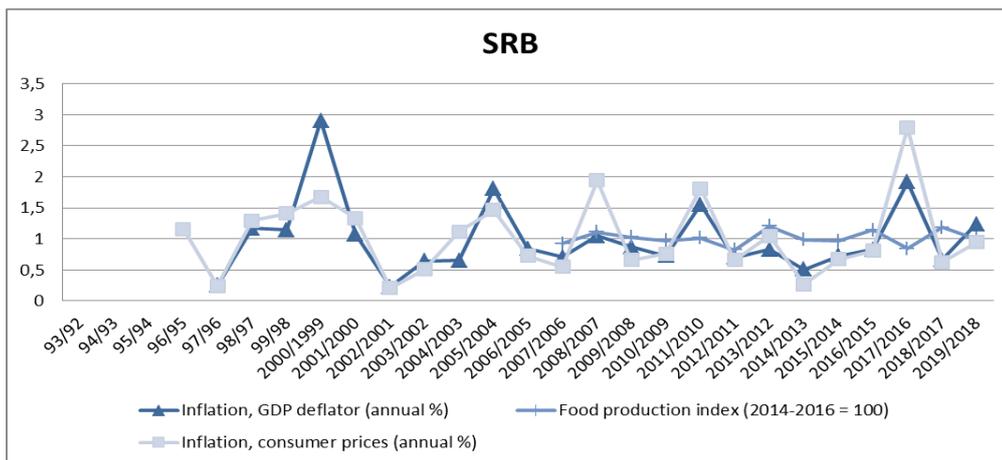


Figure 3. Chain Indices of CPI, GDP deflator & Food production index in SRB (1992 – 2019) (own calculations)

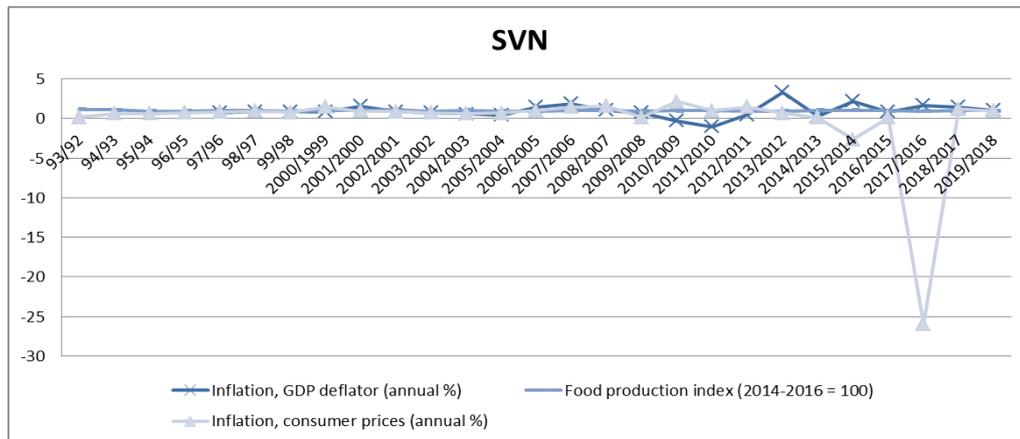


Figure 4. Chain Indices of CPI, GDP deflator & Food production index in SVN (1992 – 2019) (own calculations)

The analysis of these examples shows that despite the expectations that the three indicators that measure identical phenomenon (inflation) have an equal trend, i.e. annual changes in the same direction and with the same intensity, however this is not always the case. Not uncommon, the indicators show different intensity of annual change, and even change in the opposite direction, which confirms the methodological dilemmas and theoretical debates with arguments for and against which indicator most reliably expresses the "real" inflation and the need for parallel use of more indicators.

5. Conclusion

Inflation as a serious macroeconomic problem can not be left out of the techniques and strategies for risk analysis and inflation risk management. In order to be able to control and manage inflation, the current situation, the factors that trigger and warm it up, as well as the inflation expectations are important. In that sense, it is important to quantify the phenomenon of inflation, which although it is mathematically and statistically easy to understand and comprehend, methodologically there are a number of views, approaches and indicators that make it difficult to express it realistically. The need for more realistic expression of inflation is important not only for the protection of the population living standard, but also for the projection of the monetary policy. Monetary policy aims at low and stable inflation in order to improve the performance of the economy. Stable and low inflation not only helps to stabilize prices, but also helps to stabilize real production and employment, enabling the economy to grow at a maximum sustainable rate. Although there is no consensus on that which inflation rate would be most appropriate in this regard, almost everyone agrees that it becomes a serious problem once it becomes double-digit, with a serious probability of getting out of control and with a tendency to turn into hyperinflation and stagflation. Therefore, its monitoring and measurement is a serious economic and statistical challenge, and all methodological aspects that

affect the measurement results should be taken into consideration. In doing so, special attention must be paid to several important issues in conceiving the structure of the CPI as a key inflation indicator: the weighting scheme, the impact of changes in relative prices and the occasional change of weights for certain product categories; possible discrepancies between CPI weights and the share of the same components in household expenditures; the scope of households participating in inflation surveys, the amount and categories of their incomes, the structure of the households personal consumption as a whole, as well as the existing differences by different socio-economic categories; the scope of businessmen and experts who take part in inflation expectations surveys and similar issues in this context.

In addition to the methodological problems in calculating the CPI and the need for a combined approach with the use of other indicators, an additional problem may arise from the use of excessive indicators and the inability to draw a consistent conclusion. All these problems and challenges must be taken into consideration before drawing hasty conclusions about the general direction of inflation in the economy. Facing and solving these problems is not at all simple and it seems that inflation will remain a measure in the gray area which is publicly recognized.

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DETERMINANTS OF CORPORATE GROWTH:
EMPIRICAL INVESTIGATION OF THE SOUTHEAST
EUROPEAN COMPANIES

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Abstract

The growth of companies is always a current and challenging topic for corporate managers who tend to maximize growth. In order for companies to grow they need to undertake investment projects with a positive NPV that will increase production capacity, output and sales. But, on the other hand, the financing of new assets should be in a way that will not deplete financial resources and will enable sustainable growth. In this paper, we investigate the internal company-specific determinants of corporate growth in Southeast Europe on a sample of 791 companies. We found that SEE companies achieved moderate annual growth of 6.73% per year. This is primarily and mostly due to the small volume of capital investments, which in turn is a result of poor operating performance and low profitability. Retained earnings are the primary internal source of investment financing along with additional borrowing for these companies that have no other financing opportunities available, operating in underdeveloped financial market. The growth of the companies in SEE is positively affected by capital investments, financial leverage, operating cash flow, ROA, ROE, firm's size, net profit margin and assets turnover. The growth of the companies in SEE is negatively affected by non-debt tax shield, tangibility, account receivable collection period, inventory conversion period and cash conversion cycle. Companies in SEE need to improve working capital management practices, to increase its effectiveness and efficiency, in order to generate greater profitability and consequently greater company growth.

Keywords: corporate growth, sales growth rate, sustainable growth, South East Europe, emerging markets

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1. Introduction

The growth and growth determinants of companies have been researched for a long time, but is still relevant challenging topic for many researchers. Successful companies are those that go through predictable growth stages, from introduction, accelerated growth, maturity, to decline. But not all companies manage to climb to the next scale and reach the final stage. There are two sets of thoughts prevailing among researchers, where some suggest that the growth path followed by the enterprise is linear or predictable, and others suggest that the growth is fairly opportunistic term or unpredictable (Gupta et al., 2013). Gibrat's law of proportionate effect states that the proportional rate of growth of a firm is independent of its absolute size (Samuels, 1965). Hence, firm size distribution is log-normal. However, a number of studies have found a negative relationship between company growth and size, some have found no relationship, and still others claim that small companies are experiencing rapid disproportionate growth. They all deny Gibrat's law, as we will see in the literature review section.

Companies often have different growth rates throughout each stage of the business cycle. When companies are just starting, they tend to have high growth rates because they are growing from nothing. Businesses can experience rapid growth when they launch because they are reaching an audience for the first time. As a business matures, its growth rate can decrease to a more sustainable rate, even while the business expands. Some companies experience multiple phases of rapid growth as they launch new products or develop branding initiatives. Finally, a business that is in decline will have a low or even negative growth rate.

The growth of companies is influenced by a number of external and internal factors. External factors in the first line are the factors related to the industry, macroeconomic environment, the phase of the business cycle, inflation, interest rates, the degree of development of financial markets, access to capital, availability of resources - financial and material, such as government policies, fiscal and monetary policy, policy aimed to support the development of companies, growth grants, etc. At the same time a large set of internal factors determine the growth of companies. These include management related factors such as quality of management, corporate governance, business strategy, organization, innovation, strategic partnership, human resource management, quality of workers, etc. On the other side are the company's operating performance and financial policies. The success of the company in the past creates the funds necessary for future growth providing internally generated growth of the company.

Company growth can be measured in different ways, through sales growth, assets growth, growth in the number of employees, value growth, business volume growth, and so on. The most commonly used measure is sales growth, which we take in this paper as a definition of company growth. In this paper we investigate firm-specific determinants of corporate growth in the case of companies from ten Southeast European countries (Bosnia and Herzegovina, Bulgaria, Montenegro, Croatia, Greece, Romania, North Macedonia, Slovenia, Serbia and Turkey). Based on the data from their financial statements for the period 2011-2019, we defined a

wide range of ratios as independent variables against which we regressed the growth of sales.

Research on the determinants of company growth has so far have been conducted to a greater extent in the case of developed countries as well as in the case of underdeveloped countries and emerging markets. To our knowledge, this is the first paper to be conducted at the level of the entire SEE countries. These countries are post-socialist, having been developing a market economy for three decades. Operating in emerging markets, these companies operate in a completely different economic environment than those in developed countries. They operate in underdeveloped financial markets that are bank-centered, where primary and seasonal issues of shares or other securities are rare, and in some countries do not exist (Naumoski et al., 2022). Thus, these companies have limited financial resources of capital to undertake investment projects that will provide growth of production capacities, growth of output and growth of sales. The growth of the companies is largely based on the internally generated sources of retained earnings, and the appropriate borrowing from risk averse banks that find it difficult to approve new loans without offering attractive investment projects. Hence, the growth of companies depends on the good operating performance and financial policy of the company. Exactly the indicators related to the internal economy of the company were the inspiration for research as determinants of the growth of the companies.

This paper is organized as follows. In addition to the introductory part, in part two we give an overview of the results of similar research. In section three we explain the data, define the variables used in the analysis and give a look at the summary statistics and correlation. In section four we give an overview of the regression analysis. Section five concludes and provides an overview of the limitations of this research and makes recommendations.

2. Literature review

Many authors have explored the determinants of company growth from different perspectives, with different depths and different methodologies, in the case of small, medium and large companies, in the case of different countries. There are many who research company-specific determinants, some of which involve external factors. More specifically, within company-specific determinants, some explore the impact of determinants related to corporate governance, management, knowledge, innovation, and so on. There are also a number of studies that examine the impact of company operating and financial policies, and other accounting variables, as in the case of our research. Therefore, we further review other selected studies that are similar to our research.

The determinants of companies' growth differ in different sectors and industries in which companies operate. In a most recent study, Vukovic et al. (2022) investigated the determinants of the company's growth in the field of agriculture, forestry, and fisheries at the European Market during 2014–2019 period. They conclude that company size has a negative impact on companies' growth, ROA and leverage have a positive impact on growth, while growth is not related with the liquidity measured by current ratio, and with the profitability

measured by ROE besides internal funds from retained earnings are considered main source of financing growth. They finally conclude that for the companies of this sector, external determinants are eventually more important for the growth, as are the credit and natural conditions, agricultural policy measures, and adequate institutional support through the provision of financial support and encouragement of exports of products. The growth of the food and textile companies in Pakistan is positively affected by their profitability and negatively by the leverage, while the innovation, liquidity and solvency have no influence of their assets growth (Bashir et al., 2020). The Spanish hotel sector companies' growth depends on profitability, size, age and leverage (Claver et al., 2006). Taiwan's manufacturing firm growth is positively related with the firm size, age, capital intensity, lagged R&D, export ratio, investment ratio, and profits, while high debt-to-equity ratio is associated with low corporation growth (Liu and Hsu, 2006). Banks growth in European Union depends on their profitability, that is inversely related with the capital-assets and liquidity ratios, so as with the growth (Goddard, 2004). Profitability-driven management strategy limits Korean construction companies' growth, and profitability in the current period can be stimulated by the high growth of the previous period in the conditions of a stable macroeconomic environment (Yoo and Kim, 2015). In the restaurant industry, profit creates growth, but growth impedes profitability. More precisely, prior year's profitability of restaurant firms had a positive impact on the growth rate of the current year, while the current and prior year's growth rates had a negative impact on the current year's profitability (Jang and Park, 2011). R&D intensity has a positive effect on firm's growth rate and firm's size has a mixed relationship with sales growth at the upper quantile, thus Gibrat's law is rejected in the Korean pharmaceutical industry (Chung et al., 2019).

The determinants of growth of the small and medium sized companies have been investigated by many authors. Mateev and Anastasov (2010) on a sample of 560 fast growing small and medium enterprises from six transition economies found that firm size when measured by firm total assets, leverage, current liquidity, future growth opportunities, internally generated funds, and factor productivity are important factors in determining a firm's growth and performance. Factors that significantly influence manufacturing SMEs growth in Greece are profitability, liquidity, reliance on long-term debt, employee productivity, fixed assets turnover and restricted sales credit terms (Voulgaris et al, 2003). Carvalho et al. (2013) on a sample of 182 fitness SMEs in Portugal found that smaller companies grew faster than larger ones, so the company size has a statistically significant negative impact on growth, while the internal finance, external finance and labour productivity are important determinants to increase growth. In a "bank-oriented" financial system in which access to external finance is difficult, the growth of the SMEs depends crucially on bank loans. Commercial bank loan play significant role in SMEs financing and growth of the economy in Nigeria in the long run (Alese and Alimi, 2014). Similarly, Becchetti and Trovato (2002) investigating a sample of Italian SMEs, also conclude that firms with higher availability of external finance (high leverage firms) grow much more than low leverage firms. They also present a negative relationship between the SMEs growth and the age and firm's size. Additionally, on a sample of 22,000

Italian SMEs, Sampagnaro (2013) found that firm size, non-financial debt and internal cash flows play important role on their growth. Furthermore, Megaravalli and Sampagnaro (2019) on a sample of 45,000 Italian family business small- and medium-scale enterprises, state that the growth of the SMEs mostly rely on liquidity, solvency, firm age, cash flow, and efficient and effective working capital management. Honjo and Harada (2006) found that cash flow have an impact on the growth of younger Japanese SMEs. Cassia et al. (2009) state that European hyper-growth firms are younger, more involved in merger and acquisition, have large volume of current and future investments, high leverage, lower solvency, rely more upon investments in fixed assets and also the ownership plays important role for their growth. Serrasqueiro et al. (2010) also confirmed that age, debt, and R&D intensity have negative relationship with SMEs growth in circumstances when the size of these companies is growing considerably, and there is a negative relationship between cash flow and growth when there is a reduction in their size. Heshmati (2001) found that size has negative relationship with growth when measured with the number of employees and positive when measured with sales and is not related when measured with assets. Also, a negative relationship between the age and growth of firms is found in the employment model, while a positive in assets and sales growth models. Kachlami and Yazdanfar (2016) found positive and significant influence of profitability, short-term debt and size on a firm's growth across in Swedish SMEs. In the case of SMEs in Finland, Niskanen and Niskanen (2006) note that younger firms exhibit higher growth rates, increase in size initially increases growth in the case of smaller firms, but the effect is reversed after a certain level, and close lending relationships enhance growth. Rafiki (2020) investigated much than financial determinants of the SMEs in the Kingdom of Saudi Arabia and found that size, experience of the manager, training, financing and the network relationship have a significant influence on the growth, while the education and firm's age do not have a significant relationship with the firm's growth.

Megaravalli and Sampagnaro (2018) investigating the predictors of firm growth in the case of Indian firms, concluded that chances of being high-growth firm are higher for young firms and liquidity ratio is one of the important predictors of firm growth and also emphasizes the fact that better liquidity position of the company reflects higher growth and reduces the chances of default. Khaldun and Muda (2014) concluded that the liquidity ratios together significantly influence growth of the food and beverages sector companies listed on Indonesia stock exchange.

Potential growth of Canadian firms is influenced by firm size, current liquidity, leverage, cash flow, age, and industry (Gill and Mathur, 2011). On a sample of 1,450 Indian firms, Mishra and Soumya (2018) point out that efficiency in management of current assets and capital (both short- and long-term) is the most critical factors that determines the firm revenue growth. Previously on a sample of 250 Indian companies, for the period 2004-2014, Aggarwal (2015) concluded that size, advertising intensity, age, profitability, research and development intensity, solvency, leverage, efficiency, diversification, and nature of industry are statistically significant in determining the growth.

The growth of sales of Ecuadorian companies is negatively related with size, innovations and indebtedness and positively related with the age (Simbana et al., 2017). Markman and Gartner (2002) found that extraordinary high growth (e.g., sales growth rates of 500 percent to 31,000 percent over five years) is not related to firm profitability.

On a sample of Central and East European countries Malinić et al. (2020) investigated the determinants of firms' growth in periods of crisis model firm growth as a function of two country-specific variables (inflation and capital market liquidity) and four company-specific variables (financial leverage, asset turnover, profit margin and ratio between cash flow and assets). Their conclusion is different for the different markets. Perić et al. (2020) also examining the period of great financial crisis on a sample of Croatian firms in the manufacturing and hospitality industries found that asset growth is positively associated with the size of the firms.

Growth of the firm is not significantly related with the company size, but investing in new technology, international diversification and profitability are more important factors (Hermelo and Vassolo, 2007). Leverage and initial financial size have great impact on the growth rates in the case of new firms, but leverage has little impact on the economic significance of the conditional age and size relationships with firm growth (Huynh and Petrunia, 2010). The leverage gave positive impact on the firm's growth (Hameed et al., 2012). Liquidity also plays important role on corporate growth, the stronger liquidity constraints, the more size negatively affects firm's growth (Fagiolo and Luzzi, 2006).

3. Data description and measurement

The study of the impact of internal company determinants on the company growth rate in this paper was done in the case of a large sample of companies from South-East Europe. The SEE list includes ten countries: Bosnia and Herzegovina, Bulgaria, Montenegro, Croatia, Greece, Romania, North Macedonia, Slovenia, Serbia and Turkey. Researching a large sample should allow us to draw more reliable conclusions. The data are provided from the financial statements of the SEE companies from the Thomson Reuters Eikon and Datastream database for the period 2011-2019. The sample includes only the companies listed on the national stock exchanges. The reason why we focus only on listed companies is because these data are the most reliable, since they have to comply with the special requirements imposed by stock exchanges to meet corporate governance criteria and especially for financial reporting of audited financial statements. The sample was calibrated to provide data consistency. More specifically, only companies from the real sector were taken in the sample, and we excluded all companies from the financial sector as well as utilities, given that they operate in conditions of statutory and other legal obligations and have to meet a number of regulatory requirements. Moreover, the definitions for some accounts are quite different from those of the real sector companies, such as inventories. Furthermore, all companies that have inadequate accounting data, negative capital, negative assets, negative sales, negative operating cycle and other inadequate accounting data were excluded from the sample. Finally, we cut

the lower and upper 1% extremes. These criteria have provided us with a sample of 791 company, and a total of 7,780 firm-year observations.

3.1 Measure of sales growth rate

The growth of the companies is measured by the actual sales growth. The actual sales growth rate is the rate at which the sales growth on an annual basis. It is expressed as:

$$g = \frac{\Delta S_{j,t}}{S_{j,t-1}} = \frac{S_{j,t} - S_{j,t-1}}{S_{j,t-1}}$$

where, g is the *Sales Growth Rate*, $\Delta S_{j,t}$ the absolute annual growth of the *Sales* of the company j at time t , $S_{j,t}$ is the *Sales* of the company j at time t , and S_{t-1} is the previous year's *Sale* of the company j .

3.2 Exogenous variables

The explanatory variables of the company's growth rate are all those internal company variables related to the financial policies and operating performance of the company that have an impact on revenue growth. Our intention was to include as many variables as possible. Their definition and measurement are presented in the following table.

Table 1. Definitions of exogenous variables

Capital investments	= $(\text{CAPEX}_t - \text{Depreciation\&Amortization}_t) / \text{Total Assets}_t$
Financial leverage	= $\text{Total Liabilities}_t / \text{Total Assets}_t$
Operating cash flow	= $(\text{Net profit before tax} + \text{Depreciation and amortization})_t / (\text{Total Current Liabilities})_t$
Non-debt tax shield	= $(\text{Depreciation and Amortization})_t / (\text{Total Assets})_t$
ROA	= $(\text{Net profit})_t / (\text{Total Assets})_t$
ROE	= $(\text{Net profit})_t / (\text{Total Equity})_t$
Firm size	= $\ln(\text{Total Assets})_t$
Net profit margin	= $(\text{Net profit})_t / \text{Sales}_t$
Assets turnover	= $\text{Sales}_t / (\text{Total Assets})_t$
Tangibility	= $(\text{Tangible fix assets})_t / (\text{Total Assets})_t$
Account receivable period	= $(\text{Account receivable}_t / \text{Sales}_t) \times 365$
Inventory conversion period	= $(\text{Inventory}_t / \text{Cost of Goods Sold}_t) \times 365$
Cash conversion cycle	= $\text{Account receivable period} + \text{Inventory period} - \text{Account payables period}$

3.3 Summary statistics and correlation analysis

The summary statistics for the whole sample is presented in Table 2, and at the level of individual countries in Table 3. The companies in SEE achieved moderate growth in the period 2011-2019, and grew at an average actual rate of 6.73% per year. This moderate growth is far from desirable for managers. However, at the level of individual countries there are large differences in the actual company growth. Leading the growth are companies from Turkey with an average actual rate of 12.6%, Bulgaria with 10.5% and Serbia with 9.8%. Moderate growth rate was achieved by the companies in Bosnia and Herzegovina

(4.7%), Croatia (3.4%) and Romania (5.8%), anemic growth was achieved by the companies in Greece (1.7%), North Macedonia (0.1%) and Slovenia (1.8%), while companies in Montenegro achieved a negative growth rate, i.e., on average decreased by -0.3% per year.

Table 2. Summary statistics, period 2011 – 2019

Variable	Mean	25 th percentile	Median	75 th percentile	Standard deviation
Sales growth rate	0.0673	-0.0864	0.0341	0.1648	0.3666
Capital investments	0.0078	-0.0205	-0.0055	0.0180	0.0674
Financial leverage	0.5012	0.2840	0.4805	0.6671	0.3373
Operating cash flow	0.4409	0.0274	0.1699	0.5050	1.3172
Non-debt tax shield	0.0350	0.0182	0.0295	0.0437	0.0270
ROA	0.0105	-0.0205	0.0113	0.0491	0.1244
ROE	0.0407	-0.0277	0.0274	0.1052	0.3913
Firm size	19.2	17.8	19.1	20.6	2.0
Net profit margin	0.0225	-0.0406	0.0164	0.0729	0.3999
Assets turnover	0.7629	0.3356	0.6036	0.9601	0.8150
Tangibility	0.5441	0.3765	0.5431	0.7100	0.2237
Account receivable period	110.1	37.8	69.8	126.2	173.3
Inventory period	168.4	38.0	84.8	172.2	295.4
Cash conversion cycle	111.2	8.1	77.2	180.4	403.6

Source: Author's own calculations

The actual growth of the companies in SEE is certainly a reflection of the economic, political and social environment in which they operate, that are external factors outside our analysis. Our research focuses on the impact that company-specific determinants, which have an internal nature, have on the growth rate of companies. Company-specific determinants show that insufficient company growth in SEE is due to poor operating performance and inadequate financial policies. The moderate growth was primarily due to the weak investment activity of companies in SEE. The growth of companies requires investment in new assets of various kinds, increase of production capacities, which will contribute to increased output, sales, which in turn leads to increased profitability which is the basis for generating retained earnings as internal sources to launch a new investment cycle and sustainable growth. Companies in SEE had a very small volume of capital investments, which on average annually amount to only 0.78% of the total assets. Exactly investing in new production facilities is the basis for generating new production which will subsequently lead to growth in sales revenues. Capital investments are largest in Turkey, but unfortunately, half of the countries have a negative investment rate, i.e. disinvestment process, since depreciation is not used to cover capital expenditures but to cover other operating expenses. Namely, although the depreciation and amortization is 3.5% of the total assets (non-debt tax shield), still the capital investments are only 0.78% of the total assets. The disinvestment process is present in all countries, given that the capital investment ratio is lower than the non-debt tax shield in all cases. An additional factor in this context is the low tangibility. Namely, the share of fixed assets in the total assets is 54.4%, which indicates that the companies in SEE do not have capital intensive production.

Companies in SEE have poor operating performance. The return on total assets is only 1.05%, which is due to the actual negative average profit margin of -2.3% and the low total assets turnover ratio (assets utilization) of 0.76 times.

Also, working capital management is not at an appropriate level. With the long average account receivables collection period of 110.1 days and inventory conversion period of 168.4 days, the operating cycle is 278.5 days which is equivalent to one year according to the number of working days. The cash conversion cycle is 111.2 days for which companies should provide financing for procurement. However, the large number of days on the account receivables collection period should contribute to sales growth. In SEE companies this is not the case but is due to insufficient liquidity to timely cover due liabilities.

Companies in SEE also hold large volumes of inventories that can be the result of unmarketable and outdated inventories. The large volume of inventories and account receivables together held by SEE companies contributes to a large current liquidity ratio of 2.7. According to this indicator, companies in SEE on average have satisfactory liquidity, and yet account receivable days and account payables days are still large. Therefore, we employ another indicator that is considered more important for measuring liquidity, it is the operating cash flow ratio which is 0.44. The operating cash flow ratio is a measure of the number of times a company can pay off current debts with cash generated within the same period. An operating cash flow ratio of less than one indicates the firm has not generated enough cash to cover its current liabilities. The operating cash flow ratio assumes cash flow from operations will be used to pay current liabilities. The current ratio, meanwhile, assumes current assets will be used.

In addition, SEE companies have inadequate financial policies in the area of capital structure, more specifically in the structure of debts. The financial leverage according to the total liabilities ratio is 50.1% from the total assets, i.e. the SEE companies finance half of the total assets with liabilities. Liabilities without debt is 26.1% of the total assets, which mostly refers to trade credit provided by suppliers. Total debt is 23.8% of total assets, where long-term debt is only 10.6% of total assets.

SEE companies operate in underdeveloped financial markets. New shares issues are very rare, and in some countries do not occur at all. The growth of the companies is financed mostly with equity from retained earnings and depreciation, and the borrowing is almost entirely by raising bank loans. However, borrowing from banks is very low, especially long-term borrowing of investment loans, which is necessary to finance new capital investments. This is due to the insufficient supply of good investment projects that are acceptable for financing by banks, which in turn results in a low growth rate of companies.

Table 4 shows the Pearson's correlation coefficients. Sales growth shows a low correlation with independent variables, with most of them having a positive correlation. More importantly, there is a very low correlation between the independent variables indicating the absence of the multicollinearity problem in the regression analysis.

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	Sales growth rate	Capital investments	Financial leverage	Operating cash flow	Debt tax shield	Non-debt tax shield	ROA	ROE	Firm size	Net profit margin	Assets turnover	Tangibility	Account receivable period	Inventory period	Cash conversion cycle
Bosnia and Herzegovina	0.0465	-0.0125	0.3243	0.8120	-0.1646	0.0413	0.0017	-0.0199	18.3	-0.0396	0.4176	0.7113	134.7	296.7	181.9
Bulgaria	0.1050	-0.0048	0.4485	0.3787	0.0522	0.0373	0.0087	0.0397	17.1	-0.0623	0.6838	0.5746	132.2	323.5	170.2
Croatia	0.0343	0.0120	0.4905	0.4274	0.1198	0.0393	0.0094	0.0254	20.7	-0.0129	0.6807	0.6296	61.6	81.6	-22.9
Greece	0.0174	0.0096	0.6301	0.2108	0.2120	0.0317	-0.0130	0.0174	18.7	-0.0904	0.7814	0.4978	144.1	132.0	131.3
Montenegro	-0.0027	-0.0208	0.4620	0.4126	0.0673	0.0478	-0.0296	0.1139	17.5	-0.0648	0.4001	0.7384	97.0	371.3	-36.5
North Macedonia	0.0012	0.0035	0.3810	0.4856	0.0262	0.0332	0.0183	0.0412	20.9	0.0191	0.6239	0.5891	143.8	263.8	215.7
Romania	0.0585	0.0073	0.4086	0.5054	0.1228	0.0354	0.0071	0.0355	18.8	-0.0041	0.7253	0.5743	101.7	190.8	140.6
Serbia	0.0977	-0.0147	0.4509	0.3455	-3.3398	0.0301	0.0127	0.0302	21.8	-0.0413	0.7079	0.5334	142.6	212.3	99.1
Slovenia	0.0177	0.0071	0.4943	0.4745	-0.1081	0.0452	0.0087	0.0598	18.5	0.0025	0.8920	0.6067	56.0	51.8	31.1
Turkey	0.1259	0.0248	0.5294	0.5988	0.1090	0.0331	0.0376	0.0796	19.7	0.0513	0.9469	0.4678	75.5	89.0	85.1

Table 3. Summary statistics by countries, period 2011 – 2019

Source: Author's own calculations

Table 4. Correlation analysis

	Sales growth rate	Capital investments	Financial leverage	Operating cash flow	Non-debt tax shield	ROA	ROE	Firm size	Net profit margin	Assets turnover	Tangibility	Account receivable period	Inventory period	Cash conversion cycle
Sales growth rate	1													
Capital investments	0,109	1												
Financial leverage	0,023	0,015	1											
Operating cash flow	0,063	0,037	-0,264	1										
Non-debt tax shield	-0,034	-0,156	0,028	0,073	1									
ROA	0,163	0,102	-0,171	0,358	-0,037	1								
ROE	0,070	0,035	0,074	0,126	0,031	0,120	1							
Firm size	0,043	0,150	0,054	0,051	-0,038	0,121	0,070	1						
Net profit margin	0,102	0,081	-0,211	0,365	-0,009	0,499	0,082	0,107	1					
Assets turnover	0,091	0,040	0,111	-0,033	0,033	0,122	0,057	0,012	0,085	1				
Tangibility	-0,055	-0,008	-0,130	0,036	0,079	-0,143	-0,073	0,080	-0,120	-0,361	1			
Account receivable period	-0,067	-0,059	0,049	-0,056	-0,160	-0,058	-0,039	-0,101	-0,132	-0,184	-0,107	1		
Inventory period	-0,065	-0,063	-0,085	-0,005	-0,101	-0,060	-0,043	-0,132	-0,102	-0,176	0,024	0,153	1	
Cash conversion cycle	-0,093	-0,028	-0,153	0,028	-0,110	0,007	-0,033	-0,083	0,055	-0,069	-0,120	0,298	0,532	1

Source: Author's own calculations

4. Regression analysis

We employed a panel regression model to investigate the determinants of corporate growth. We regressed the *Sales Growth Rate* against the exogenous variables that are firm-specific determinants as described above. Specifically, we estimate the following equation:

$$\begin{aligned} GROWTH_t = & \alpha + \beta_1 INVESTMENTS_t + \beta_2 LEVERAGE_t + \beta_3 CASHFLOW_t + \beta_4 \\ & NDTS_t + \beta_5 ROA_t + \beta_6 ROE_t + \beta_7 SIZE_t + \beta_8 MARGIN_t + \beta_9 TURNOVER_t + \beta_{10} \\ & TANG_t + \\ & + \beta_{11} ARCP_t + \beta_{12} IP_t + \beta_{13} CCC_t \end{aligned}$$

where, *GROWTH* is Sales Growth Rate; *INVESTMENTS* is capital investments; *LEVERAGE* is financial leverage; *CASHFLOW* is operating Cash Flow; *NDTS* is non-debt tax shield; *ROA* is the Return on Total Assets; *ROE* is the Return on the Total Equity; *SIZE* is the firm size measured as natural logarithm of the Total Assets; *MARGIN* is net-profit margin; *TURNOVER* is the total assets turnover; *TANG* is assets tangibility; *ARC* is the Account receivable collection period; *IP* is the inventory conversion period; *CCC* is the cash conversion cycle.

Using the Hausman test, we examined which regression model was most appropriate, the fixed or random effect OLS model. The results showed that the fixed effects model is best for the given data sample. According to Deloof (2003), fixed effects estimation assumes firm-specific intercepts, which capture the effects of those variables that are particular for each firm and that are constant over time. A disadvantage of fixed effects estimation is that it eliminates anything that is time-invariant from the model.

The results of the regression analysis are presented in Table 5. All independent variables are statistically significant, with most of them at a significance level of 1%. The company's growth has a positive relationship with capital investment, leverage, liquidity measured by operating cash flow, profitability measured by ROA, ROE, net-profit margin, assets utilization and firms size. The growth of the company has a negative relationship with the elements of working capital - account receivable collection period and inventory period, and cash conversion cycle. Also, the relationship is negative with non-debt tax shield and tangibility.

Sales growth is strongly positively influenced by capital investment. Sales growth requires investing in more assets of all kinds. Companies need to invest in fixed and permanent working capital to increase production capacity, output and ultimately increase sales. However, investments in working capital have a positive impact on sales growth, given that the increase in tangibility i.e., investments in fixed assets has a negative impact on sales growth. This can be explained by the insufficient economies of scale and low fixed assets productivity that do not generate a large enough marginal output for each unit of fixed capital engaged. Production of companies in SEE is largely labor-intensive, without a high degree of automatization and robotization that is characteristic in the case of developed market economies.

Corporate growth is a formalization of the adage "It takes money to make money." (Higgins et al., 2022). Sales growth requires investing in new assets to

increase production capacity, and they have to be paid. SEE companies operate in underdeveloped financial markets and do not have many opportunities to raise investment capital. Capital markets are shallow, young and emerging, stock issues are rare in some of these countries, and in some countries are completely absent. Hence, the most important source of financing for capital investments are the internal sources of retained earnings and the accompanying borrowing from banks, which is associated with increased retained earnings (Naumoski et al., 2022). Hence, it is clear why there is a positive statistically significant relationship between the growth of companies and financial leverage. Borrowing by the company is important for financing new capital investments.

Retained earnings and the accompanying new borrowing generate money for capital investments, but only in limited amounts. Unless the company is willing to sell common stock or borrow excessive amounts, this limit sets a growth ceiling that can be achieved without straining its resources. Opportunities for new shares issues on their financial markets are very limited, and SEE companies are moderately indebted. Long-term borrowing, primarily from banks, in these countries is the basis for financing capital investments and amounts to only 10.6% of total assets. However, short-term liabilities are more important, which, as we have emphasized, have a positive impact on growth, rather than investing in fixed assets.

Table 5. Regression analysis

Exogenous variables	Dependent variable: Sales Growth Rate	
	Coefficient	Standard Error
C	-0.9351***	0.2922
Capital investments	0.4361***	0.0879
Financial leverage	0.1371***	0.0289
Operating cash flow	0.0080**	0.0044
Non-debt tax shield	-0.8814***	0.2970
ROA	0.3357***	0.0464
ROE	0.0397***	0.0119
Firm size	0.0509***	0.0148
Net profit margin	0.0469***	0.0155
Assets turnover	0.1659***	0.0164
Tangibility	-0.1523***	0.0535
Account receivable period	-0.0003***	0.00004
Inventory period	-0.0002***	0.00003
Cash conversion cycle	-0.000024*	0.00002
R ²	0.2229	
Adjusted R ²	0.1177	
F-statistic	2.1180	
Prob(F-statistic)	0.0000	

*** means significant at 1%, ** means significant at 5%, * means significant at 10%

Source: Author's own calculations

Operating performances of the SEE companies have positive impact on company's growth. This can be explained in the same line with the above. Namely, the retained profit is the most important source for financing of the capital investments, which in turn are necessary for the growth of output and sales. The more profitable the company is, the more it will be able to generate the necessary capital for capital investments. Therefore, there is a positive and statistically significant relationship between the company's growth and assets utilization (assets turnover ratio) and with the net-profit margin, which are indicators of the company's operating performance. Hence, according to the DuPont formula, they generate ROA, which also shows a positive and statistically significant relationship with the company's growth. Given that additional borrowing added to retained earnings is the second most important source for generating growth, and ROA multiplied by financial leverage (measured by equity multiplier) according to DuPont formula gives ROE, the existence of a positive and statically significant relationship between ROE and company growth is obvious. This confirms the thesis that the better the operating performance and profitability of companies in SEE, the greater their growth.

Companies in SEE experience poor operating performance and low profitability, have moderate indebtedness because they do not have attractive investment projects acceptable for financing by risk averse banks, which together leads to moderate corporate growth.

In this context is the existence of a positive impact of liquidity measured by the operating cash flow ratio with the growth of companies. Total liabilities without debt account for 26.1% of the total resources used by companies to finance growth-generating business operations. The most of those liabilities are current liabilities related to trade credits provided by suppliers. Therefore, the timely payment of those obligations is crucial for maintaining good business relations for securing production inputs.

Although depreciation, after retained earnings, is the second major internal source of funds for capital investments, SEE companies do not invest the full amount, as it is explained above. It is a process of disinvestment. Therefore, the amount of amortization and depreciation expressed through the non-debt tax shield has a negative relationship with the company's growth.

The size of the company also has a positive and statistically significant relationship with the growth of the company. Larger companies are experiencing higher sales growth. In this research the size of the company is measured by the size of the total assets. This is another confirmation of the thesis that investing in new assets that increase production capacity enables increased output and increased sales. Many other authors have found a positive relationship between company size and sales growth (Mateev and Anastasov, 2010; Kachlami and Yazdanfar, 2016; Niskanen and Niskanen, 2006).

The management of working capital components has a negative impact on the growth of companies in SEE. However, the negative impact of working capital components on sales growth is indirect, through their negative impact on profitability which is the basis for generating internal sources of growth financing.

However, in the case of the SEE companies the average account receivables collection period is very long and is 110.1 days with a standard

deviation of 173.3 days. Holding of inventories is also considered necessary to increase production and sales, but on the other hand holding large amounts of inventories results in high storage costs. The larger the inventories and the longer the inventory conversion period, the higher these costs, resulting in lower profitability for companies. The average inventory conversion period for SEE companies is 168.4 days with a standard deviation of 295.4 days. Additionally, it may also be the result of having outdated inventories. The operating cycle as a sum of these two parameters is 278.5 days, which is approximately equal to the number of working days in a calendar year. This means that companies in SEE have poor working capital management, although the account payables period of 167.3 days is larger than the account receivable collection period of 110.1. The long operating cycle affects companies in SEE to have lower turnover and lower profitability (according to the DuPont formula). Additionally in that context is the long cash conversion cycle. Cash conversion cycle is the difference between the operating cycle and the account payables period. It is actually the period in which the company uses money to finance business operations from certain sources. This incurs financing costs and further negatively affects profitability. Due to the indirect impact they have on profitability, the elements of working capital have a negative impact on the growth of companies in SEE. SEE corporate managers need to redesign their operating policies and improve working capital management practices to ensure greater profitability and greater corporate growth.

Although all variables in the regression analysis are statistically significant, the coefficient of determination is still very low. The selected set of variables related to the operating performances and financial policies of the company, as well as the control variables, explain the growth of the companies to a small extent. There are a number of other company-specific variables that affect the growth of companies such as corporate strategy, organization, business processes and practices, innovation, managerial quality, other management characteristics, quality and other characteristics of employees, location, type of ownership, concentration of ownership, corporate governance, etc. Also a number of external factors have a major impact on corporate growth, such as macroeconomic determinants, interest rate, inflation rate, GDP growth rate, level of financial system development, access to financing, monetary policy, exchange rate, government subsidies and development support policies. It is obvious that the growth of companies is a complex issue. These factors are beyond the scope of this paper.

5. Conclusion

Among the earliest research on the growth of companies is Gibrat's law where it is assumed that the size of the firm has a log-normal distribution because the proportional growth rate of a firm is independent of its absolute size. However, a number of studies have refuted this claim, and have shown that successful companies go through several stages in the life cycle, ranging from introduction, rapid growth, maturity to decline. The growth of companies has different intensity in different phases. But the growth of companies is determined by a number of factors of external and internal nature. In this paper, the growth of

companies is defined by the growth of sales. In order for a company to grow, it needs investments in fixed and current assets, which need to be financed. The research on company-specific determinants of corporate growth in this paper was conducted in the case of SEE companies using their financial and accounting data for the period 2011-2019. Given that they operate in emerging markets with undeveloped financial markets, they face with limited access to capital for investing in new facilities that should generate growth. Shares issuance is rare, and in some countries does not exist, so financing their growth is limited to the growth of internal sources of retained earnings and additional borrowing from banks.

Companies in SEE achieved a moderate average annual growth rate of 6.73%, for the period 2011 – 2019, which is lower than the satisfactory for corporate managers. This insufficient growth was mostly due to the low volume of capital investments, which amounted to only 0.78% of the total assets. Although depreciation and amortization accounts for 3.54% of total assets, meaning that they do not adequately replace spent assets. The ability of companies in SEE to invest primarily depends on their profitability, which in turn is low given the low operating performances measured according to the low asset utilization and low net profit margin. Ineffective and inefficient working capital management has an additional impact on low profitability. The growth of SEE companies is positively related to capital investments, financial leverage, operating cash flow, ROA, ROE, firm size, net profit margin, and assets turnover. But it is negatively related to non-debt tax shield, tangibility, account receivable collection period, inventory conversion period, and cash conversion cycle.

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ANALYSIS OF DIGITALIZATION INDICATORS IN THE
REPUBLIC OF NORTH MACEDONIA

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Abstract

Digitalization and digital transformation have a major impact on the sustainability and development of the economy and society. Digital technology is a fundamental force for change in this century, reshaping economies, government and civil society. It affects every aspect of the development of society. The need for digitalization became even more evident due to the KOVID-19 pandemic, because it pointed to the urgent need for mechanisms, tools and adapted regulation for a better organization and a fully functioning society. Different techniques are used to measure the level of digitalization: Digital Evolution Index (DEI), Networked Readiness Index (NRI), Digitization Index (DiGiX), Digital Intensity index (DII), Digital Economy and Society Index (DESI), ICT Development Index (IDI), IMD World Competitiveness etc. Each of these indexes has different methodological approaches and contains different dimensions, indicators and sub indicators for measuring the level of digitalization. The main aim of this paper is to see if the digitalization index in Republic of North Macedonia can be measured and for which index. In this context, and based on existing data, digital indexes or individual indicators will be compared with some countries, as well as with some EU member states.

Keywords: Digitalization, digital transformation, digital society, indexes, development, North Macedonia.

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1. Introduction

The processes of globalization that have taken place in recent years have a major impact on the functioning of society. These processes require businesses not only to survive but also to thrive in a competitive environment. The changes required companies to adapt to the new work environment and brought a high degree of uncertainty in their operations. Such changes required their effective integration that could only be achieved through the use of advanced tools offered by information technologies. Only through the use of such innovative tools offered by information technologies does it enable the business to remain competitive in today's digital economy. Hence, arises the importance of the digital transformation which today is the main driver of business development and society as a whole.

On the other hand, the past few decades are a period of explosive development of Information and Communication Technologies, and according to all forecasts, such development will continue at an accelerated pace. This development of Information and Communication Technologies offers many opportunities to individuals and companies but also challenges. ICT has enabled companies to develop completely new business models that have changed the way they operate. Moreover, such advanced technologies have enabled the digitalization of all aspects of society. The digital way of functioning today has a huge impact on individuals, companies and the whole society.

Today, digitalization is considered to be one of the key drivers of change in any society. Digitalization processes allow individuals, institutions and businesses to completely change the way they work and adapt to turbulent operating conditions. This was especially the case during the pandemic of the Covid 19 virus, where at certain times the whole society functioned through the use of such digital tools. From the education process, public life to the operation of businesses, information technologies have played a key role in overcoming the challenges posed by the pandemic. In such conditions, it has been seen that societies that are fully digitalized have much easier to deal with the problems that bring such crisis situations. It showed how important is the process of digital transformation of society and how much it can contribute to maintaining and improving the quality of life.

There are several different definitions of digitization which differ depending on the context. One of the most common associations with the term of digitization is the transformation from analog to digital. Researchers across different fields would define digitization as the transformation of some type of analog or physical artifact into a digital artifact (Schalmo, Williams, 2018).

On the other side, digitalization is radically changing the fundamental assumptions of the way of life and organization of work in a postmodern society, which is becoming more globalized and more digitalized than ever before. In this context, understanding digitalization is vital for both individuals and any type of organization. One of the definitions of digitalization is given on the Gartner website. In their dictionary, they emphasized that digitalization is the use of digital technologies to change a business model and provide new revenue and

value-producing opportunities; it is the process of moving to a digital business. (Gartner Glossary, 2022).

Digital transformation is the integration of digital technologies in all aspects of business. The accelerated implementation of technology and change lead to completely new markets, new customers, business models, business processes, opportunities and challenges that ultimately lead to a new economy.

2. Digitalization indexes and their indicators

Internationally, various institutions and organizations have conceptualized and published various digitalization indexes. A unique and internationally accepted methodology for measuring the digitalization of countries has not been created. Most indexes are focused on metrics such as infrastructure and access indicators, but the most complex indicators begin to consider other components and dimensions related to the use of digital technologies and digital skills. In this paper, will be discussed the indicators of some digitalization indexes.

The Digital Evolution Index (DEI) measures the rate of change of the digital evolution of developed and developing countries and provides insight-based information to companies, investors. and governments. The index is based on four fundamental drivers: Conditions of supply, Demand conditions, Institutional environment, Innovation and change

The Network Readiness Index (NRI) measures and assesses the dynamics of a country's digital transformation and network connectivity. The NRI 2021 model reflects its core structure with four pillars: technology, people, governance and impact.

The basis of the NRI 2021 model consists of a total of 60 indicators in all 12 sub-pillars. The indicators are: Access, Content, Future Technologies, Individuals, Business, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life, SDG Contribution.

Digitalization index (DiGiX) aims to capture the global evolution of digitalization by tracking this phenomenon in 99 countries. This index combines 20 indicators grouped into six dimensions representing three pillars: supply (infrastructure and costs), demand (users, adoption by government and enterprises) and institutional environment. Each indicator has its own weighting indexes.

The Digital Intensity Index (DII) measures the use of various technologies at the enterprise level. This index is based on 12 key indicators, and a company's score (0 - 12) is determined by how much of the selected digital technologies the company uses. If 0-3 indicators are measured, the company has a very low digital intensity index, 4-6 has a low digital intensity, 7-9 is high and with 10-12 indicators the company has a very high digital intensity index. In parallel with the progress of technologies, the key indicators by which DII is measured are also changing. The set of criteria used by Eurostat is revised and adjusted every year in order to monitor the changes and stages of digital development, but the general idea remains the same: the index is intended to reflect the involvement of the enterprise in the digital transformation in terms of its various aspects.

The Digital Economy and Society Index (DESI) measures the progress of EU countries in terms of the digital economy and society. This index combines a set

of relevant indicators of European digital policy and measures progress from 2014 to date. According to the 2021 report, the content of the DESI framework consists of 4 main dimensions, 10 sub-dimensions and 33 key indicators. The 4 main dimensions are: Human capital, Connectivity, Integration of digital technology, Digital public services.

The ICT Development Index (IDI) is a composite index that combines 11 indicators. This index is designed to be global and to reflect changes occurring in countries with different levels of development. It was developed by the International Telecommunication Union in 2008 in response to a request by member countries to establish an overall ICT index. The results were first reported in the Information Society Measurement Report (MISR) in 2009. It is used to track and compare the development of information and communication technology (ICT) between countries and over time.

IMD World Competitiveness, when making the rating, which is done annually by the World Competitiveness Center, takes into account four factors: economic performance, government efficiency, business efficiency and infrastructure, and thereby measures the prosperity and competitiveness of 64 nations. Each of these factors contains 5 sub-factors that highlight each aspect of the analyzed areas. In total, the world competitiveness ranking contains 20 such sub-factors.

This indicator is used by the business community to help create and validate investment plans and to assess locations for new operations. Governments find important indicators to benchmark their policies against those of other countries, to assess performance over time, and to learn from the "success stories" of economies that have improved their competitiveness. Academics also use the data to better understand and analyze how countries compete in global markets. The indicators are the basis for assessing the readiness of countries to apply digital technologies by the IMD World Competitiveness Center.

3. Analysis of indicators for measuring the level of digitalization in the Republic of North Macedonia

The Republic of North Macedonia faces major challenges in its efforts to better integrate into the digital economy and take advantage of its significant benefits. Overcoming those challenges is a prerequisite not only for the initial digitalization process, but also for further keeping pace with the so-called industrial revolution 4.0 that has the potential to fundamentally change the economy, through technologies such as Big Data, Cloud Computing, Blockchain (cryptocurrencies, smart contracts, etc.), Internet of Things, Machine Learning, etc.

In the analysis, secondary data will be used, which originate from relevant sources, that is, from the State Statistical Office of RSM, which refer to the application of ICT in small and medium-sized enterprises, noting that data for key indicators are missing for one or more years. Also, the data offered by the State Statistical Office is limited to a very small number of indicators.

In this section, a specific analysis and comparison will be made of each of the individual indicators that will be considered (those indicators for which there are official data). What should be noted in this section is that according to the data

available to the State Statistical Office of RSM, there is no measurement of the indicators for SMEs, but the measures apply individually to small and medium-sized enterprises. Well, in this section, the individual measurement of the indicators for small and medium enterprises will be considered. Key indicators for the period from 2016 to 2021 will be analyzed.

In the Figure 1 is shown employees that used computer, Internet and portable devices in enterprises by number of employees. From that picture it can be concluded that this indicator shows a different trend in relation to the use of the three components by the number of employees.

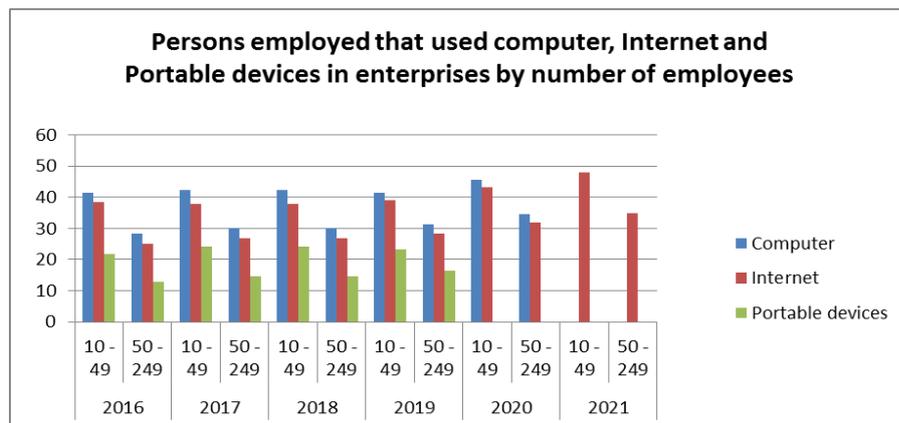


Figure 1. Employees that used computer, Internet and portable devices

The use of a computer by employees in both small and medium-sized enterprises maintains the trend from 2016 to 2020 (for 2021 there is no data). The use of the Internet by employees in both small and medium-sized enterprises shows an upward trend. Namely, among small enterprises, from 38.5% in 2016, the percentage has increased to 48% in 2021, while among medium-sized enterprises, from 25% in 2016, the percentage has increased to 35% in 2021. The use of portable devices in small enterprises shows a downward trend from 2016 to 2019 (there is no data for 2020 and 2021), while for the same period in medium-sized enterprises, an insignificant upward trend is observed. What can be noticed about this indicator is that, both for computers and for the Internet and portable devices, the use by employees of small enterprises is greater.

From the indicator "Having a web site or homepage" shown in Figure 2 it is noted that in the considered period of 6 years there is no significant progress, even a decrease in the percentage of small enterprises that had a homepage or web page is noticed. Among small enterprises in 2016, it was 49.6%, and in 2021 it was 44.6%, while among medium-sized enterprises, during these six years, a growth of 5.1% was recorded. If taken as a whole for all SMEs, it is noticeable that in this indicator in 2021 there is a decrease compared to the previous years 2020 and 2019. The total number of SMEs that reported owning a website or homepage in 2021 is less than 50% of all SMEs, compared to 2020.

The data available to the RSM State Statistical Office for the "Use any social media" indicator are from an older date. From 2017 onwards, there are no new data. According to what is available, it can be said that in the period from

2015 to 2017, almost more than half of small and medium enterprises reported that they use social media in their work. This indicator is shown in Figure 3.

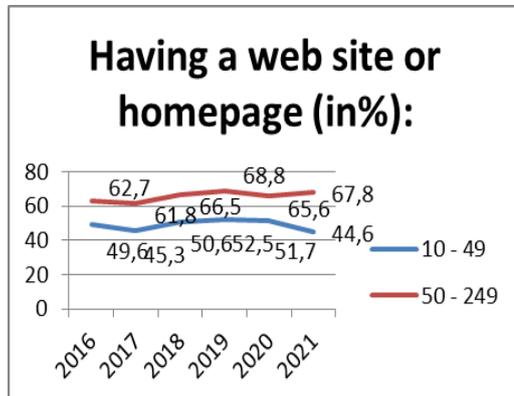


Figure 2. Having a web site or homepage

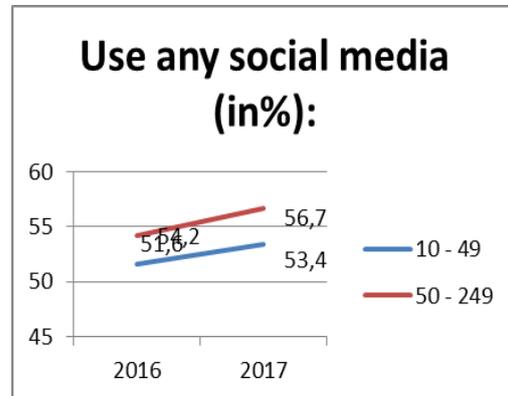


Figure 3. Use social media

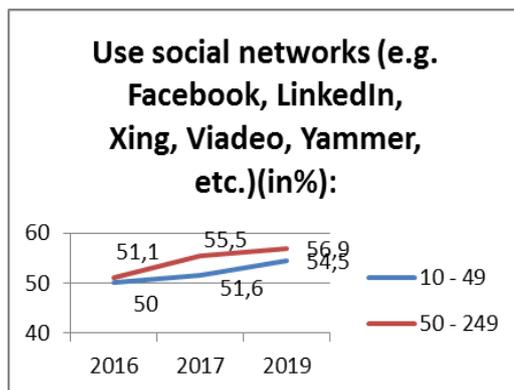


Figure 4. Use social network



Figure 5. Possibility to visitors to customize or design on-line goods or services

From the Figure 4 where the indicator "Use social networks (e.g. Facebook, LinkedIn, Xing, Viadeo, Yammer, etc.)" is presented, an upward trend can be observed among small businesses, which in 2016 was 50%, and in 2019 54.5%, and among medium-sized enterprises, which in 2016 was 51.1%, and in 2019 56.9% (for 2018, 2020 and 2021 there are no data).

The indicator "Possibility for visitors to customize or design online goods or services" both among small and medium enterprises has a downward trend, and the values are at a very low level.

From Figure 6, where the indicator "Tracking or status of orders placed" is presented, it can be concluded that the same as the previous indicator has a decreasing trend among small and medium-sized enterprises, and the values are at a very low level.

The indicator "Personalized content in the website for regular/recurrent visitors" both among small and medium-sized enterprises has a significant downward trend, and the values are at a very low level. Namely, from 15.1% in 2016 among

small enterprises, in 2021 it decreased to 6.1%, and from 16.1% in 2016 among medium-sized enterprises, in 2021 it decreased to 6%.

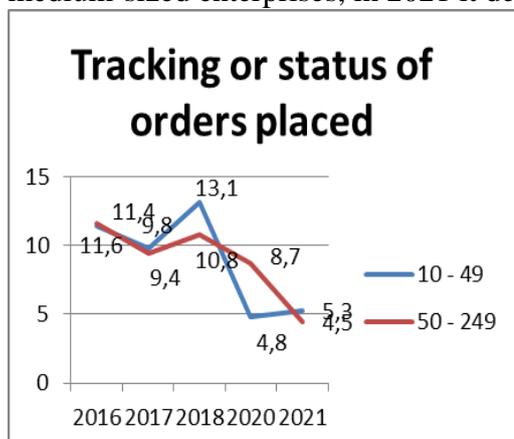


Figure 6. Tracking or status of orders placed

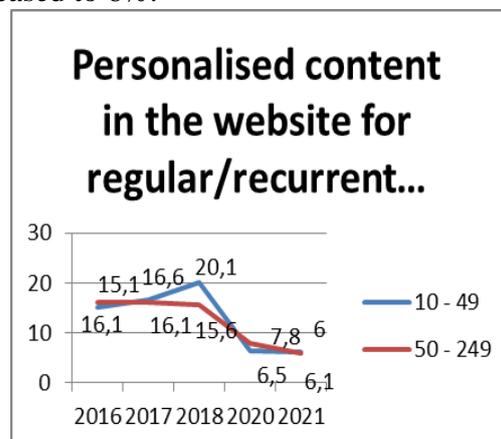


Figure 7. Personalised content in the website for regular/recurrent visitors

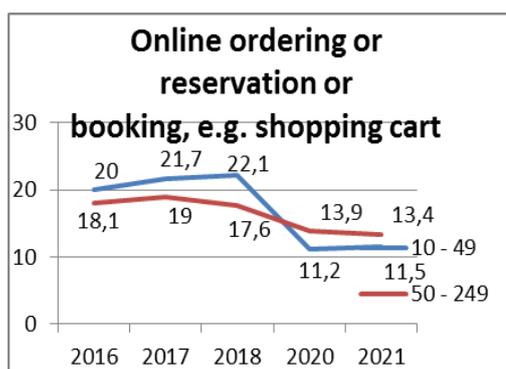


Figure 8. On-line ordering or reservation or booking

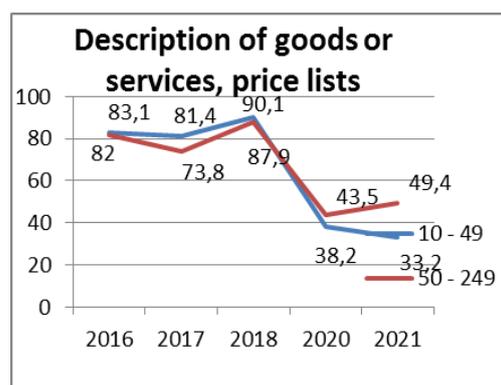


Figure 9. Description of goods or services, price lists

Figure 8 shows the indicator "Online ordering or reservation or booking, e.g. shopping cart" which, both in small and medium-sized enterprises, has a decreasing trend. Namely, from 20% in 2016 among small enterprises, in 2021 it decreased to 11.5%, and from 18.1% in 2016 among medium-sized enterprises, in 2021 it decreased to 13.4%.

The indicator "Description of goods or services, price lists", also among small and medium-sized enterprises, has a significant downward trend, and the values are at a very low level. Namely, from 83.1% in 2016 among small enterprises, in 2021 it decreased to 33.2%, and from 82% in 2016 among medium-sized enterprises, in 2021 it decreased to 49.4%.

The indicator "Fastest broadband connection is at least 30 Mb/s" is shown in Figure 10 and is the indicator that records the greatest growth. While for the period between 2016 and 2019 no significant changes are observed, in the period between 2019 and 2020 there is a large growth. During this period, the number of small and medium-sized enterprises that have a maximum contracted download speed of the fastest Internet connection of at least 30 Mb/s is doubling (in small

enterprises, this increase is from 31.3% in 2019 to 76.3% in 2021, which is more than double, and in medium enterprises the increase is from 41.8% in 2019 to 77.2% in 2021 which is almost double). The doubling of the number of enterprises using super-fast Internet is primarily due to the fact that their competitors are already switching to ultra-fast Internet and have a maximum contracted download speed of the fastest Internet connection of at least 100 Mb/s. From Figure 11 for the indicator "Enterprises who have purchased cloud computing services" it can be concluded that from 2016-2018 there is a growing trend, but after 2018 there are no official data for this indicator.

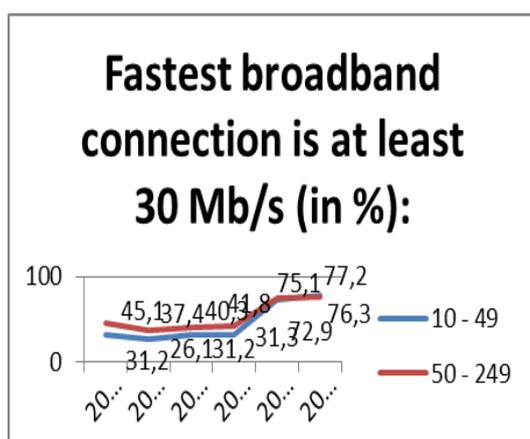


Figure 10. Fastest broadband connection

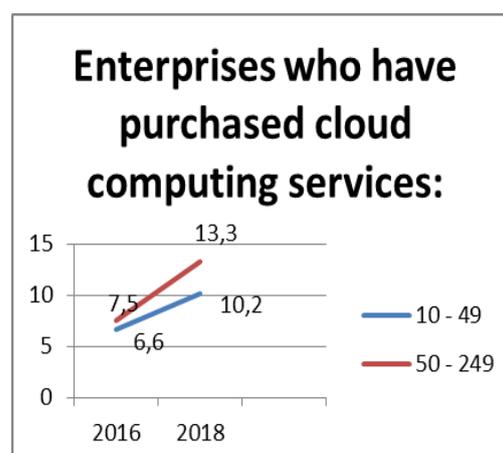


Figure 11. Enterprises who have purchased cloud computing services

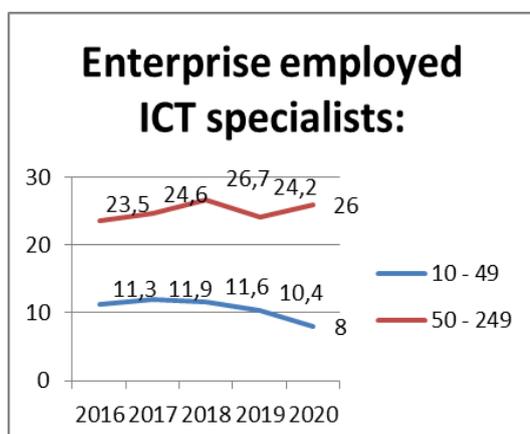


Figure 12. Enterprise employed ICT specialist

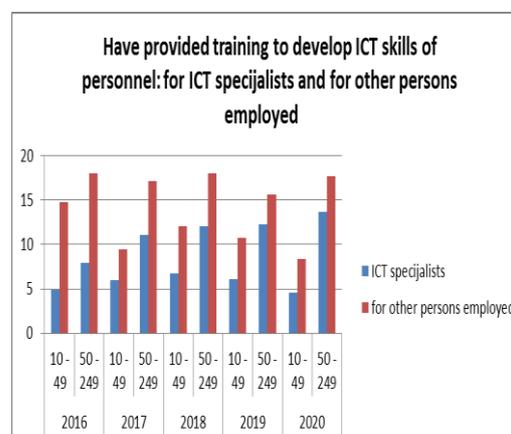


Figure 13. Training to develop ICT skills

As for the indicator "Enterprise employed ICT speialists", which is shown in Figure 12, it is decreasing in the considered period. According to the data for this indicator, it can be concluded that small and medium enterprises have different strategies when it comes to the employment of ICT specialists in their enterprise. While medium-sized enterprises maintain a continuity in the employment of ICT specialists, which is 23.5% in 2016. and 26% in 2020, a continuous decrease was observed among small enterprises, namely 11.3% in 2016. to only 8% in 2020.

This means that small enterprises with up to 50 employees are not very interested and do not invest in hiring specialists from the ICT field.

From Figure 13, where the indicator "Have provided training to develop ICT skills of personnel" is presented, it can be concluded that in the case of small enterprises, there is a decrease in the considered period (for the year 2021 there are no data) both for ICT specialists and for other employees. while, in medium-sized enterprises, there is a growing trend for ICT specialists, and for the rest of the employees in 2021, the same level as in 2016 is maintained. This indicator has higher values for employees in medium compared to small enterprises.

The indicator "E-sales: have received orders via computer networks", which is shown in Figure 14, is increasing. If in 2019 only 2.9% of small and 6.3% of medium-sized enterprises achieved sales, in 2021 that percentage increased to 8.8% for small and 13% for medium-sized enterprises.

Figure 15 shows the indicator "Web sales: received orders for products or services via a website", which, like the previous indicator, is increasing. If in 2019 only 2.7% of small and 6% of medium-sized enterprises made web sales, that percentage increases to 8.5% for small and 11.7% for medium-sized enterprises in 2021.

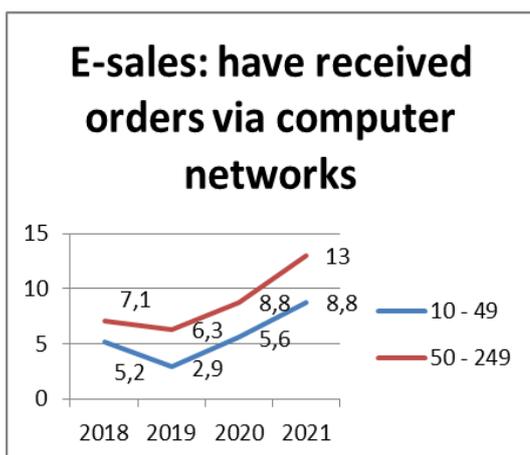


Figure 14. E-sales: have received orders via computers network

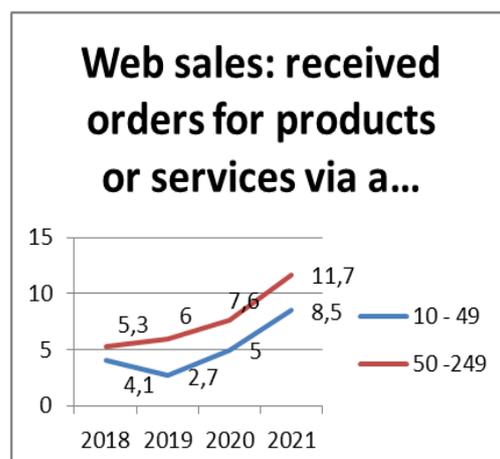


Figure 15. Web sales: recived orders for products via a website

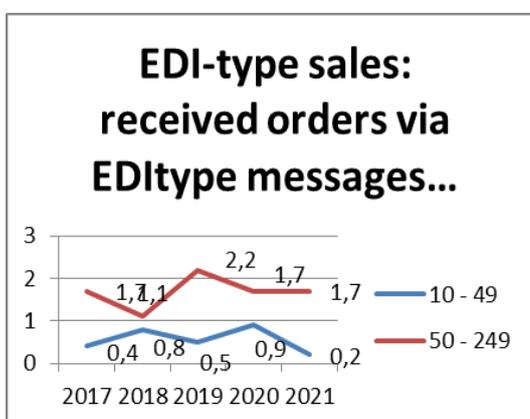


Figure 16. EDI-type sales: received

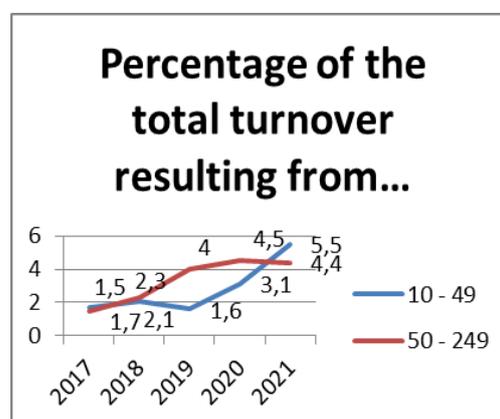


Figure 17. Percentage of the total

orders via EDI type messages

turnover resulting from orders received via a website

As can be seen from the chart Figure 16 for the "Edi-type sales: received orders via EDI type messages" indicator, there are oscillations in the considered period. However, despite the annual ups and downs, in 2021 medium-sized enterprises remain the same percentage of 1.7% as in 2017, in contrast, in small enterprises that also record annual ups and downs, in 2021 with only 0.2% is a decrease compared to 2017 when there was 0.4%, but still a more characteristic decrease is observed from 2021 compared to 2020 when edi - sales were represented by 0.9%. The indicator "Percentage of the total turnover resulting from orders received via a website" has recorded continuous growth since 2019. The data shows that 5.5% of small and 4.4% of medium-sized enterprises in 2021 make web sales in relation to total sales, compared to 2019, when the percentage was 1.6% for small and 4% for medium-sized enterprises .

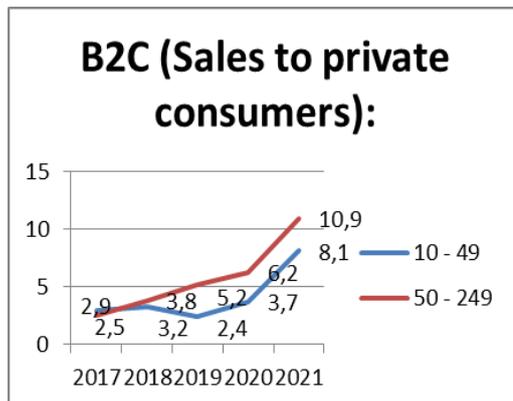


Figure 18. Business-to-Consumers sales

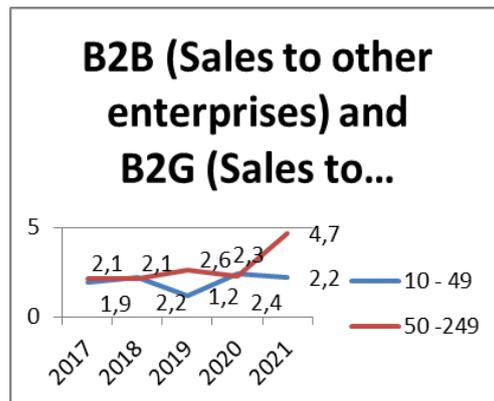


Figure 19. Business-to-Business and Business-to-Government sales

The "B2C" indicator shown in Figure 18 shows a significant increase, from 2.9% among small and 2.5% among medium-sized enterprises in 2017 to 8.1% among small and 10.9% among medium-sized enterprises in 2021 year.

Figure 19 shows the "B2B and B2G" indicator, which shows an insignificant increase among small enterprises, from 1.9% in 2017 to 2.2% in 2021, while a more significant increase is observed among medium-sized enterprises, which from 2.1% in 2017 to 4.7% in 2021.

According to the data presented, it can be concluded that the key indicators related to e-commerce, except for the indicator related to edi-sales, in all other indicators in 2021 there is a growth compared to 2019. This is primarily due to the health crisis caused by the global pandemic with the Covid19 virus.

European Commission in its report on the progress of the Republic of North Macedonia, published in October 2020, notes a 20% increase in the volume of electronic commerce (electronic commerce as a whole, not only SMEs) compared to the previous year, which is undoubtedly due to the pandemic and the health crisis and the processes of adaptation to the new situation by both companies and consumers. This shows that in conditions of extraordinary circumstances, the

Macedonian economy together with the stakeholders have the capacity to adapt. As for the reviewed key indicators that relate to the digitalization of business, progress has been observed over the years. However, it is obvious that this is not enough and the question is constantly being asked where are the SMEs from the Republic of North Macedonia in relation to the countries of the Western Balkans and in relation to the EU countries.

What should be emphasized is that SMEs should take advantage of this period and continue with the changes, adjustments and adaptation that have been started, all in order to continue with an increased pace in the digitalization process and not allow stagnation or even more regression of the already started processes.

Conclusion

Digitalization of small and medium-sized enterprises is of great importance not only for enterprises but also for the development of the economic, social and general situation in the country. Digital transformation completely changes the way that companies operate and is a necessary process especially for small and medium-sized enterprises, which will contribute to the development and offering of better and more innovative products and services on the market. With the process of digital transformation, SMEs increase their competitiveness not only on the national market, but also beyond. Namely, digitalization is no longer a choice that only large companies can afford, but a necessity for SMEs to adapt to the new reality and keep pace with global economic trends.

From the figure shown, a general conclusion can be drawn which indicators are available for measuring the level of digitalization of SMEs in the Republic of North Macedonia, for which of them there is no data in the last year and what is their trend.

From the analysis of the indicators related to the digitization of SMEs in Macedonia, which are officially published on the website of the State Statistical Office, it can be concluded that there are only 22 measurable indicators, of which there is no data for 2021 for 7 indicators. Considering that there are different indexes of digitalization with different number and types of indicators, it can be said that the largest number of the analyzed indicators are incorporated in the Digital Intensity Index and 6 indicators related to electronic commerce. Namely, out of 12 key indicators for measuring DII according to the report from the European Commission from 2021, 8 indicators can be used. Whereas, a very small number of indicators can be used to measure the DESI index, which measures the progress of EU countries in terms of the digital economy and society. Of the 33 key indicators of this index, only 8 can be used by the State Statistics Office.

When it comes to the trend of the presented and analyzed indicators, it can be concluded that for 7 indicators an upward trend was observed in both small and medium-sized enterprises, while the same or decreasing trend was observed in the rest of the indicators.

The general conclusion is that although some initial steps have been taken in this domain in our country, but the implementation of digitalization is still at a relatively low level, but it is a desirable situation for companies in its necessary dimensions.

In the Republic of North Macedonia there are institutions, such as the Ministry of Information Society, which is competent for appointing certain agencies and to

monitor individual dimensions, sub-dimensions and indicators for measuring the level of digitalization. Such agencies are the Agency for Electronic Communications, the National Broadband Competent Office, etc. They should ensure continuous provision of data and improvement of the situation regarding the development of digitalization in all areas. They should provide measurable data for all indicators in order to be able to monitor progress in the digitalization of SMEs in our country and to be able to make a comparative analysis both with the countries of the Western Balkans and with the EU member states. With the existence of such overall data, it will be known exactly what measures should be taken to improve the level of digitalization in the Republic of North Macedonia.

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REGIONAL E-GOVERNMENT DEVELOPMENT IN THE
VARDAR PLANNING REGION

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Abstract

The revolutionary changes in society caused by the new information and communication technologies (ICT) forced countries worldwide to develop sophisticated solutions for digitizing processes in the public sector, a process known as e-government. The purpose of such application of ICT in the work of public administration is a better environment for the functioning of both: the citizens and business community, as well as the public sector itself, by achieving greater transparency, effectiveness, and efficiency in its operations. However, the benchmarking process that is established to follow the e-government development and exchange the best practices notice a significant disparity in the e-government implementation at the world level. The disparity is present also at different levels of organization within a country, and even it is not always measured. Such an example is the Republic of North Macedonia (RNM) with no equal e-government development at the central, regional, and local levels. The development of e-Government at the regional level significantly lags behind the development of this concept at the central level. Hence, this paper aims to analyze the development of e-government at the regional level. As pilot research, one of the country's eight planning regions is used – the Vardar Planning Region. In order to get a complete picture of the current situation related to e-government development, the focus of the research is on the official website of the Center for Development of the Vardar Planning Region. The research presents a longitudinal observation over a period of years, with information collected in two moments. The analysis of the research results indicated a low level of development of e-Government at the regional level, with room for improvements.

Keywords: e-government, public sector, regional level, Vardar Planning Region.

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1. Introduction

In the first decades of the twenty-first century, the world faces the challenge of a revolutionary transition to a new society where information and communication technologies (ICT) are essential tools for work, and information is the most crucial resource. This new Information Society changes human functioning in all areas of life both from a social and economic aspect but also changes the way of functioning of the sectors in society: business, non-business, and public. The public sector's changed way of functioning with ICT in the literature is known as e-government.

The introduction of the e-government concept has the task of improving the citizens' lives and reforming the bureaucratic way of functioning of the countries. Furthermore, as a longitudinal process with many phases, e-government development is the subject of measurement and benchmarking with the intention of not only locating the achieved level of development but also pointing at the reasons for such a situation and pushing countries for further e-government development.

The implementation of the e-government concept is growing rapidly. During the past years, out of a total of 193 member countries of the United Nations (UN, 2008), 179 countries had developed strategies for e-government, while already in 2012 that number increased to about 190 countries that have developed strategies. In the Republic of North Macedonia (RNM), although the beginnings of the development of e-government date back to 2000, it was only in 2010 that a National e-Government Strategy 2010 – 2012 was prepared for the first time (MIO, 2010).

Governments around the world are in different stages of e-government readiness and development, and mostly is an evident positive global trend of e-government development. Although, in general, the implementation of e-government recorded continuous growth during the entire period, measurements in 2018 rank our country in 79th place. So while the RNM is rated with a high index for the development of e-government (UN, 2018), the measurements carried out regarding the achieved level of sophistication of e-services show that the RNM still lags behind the average of the Union countries. The development inside the country is not a field of measurement, but even that is more than obvious that e-government implementation doesn't apply equally to all three levels: central/state, regional, and local/municipal levels. The current situation regarding the implementation of e-government at these three levels shows that there is a disparity:

- the analysis of the e-government project realization points out at lack of projects at a regional level,
- the development of e-government has the highest achievements at the central level,
- there are achievements at the local level that are close to those at the central level.

So, the focus of this research is focused on analyzing the situation of e-government development at this regional level as the less developed level of e-government.

The middle institutions that connect central and local government, on one side, but also citizens, civil society organizations, and the business community with government, on another side, seems that a simple analysis of e-government development at the regional level can be done by the analysis of the centers of planning regions. Therefore, for the purposes of this paper, in the role of a pilot project, the subject of analysis is the Center for Development of Vardar Planning Region (CDVPR) established in the Vardar Planning Region.

Furthermore, the paper is structured as follows: section two are introduced the main topics such as e-government definition, regional development in RNM, and the Center for Development of Vardar Planning Region. Then, the third section has presented the methodology used. The fourth section gives an overview of the results, and at the end, the fifth section presents conclusions and recommendations for further research.

2. An overview: e-government, regional level, Republic of North Macedonia

2.1. E-government introducing

There are enormous definitions and explanations of what e-government is. In the beginning, e-government was defined as the "use of ICT in public administration and public services delivery by Internet" (Bannister, 2007) to introduce this concept to save time and money for both users (citizens and the business sector) and service providers (public administration). It should enable easier access and simplified procedures for users in obtaining public services, increase administrative efficiency and build a transparent and democratic society (Mundy & Musa, 2010). Furthermore, this concept is seen as something that improves the governance process due to the difference in the traditional delivery of public services because it is electronic, not paper-based, 24/7 on client disposal, and gives information and service delivery no matter its complexity (Alenezi *et al.*, 2015). Today, e-government is elaborated as the introduction of ICT as tools of the public administration reform process with the task of reengineering administrative processes through the networking of institutions in the public sector with the purpose of data exchange, processing and storage (back office). The goal is to achieve the realization of electronic counter operations (online front office) and the provision of e-services that will meet the requirements and expectations of the stakeholders (Bogdanoska Jovanovska, 2022).

The development of e-government is a strategic priority of every state. It represents a planned and structured process through which organizational changes at each level (central, regional, local) are carried out inside the state institutions. This contributes to improving the quality of the service-level relationships between the government and its various stakeholders, such as the citizen, business and non-governmental sector and other government agencies.

2.2. Regional level organization in the Republic of North Macedonia

According to the Law on Territorial Organization of Local Self-Government, the regional level in the RNM consists of eight planning regions that serve statistical, economic, and administrative purposes. In order to carry out professional work of importance for the development of the planning region, one Center for the development of the planning region in each region was established. Each Center is connected with the institutions of the state in two directions: it cooperates with the municipalities that belong to that planning region, on the one hand, and it cooperates with the institutions of the central government, on the other hand.

The development of the planning regions is supported by establishing centers for development as public institutions. However, those institutions are facing a real problem related to the success of their operations, and in the relatively short period of existence, the development isn't at a satisfactory level. One of the reasons for the inefficiency and uneconomical performance of the centers is the low level of ICT utilization in communication, and interconnectivity with other public institutions, as well as citizens and businesses as its clients. Namely, there is a struggle to be organized to provide the necessary information and services for the business sector and civil society organizations from the region, while on the other hand, for the municipalities in the composition of the specific planning region.

As a pilot project for this research, we used the not-so-developed planning region – Vardar Planning Region (VPR) and the Center that is established – Center for Development of the Vardar Planning Region (CDVPR).

2.3. Center for Development of the Vardar Planning Region

The Vardar Planning Region (VPR) is one of the less developed regions in the RNM according to the Decision on the classification of planning regions according to the degree of development for the period from 2018 to 2023 (Official Gazette of the R. Macedonia" no. 234/2018). According to the data of the State Statistics Office for 2018 and according to the changes in the territorial division since 2014, 7.33% of the total population in the country lives in the region, and in 2019, 5,440 active business entities were registered in the Vardar planning region (State Statistics Office of the Republic of Macedonia, Business entities, last update 04/02/2020). The number of municipalities is 9 (municipality of: Veles, Kavadarci, Negotino, Demir Kapija, Rosoman, Gradsko, Chaska, Sveti Nikola and Lozovo and there are 216 settlements in the Vardar planning region (State Statistics Office of the RNM, Spatial units, last update 09.10.2019).

The city of Veles has a central place in the region, and it is the part of the municipality with the highest number of inhabitants, where the CDVPR is located. CDVPR is a legal entity established as an institution of the public sector to perform professional work of importance for developing the VPR. The Center participates in planning, implementing, and carrying out the professional and administrative-technical work of the Council for the Development of the Planning Region. The Center cooperates with local self-government units in the region and

helps them provide professional and technical assistance and strengthen inter-municipal cooperation. The Center also provides professional services to civil society organizations and other interested parties for the preparation of projects in the field of regional development. Its main task is to stimulate development at the local and regional level, strengthen the capacities of the networks in the local and rural community, and the business community, strengthen the principle of public-private partnership, and act in the direction of raising the quality of life. Within the framework of the CDVPR, an auxiliary body has been established—the Business Center for Support and Consultative Services for Small and Medium Enterprises (BC), which aims to help and provide support to micro, small and medium enterprises from the region. BC supplemented the existing services aimed at the business community in terms of quality - applicability, expediency, and quantity, and added value – an increased menu of services and scope of users. The BC was established to supplement and expand the services offered by the CDVPR to the private sector in the region. BC offers services to the private, public, and civil sectors, primarily in the area of general information, but also for the preparation of project proposals for national and international funds, mediation in the implementation of projects, services for the implementation of training for project management and strategic planning, services for creating analyses, campaigns, promotional events, participation in fairs.

2.4. The front-office benchmarking of e-Government

The e-government concept in RNM represents a logical follow-up to the global trend of:

(1) introducing ICT in all segments of society and

(2) starting the transformation process of how the state and state administration function to create a modern democratic society. This society will produce quality and economical government services. Furthermore, it will improve the relationship between citizens and government, bringing citizens and businesses closer to their governments.

The analysis of the existing benchmarks shows a wide range of benchmarks (Bogdanoska Jovanovska, 2016), including those that monitor the websites of public institutions (Bogdanoska Jovanovska *et al.*, 2013). According to UNDPEPA (UNDPEPA, 2002), a country's level of progress in e-government is partly dependent on the presence or absence of specific website features and services. Although there are divided opinions about this benchmark, it is still used. Along those lines, the Web Measure Index (UN, 2008) is used hoping that it "allows to benchmark ability to deliver online services to the citizens" and that "it can be a useful tool for developers of policies as an annual benchmark".

E-government benchmarking studies, which focus on the delivery of services over the Internet, and monitor institutions' websites are called supply-side oriented benchmarks that monitor front-office development. These benchmarks rely on indicators such as the number of online services available to citizens and business communities and the percentages of government departments with websites and websites that offer electronic services (Janssen *et al.*, 2004).

Many countries such as Great Britain, Australia, etc. have established internal benchmarking for measurement of e-government development at different levels (central, regional, local) but it is not the case with RNM. So this paper is kind of the first step to initiating an idea on regional benchmarking on the supply side of the e-government development in RNM.

3. Methodology

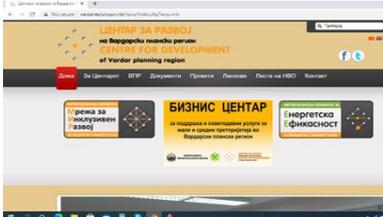
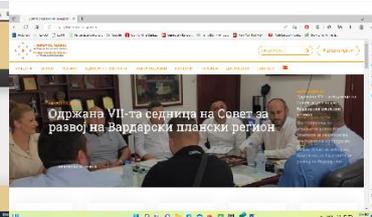
The research is qualitative, longitudinal, and with using observation as a method. The analysis for the development of e-government in RNM at the regional level was applied to one planning region Vardar Planning Region (VPR). The subject of research was CDVPR.

The research process has a longitudinal approach with two measurements realized in two moments July 2020 and July 2022. For the research purposes, the method of observation was used based on desk research of CDVPRs' website (5 websites of the CDVPR website). The research process scope, creating 14 indicators grouped into 5 groups. The findings are presented in the table. The table (Table 1) has three columns: the first one gives the indicator's name and description; the second column gives findings at the first observation in July 2020 and the third column gives observation at the second observation and July 2022.

4. Research results

The findings during observation are given at Table 1, and for each of five indicators we give a short description. As is it was mentioned above, the CDVPR's website was the focus of the research. The limitation of the research is that were observed only 5 websites in the scope of overall website of the CDVPR. The focus of the research mainly was: what kind and what categories of information has the existing websites; what is the technical and esthetic performance of the website; an analysis of existing or not existing e-services at the regional level; as well as indicators that point out at readiness for e-government or e-democracy. The characteristics of "user-friendly" and accessibility of the website, were also observed.

Table 1. Results of research

	Indicators	July 2020	July 2022
1. General data for the website			
1.1.	Availability	 https://vardarregion.gov.mk/	 https://vardarregion.gov.mk/
1.2.	Data of	No data	September 2020

	create		
1.3.	Updates	No data/ longer than 90 days	On regular base
2. Content			
2.1.	Information	<i>Overall:</i> general information for the region. <i>Partly:</i> scope, organizational structure, council, budget, procurements, public relations, documents, projects....	Partly transform to overall + info for corruption
2.2.	Information structure	<i>Positive:</i> way of presenting info is simple/ many is understandable, drop-down list shoe up on click. <i>Negative:</i> not enough info/ not clear structured/ focus on news in central part of the page/ empty pages/ only for promoting purposes.	<i>Positive:</i> Keep all positive + more info/ full pages/ many news <i>Negative:</i> promotion purposes still present/ not clear structured info
2.3.	E-services	Website didn't offer e-services	The website didn't offer e-services
2.4.	E-services structure	/	/
3. Tools			
3.1.	E-democracy	Not functional e-survey	Functional – “e-idea”
3.2.	Communication tools	Basic contact data: address, phone numbers, e-mail, form to let info for client contact	Same + working time
4. Connection with other websites			
4.1.	Connection with other websites	There are link for redirection to other websites	same
4.2.	Manner of connection	Links at main page	Links to the websites of the municipalities at the bottom of the first page
5. User friendly (technical and esthetical)			
5.1.	Integration/ social media	Facebook и Twitter	+ Instagram
5.1. 2.	Meta tags	no	Meta tags are included without description
5.1. 3.	Popularity	8.333.318 place according to Alexa	It is not ranged
5.4.	Internal links	There are links with too long text or without any text	Same
5.5.	Headings	Very often no define titles,	All pages use define titles,

		or it is no good define	but some are not good to define
5.6.	Content	On average 411 words per page	On average 834 per page
5.7.	URL format	пронајдени URL-адреси но не се добро напишани	Сите URL-адреси се добро напишани
5.8.	Images	There aren't defined sizes of pictures. The browser didn't change of any picture	75,0% of the pictures are without defined sizes at HTML, only at 25% of it the browser change it
5.9.	Responsive Design	It is not optimized for access from mobile phone or tablet	It is optimized for access from mobile phone or tablet.
5.10	Server behaviour	Sent code for status 404 (http for not existing page); use GZIP coding; sometimes exist redirection (http 301); exist duplicate of the content that classify as two different websites (http://www.varдарregion.gov.mk and http://varдарregion.gov.mk)	<i>Improved:</i> not use GZIP coding/ exist redirection (http 301); follows best practice (http 301) for redirection from http://www.varдарregion.gov.mk to http://varдарregion.gov.mk
5.11	Analytics	No use software for analytics	Use software for analytics
5.12	Page titles	There are titles of the website pages	There are titles of the website pages
5.13	Incoming links	The research on 5 pages of the CDVPR webpage point out at existing of 3.169 pages at 14 domains that link to this webpage. number of links constantly is change	The research/testing on 5 pages of the CDVPR webpage/ point out at existing of 7.669 pages at 153 domains that link to this webpage/ number of links constantly is change
5.14	Printability	Not fully optimized for printing	Fully optimized for printing
5.15	Contrasting	Automatic problems with color contrast	No problem with color contrast
5.16	Speed	Slow (5,5 seconds at 4G connection)	Slow (5,2 seconds. at 4G connection)
5.17	Navigation	Easy for main menu/ under-menu with drop-down/ max. 3-4 clicks	Same + additional menu at the bottom of the each page
5.18	Search	Good	Good
	Accessibility	Not adapted	Partly adapted

5.19	(for disability users)		
5.20	Multi-language	Macedonian and English (only for main titles)	Same + some text is translated

Source: The Authors

The results from "General indicators for websites" indicate that the CDVPR has an official website with a registered and functional gov.mk domain without correct information about the date of establishment. Therefore, it can only be researched when the domain was purchased but this is not taken as an authoritative fact and is not an indication of when the website was created and launched because the domain name and website are two different things.

The second group of indicators, "Content" indicates a wide range of information from different areas but mostly for promotional purposes – the website serves as PR tool for the CDVPR. Also, it was noticed that the information mostly isn't well planned and grouped into appropriate categories and do not provide a standardized user experience. In fact,

- only general information (structure, organizational set-up, information about employees, names, position and contact data, as well as information about the activity of the institution, legal regulation and internal organization, functions and competencies), on one hand,
- and general information of the region (history, geographical position, demography, infrastructure, education, culture..., on the other hand),
- as well as list of civil society organizations, are fully presented.

The information as: list and description of services offered, instructions, brochures and leaflets, forms, information on fees and deadlines are offered only in part. Budget information, such as budget projection (annual financial plans), current income and expenditure, final accounts, audit and financial reports, public procurement information such as annual public procurement plan, but less often have published detailed information on public procurement processes (including and contracts) are only partly presented. The information for active and completed opportunities for application, instruments, funds and calls are not published at website. While the news about realized events is constantly posted. It is missing a published calendar of future events and announcements.

Further, we find out that the CVRPR website does not offer electronic services. The only thing it offers is e-information for access to public information. It does not offer prescribed web forms/web forms for the services, but it does offer the ability to access and download published documents. This situation was improved at the second observation, two years later, on the way that partly information becomes overall.

The third group of indicators, "Tools" included in the research, indicate the website's opportunity and capacity in offering various tools for e-democracy and e-communication.

During the first period of on-desk research, CRVPR's website offered the possibility of an online survey (a tool for e-Democracy). Still, it was non-

functional, outdated, and no longer exists – during the second observation two years later. Moreover, the communication tool available on the website was minimal: only e-mail and some social media. However, to achieve even more successful external communication, the website needs to offer other communication channels such as chats, mailing or even chat-boot that are non-existent during the research period.

According to the fourth group of indicators “Connection with other websites” it was found out that there is a partial connection between the web pages in the VPR. This is from the website of the Center through text (outbound/outbound) links organized in a list. So it is possible to move to the official web pages of the municipalities from the VPR. A big drawback was that the municipalities are not connected with the Center electronically to exchange information and data (except e-mail communication).

The last group of indicators named as “User-friendly” covers the data obtained on the functionality and design, that is, technical characteristics and aesthetics of the analyzed websites. Namely, it is not enough to just make a website, but it needs to be well-designed, efficient, impressive, easy to remember, with the main emphasis on the user experience - all in order not only to keep the user's attention but and help him find what he's looking for. To get satisfied customers, every website needs to offer a quality product that will be maximally functional, simple, understandable and adapted to users' needs. To investigate whether the CDVPR webpage(s) are easy to use (user-friendly) and accessible, a series of tests were performed. The results show that the website does not use recognizable analytics software, so there is no data about visits, downloading information, market research, or evaluating and improving the website's effectiveness. page, etc.; the obtained results regarding the connection with social networks show that the CRVPR website has a connection with Facebook and Twitter. The website does not include metadata, i.e. it does not use a description tag that is improved at the second observation. In terms of popularity, according to Alexa, the website of CRVPR is ranked 8,333,318 in the world, while at the second measurement, it is still no ranged – no improvements on this field. The content on web pages strongly correlates with search engine rankings, and it is improved at the second measurement. Headings, as signposts for users and search engines, define which parts of web content are important and show how they are interconnected. They are used to improve the website's content, so they should be semantically correct. That should not be skipped. Many pages on the CRVPR website do not use defined headers, and some do not define the headers correctly, which is improved at the second measurement. The Center's website has well-defined page titles. They are used correctly, which is good because search engines display page titles in search results and also use them to recognize what information web pages contain. Ideally, page titles should contain the search term for which the website is optimized. Analyzing the web pages showed that CRVPR has a URL that is not so well thought out.

Further on, the main problem with links is the same description being used for more than one site, links on the website that use too long text, and links that do not have text describing their destination. The observation points out that:

- the CDVPRs' website handles missing pages correctly by sending a 404 HTTP status code;
- GZIP encoding/compression is used, which reduces the loading time of the web page;
- some sites follow the best practice of using a permanent (HTTP 301) redirect, and some do not.

Also, CRVPR has duplicate content, which is wrong because they are technically classified as two different websites, and search engines can lower a website's rank if they find the same content on two different URLs. Further on, firstly, the website wasn't designed to work on the small screen size these devices have which was improved at the second measurement. Also, the loading time was long, but it was improved later on. It was found that the Center's website is searchable but hasn't good contrast between the content and the page's background, which is improved at the second measurement.

There was an improvement in the part related to the images, so now the browser resizes the images. The website now gives access to users with different devices and web browsers but not to all users regardless of their disabilities. Additionally, only the official language of the majority community in the municipalities is used for posting information. An English version is used only for titles and partially for some information (at the second observation).

3. Conclusion

The complete analysis of this research points out a deficient level of e-government development at the regional level in the RNM, based on the findings related to the VPR by measuring CDVPR's website. The results point out at the first level of e-government development (of five levels well known in the theory). As a result of finding that the CDVPR's website contains and offers only information and doesn't offer e-services. Those characteristics of the website fit to "Information phase" - the first phase of e-government development (Layne and Lee, 2001), which means: an online presence, cataloguing of information, no connection between public institutions, or possibility for e-services realization. The research is very limited because it not includes back-office situation. Hence for future research we recommend widening the research process with including back-office, as well as widening to the other planning regions in RNM.

Considering the fact that there is still a small number of written materials on this topic in the Macedonian language, the paper itself can be observed as a type of contribution to the directions for future development of e-government in our country.

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THE IMPACT OF THE CORONA CRISIS UPON PUBLIC
DEBT OF THE REPUBLIC OF NORTH MACEDONIA

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Abstract

The occurrence of the world-wide crises has caused economic problems for many countries, as has the occurrence of the Corona crisis caused a global economic problem. Based on empirical macroeconomic research, it can be concluded that most countries have not proved to be economically ready to overcome the Corona crisis, including the Republic of North Macedonia. Namely, with the onset of the crisis, there was a need to create state packages of financial assistance to citizens and businesses, therefore their financing became a problem for the government because it faced a lack of funds, that is, the budget deficit increased further. As a result, the Republic of North Macedonia had to borrow additionally primarily on the international financial market, which increased the country's public debt. The purpose of this paper is to examine the impact of the Corona crisis on the economy of the Republic of North Macedonia with special reference to the movement of the budget deficit and the movement of public debt of the Republic of North Macedonia. The research will be performed using secondary research methods that incorporate the use of existing data published in reports, analyzes and studies. Namely, the following secondary research approaches will be applied: content analysis and secondary analysis. Appropriate criteria will be used when selecting secondary data in order to increase the reliability and relevance of the research. The final part presents the results of the conducted research which indicate that the beginning of the Corona crisis had a negative impact on the Macedonian economy, namely the crisis caused a drastic increase in the budget deficit and public debt of RNM to the extent that this growth violated the Maastricht convergence criteria to which RNM is striving towards.

Keywords: Public debts, Budget deficit, Financial market, Corona crisis.

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1. Introduction

The Corona crisis is one of the biggest crises that has hit the world since the Second World War which had great impact on the world economy, especially on the indebtedness of national economies. Namely, the Corona crisis caused the growth of budget deficits in many countries because governments were forced to create financial packages to maintain the stability of the national economy, that is, to help businesses and citizens. In order to amortize the disorder of the balance between the revenues and expenditures of the budgets, governments began to borrow from domestic and foreign financial markets to cover the high budget deficits, that is, to finance the financial support packages aimed to ease the economic impact. Like many countries in the world, as a result of the Corona crisis, the Republic of North Macedonia has faced an increase in public debt. It is peculiar that the increased demand for financial assets on the international financial market affected the interest rates of bonds leading them to their increase. The focus of this paper will be the impact of the Corona crisis on the public debt of the Republic of North Macedonia.

2. Budget deficit

A budget deficit is a state in the national budget where the cost of financial resources by the state exceeds the income collected by the state from taxes, fees, customs, etc. (Fiti, 2004, p.227) The term budget deficit refers to the country's budget, but in practice it can also be found in the financial operations of business entities.

Budget deficit, specifically, the lack of financial resources, must be covered in order to avoid disruption of financial flows that could result in macroeconomic instability and market distortion. (Trajkoski, 1996, p.25) Countries can usually cover this by borrowing from domestic and foreign financial markets. The deficit as an accounting category is added to the public debt from year to year.

The deficit in the public budget can be the cause of the occurrence of macroeconomic problems, but also the unsettlement of the country's financial credibility, as (Trajkoski, 1996, p. 26):

- 1) Interest on debt must be paid every year and
- 2) The high percentage of public debt can make further borrowing more difficult.

2.1 Ways of financing budget deficit

According to the World Bank, there are four ways of financing budget deficit that countries have:

- 1) Money printing by the state

Money printing is known as a monetary way of covering the deficit in the public budget. (Atanasovski, 2004, p.31) In cases where money is printed, a profit is generated from the note-issue of domestic currency and the deficit in the state budget is covered with the profit.

2) The use of foreign exchange reserves

By reducing the country's foreign exchange reserves, the government can avoid the inflationary effects of the budget deficit. The use of foreign exchange reserves may have further implications on the economy for the reason that a shortage of foreign reserves may appear that would be necessary to balance the money market.

3) Borrowing from the domestic financial market

Borrowing in the domestic financial market is applied through the mediation of the domestic banking system, although the country may borrow directly from the private sector.

4) Borrowing from foreign financial markets

The last way of covering the deficit is to directly borrow from abroad, but also to use the foreign exchange reserves, in order to estimate the exchange rate, which limits exports at the expense of imports (Atansovski, 2004, p. 33). In this case, over-indebtedness may occur abroad. Such over-indebtedness can limit refinancing with new debts because of the risk, and when a risk occurs, interest rates escalate.

3. The effects of public borrowing

By borrowing the country, itself incorporates the transfer of purchasing power from the individual, regarding, on the level of the government that borrows and the subsequent transfer of ministries, enterprises and municipalities. Based on this, the public debt has an "income effect" but it also appears as an "expenditure effect". This indicates that public borrowing has different effects on the economy. The effect will depend to the greatest extent on the source of financing.

Borrowing has a great effect on the economy, and this effect is divided into two spheres of action in order to be able to analyze it more easily:

1) Effect on national income and distribution

Many proven professionals in the field of macroeconomics believe that the net impact of government borrowing is expansive, but under the condition that the borrowed funds are used for productive purposes, such as, capital investments (Mishkin, 2010, 556).

If the loan is used for unproductive purposes, primarily for social transfers, new employment or political purposes, then it is unjustifiable and has a negative effect on the economy.

Often governments with their tax policies impose taxes in order to finance their loan repayment program. High tax rate discourages citizens and business entities from investing and working. In addition to the fact that public borrowing incorporates a transfer of resources (from taxpayers to lenders), the negative effect of high taxes produces an unfavorable effect on income.

Because of high public debt, the current generation receives less capital.

2) The effect of the price level

Whether government borrowing has an anti-deflationary or anti-inflationary effect depends on how the debt affects the proposal of money from the central bank and how it affects economic activity. Loans from commercial

banks (the purchase of government bonds by commercial banks) lead to an increase in the proposal of money. This situation will put a lot of pressure on the price level. In this case, borrowing, that is, public borrowing, has an inflationary character.

If public debt is used to increase income, employment and production, the inflationary effect will then significantly reduce. But inflation as a phenomenon is inevitable in all cases because the proposal of money is increasing.

4. Research results

The focus of this paper is to identify:

1. Did the occurrence of the Corona crisis cause an increase in the budget deficit of the Republic of North Macedonia?
2. Did the budget deficit cause a drastic increase in public debt?
3. Does the Republic of North Macedonia borrow more from foreign financial markets?

The research will be carried out using secondary research methods, which indicates that existing data published in relevant reports and analysis will be applied. The following secondary research methods will be applied; content analysis, secondary analysis and systematic review. With the selection of secondary data, appropriate criteria will be applied that will enable a high level of validity and reliability of the research. Criteria incorporates dates of publication, quality of analysis and depth of analyses.

From the Fig. 1, it can be concluded that the deficit in the budget of RNM was stable from 2016 to 2019. Namely, in this period, it moved within the framework of the Maastricht convergence criteria. This is because there have been no global economic shocks or crises.

In 2020 with the beginning of the Corona crisis, oscillations in the budget deficit also began. In 2020 the budget deficit amounted to 8.1% due to the measures taken by the government in order to preserve the liquidity of business entities and provide financial support to vulnerable groups of citizens. In 2021 budget deficit was once again realized, but compared to the previous year, it is smaller and amounts to 5.3%. The reason again is the measures implemented by the government successively in several packages. The following can be distinguished as measures of great impact on budget deficit:

- ❖ Salary payment of 14500 denars monthly per employee for April and May 2020 for companies affected by the crisis or 50% of the cost of contributions,
- ❖ Aid for athletes of 14,500 denars for April and May 2020,
- ❖ Aid for artists,
- ❖ Financial support of 14,500 MKD for individuals who are self-employed for April and May 2020,
- ❖ Solidarity Covid 19 fund, and
- ❖ Credit grant scheme for the period from April to October 2021.

During the period from January to May 2022, the budget deficit is 3.7%, whereas the projected annual deficit is 4.3%, but if you take into account the

unpredictable environment related to the procurement of electricity and the problems that permanently arise with electricity bills of business entities, which according to previous experience would result in new government measures, the budget deficit would be higher than projected. From the graph it can be seen that public debt is closely related to the budget deficit, basically, till 2019, where the state of the deficit was stable, public debt was also stable, and with the increase of the budget deficit, the public debt also escalates in 2020 and 2021, where practically public debt exceeds 60%. Consistent with the stated above regarding the occurrence of the energy crisis and the increase in inflation in the first quartal of 2022, which exceeded 10%, and according to the predictions of NBRNM, will increase until the consolidation of the monetary policy and the announced economic recession, in the future, public debt will increase in order to cover the budget deficit.

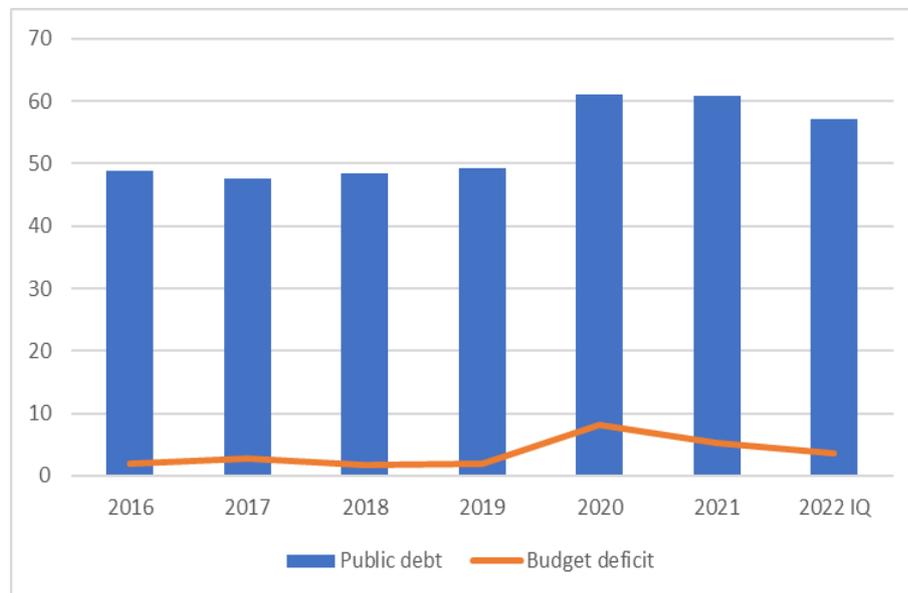


Figure 1: Budget deficit and public debt of RNM during the period from 2016 to 2022 (just I quartal)

Table 1. Budget deficit and public debt of RNM during the period of 2016 to I Quartal 2022

Year	Budget deficit (X)	Public debt (Y)	X ²	Y ²	X*Y
2016	2	48,8	97,6	2381,44	97,6
2017	2,7	47,7	128,79	2275,29	128,79
2018	1,8	48,4	87,12	2342,56	87,12
2019	2	49,2	98,4	2420,64	98,4
2020	8,1	61	494,1	3721	494,1
2021	5,3	60,8	322,24	3696,64	322,24
2022 IQ	3,7	57,1	211,27	3260,41	211,27
Σ	25,6	373	1439,52	20097,98	1439,52

$$b = \frac{\Sigma xy - \left(\frac{\Sigma x \Sigma y}{n}\right)}{\left(\Sigma x^2 - \left(\frac{\Sigma x^2}{n}\right)\right)}$$

(1)

$$a = \frac{\Sigma y - b \Sigma x}{n}$$

(2)

From the Fig. 2 which is based on the conducted regression analysis regarding the impact of the budget deficit on public debt, where public debt is treated as a dependent fluctuating variable, and budget deficit as an independent fluctuating variable, it can be concluded that there is a strong relationship between the two variables (Multiple R=0.9), basically the budget deficit and the public debt of RNM have a positive and strong mutual correlation, which is proof that the Corona crisis through budget deficit had a strong impact on the increase of the country's public debt. Based on the results of the statistical testing, it can be concluded that 75% of the change in public debt is the result of the increase in the budget deficit, and the remaining 25% of the change in public debt is the result of other factors that are not covered in the analysis.

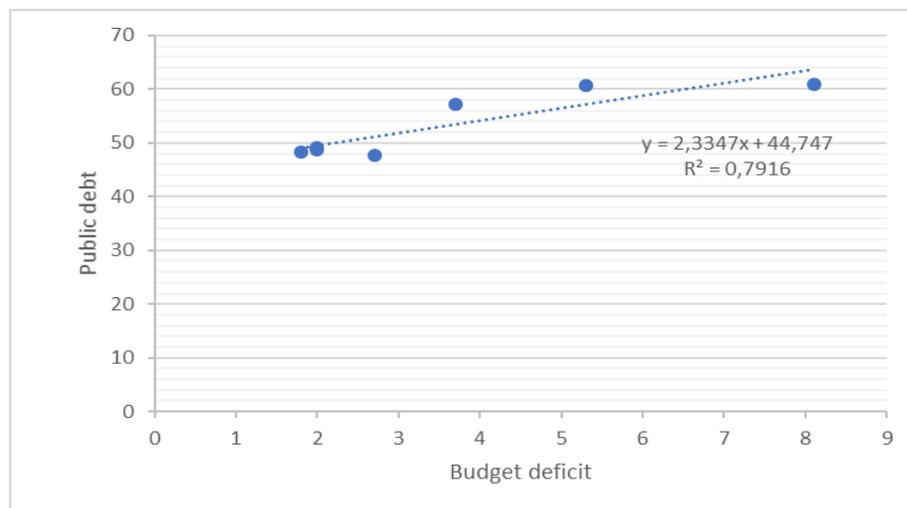


Figure 2: Linear regression of budget deficit and public debt of RNM (2016 to I Quartal 2022)

From the Fig. 3, it can be concluded that in the first semester of 2020 in the budget of RNM budget, a drastic difference appeared between the revenue and expense side as a result of the reduced realized revenues due to the Corona crisis and the cease of the work of some of the companies that are primarily export-oriented or depend on imported raw materials. Expenses in the budget for 2020

drastically increase in the second semester due to the realization of the financial measures implemented by the government.

The drastic difference between revenues and expenses continues in 2021. Namely, if a comparison is made between the movement of revenues and expenses from the budget and the movement of public debt (Fig. 1) can be confirmed and empirically, the results from the statistical analysis (Fig. 2) based on what is stated that the increased expenses of the country are due to the Corona crisis are reason for the increase in public debt.

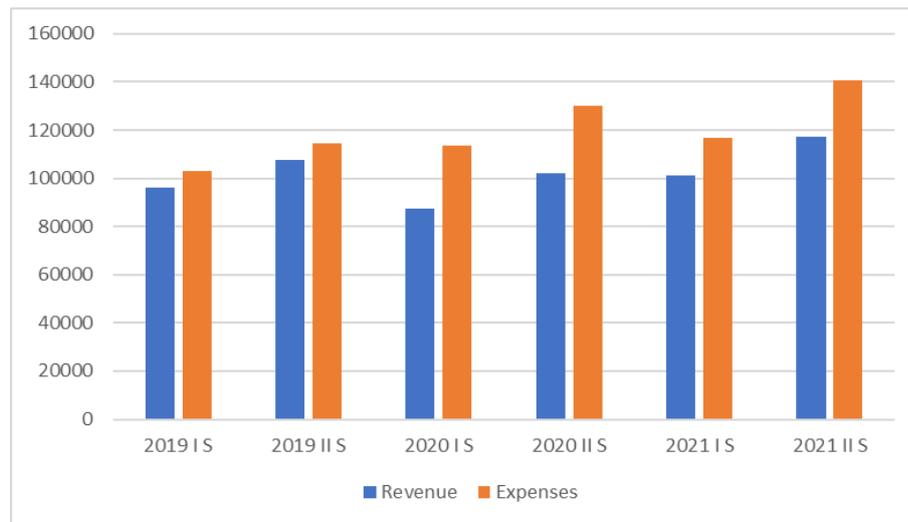


Figure 3: The movement of revenue and expenses in the budget of RNM during the period of 2019-2021 by semester in millions of denars

From the Fig. 4, it can be concluded that the countries of the Western Balkans, which are developing countries, are affected by the Corona crisis, through an increase in public debts in 2020. Namely, Montenegro was the most affected by the growth of public debts in 2020 of over 100% of GDP, and Serbia records the lowest growth in public debt in 2020 compared to the previous one, which indicates that the country was the most prepared for the crisis, so to say that the budget was in the best condition. It is characteristic that in 2021, except in Albania, in other countries there is a decrease in public debt, which is an indicator that public finances consolidate.

Some countries, including the Republic of North Macedonia, with the aim of consolidating public finances and improving budget performance, have begun to design tax reforms. Thus, according to the tax reform of the Republic of North Macedonia, which is still in the process of being conceptualized, which should be applied from 2023, the tax base is to be increased without increasing the tax rates, but also to revise the conditions for exemption from profit tax in the direction of abolishing the model of non-payment of profit tax if reinvested, also to narrow down the list of goods and services that are subject to a preferential VAT rate and expand the list of goods and services for which the right to a VAT refund is excluded, and so on. The introduction of a green tax is also planned. According to

the predictions of the Ministry of Finance, this kind of tax system should increase budget revenues, but also mitigate the consequences of the crisis.

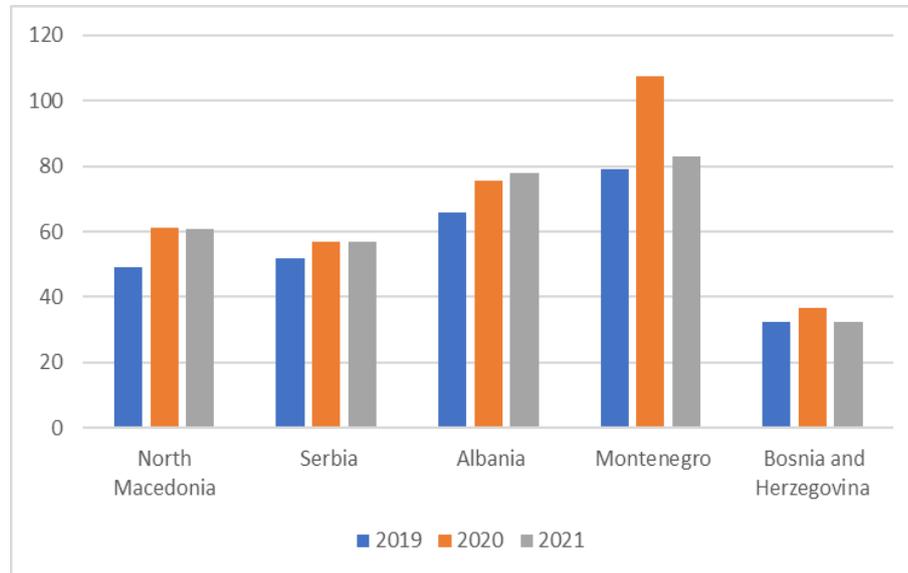


Figure 4: The movement of public debt of the countries of the Western Balkans during the period of 2019-2021, expressed as a percentage of GDP

Based on Fig. 5, it can be concluded that 60% of public debt of RNM is external debt, that is, the financial resources are provided by foreign sources, and 40% by domestic sources. Namely, according to the data on financing the deficit in the budget, a large part of the debt was generated through the issuance of Eurobonds, but it is characteristic that with the uncertain economic situation in the world, the interest on Eurobonds can increase.

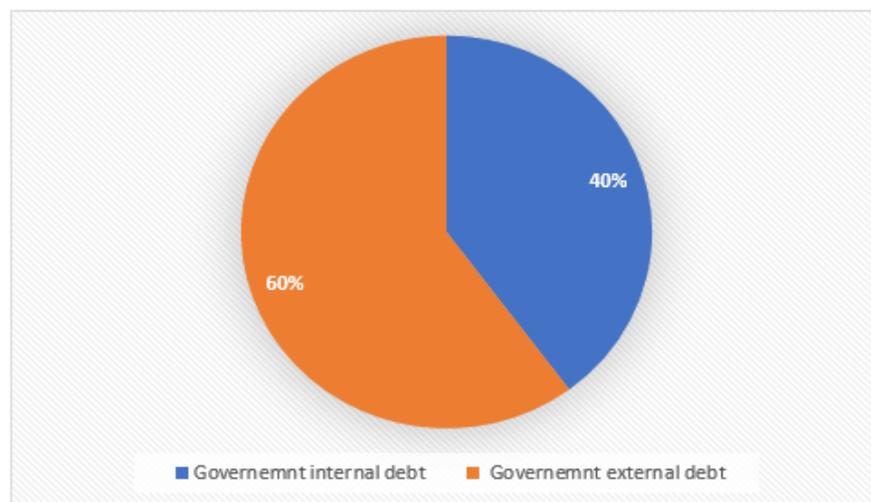


Figure 5: The structure of sources for financing the debt of the government of RNM

4.1 Discussion on the results of the conducted research

- 1) Regarding the first question, did the occurrence of the Corona crisis cause an increase in the budget deficit of the Republic of North Macedonia?

The answer to this question is yes, namely with the occurrence of the Corona crisis there was also a need for government measures that should reduce the impact of the crisis, the creation of the measures affected the budget, which created a drastic increase in the budget deficit for 2020 of 8.1%. It is characteristic that the budget deficit was serviced by borrowing from abroad through the issuance of a Eurobond. In 2021 once again the budget recorded a deficit but in a downward trend as a result of government borrowing.

- 2) Regarding the second question, did the budget deficit cause a drastic increase in the public debt?

Based on the research and the statistical analysis, it can be concluded that the public debt increased drastically due to the budget deficit. Namely, according to the results of the research, the budget deficit and the public debt are highly correlated, that is, the appearance of a budget deficit results in an increase in the public debt. In order to cover the deficit in the budget, the government was forced to borrow in general through the issuance of a Eurobond. Practically with the occurrence of the Corona crisis, the public debt reached 61% of GDP, and the increasing trend in 2021 did not continue but it had a slight drop of 0.2%.

- 3) Regarding the third question, does the Republic of North Macedonia borrow more from foreign financial markets?

From the conducted research, it can be concluded that the answer to this question is yes, because 60% of the debt of the government of RNM is the result of borrowing from foreign financial markets, mostly through the issuance of Eurobonds as the most favorable way of financing, but if you look at the world's financial flows, the occurrence of inflation and frequent fluctuations in exchange rates, it can be concluded that the interest on Eurobonds will rise in the future. Namely, with the occurrence of the Corona crisis, the government was forced to issue a Eurobond in order to mend the deficit in the budget, which could not be borrowed on the domestic financial markets in order not to put additional pressure on the economy.

5. Conclusion

From the conducted research, it can be concluded that the occurrence of a crisis such as the Corona crisis inevitably causes the development of a budget deficit because this type of crisis creates the need for state financial measures that will help the economy, and based on experience, the fact can be confirmed that these financial measures are quite expensive. A large number of developing countries face occasional financial problems, with the occurrence of the Corona crisis, they were forced to borrow, and the Republic of North Macedonia, in order to cover the deficit in the budget, was forced to borrow from foreign financial

markets through the issuance of a Eurobond. Borrowing caused a drastic growth on public debt which exceeded 60% of GDP. It can also be said that the Republic of North Macedonia has a poor developed domestic financial market, and because of this, the government of RNM mostly borrows from abroad, from foreign financial markets. When all macro-financial parameters are taken into consideration that concern public debt, it can be concluded that RNM faced the crisis unprepared. The results of the research can be used in the creation of fiscal policies that must be aimed at fiscal consolidation and reduction of public debt.

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THE IMPACT OF THE WAR CRISIS IN UKRAINE ON
INFLATION IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract

The occurrence of the Corona crisis in 2020 had a negative impact on the world economy, based on the annual macroeconomic reports that were released by the government and the central bank of the Republic of North Macedonia, it could be concluded that the Macedonian economy has an increasing budget deficit, negative economic growth and a permanent increase in inflation. With the start of the military conflict in Ukraine, the rise in the price of oil and oil derivatives on world stock markets began. As the Republic of North Macedonia is completely dependent on imports of oil and oil derivatives, this situation contributed to the increase in retail prices of consumer goods, which in turn caused additional reinforcement of inflation and deepening of the economic recession. The purpose of this paper is to examine the impact of rising energy prices on world stock markets on inflation growth in the Republic of North Macedonia and analysis of the results of measures taken by National Bank of the Republic of North Macedonia in order to relieve inflation. The research will be carried out using secondary methods that include the use of existing data published in reports, analyzes, studies and other relevant sources. Generally, the following secondary research approaches will be applied: content analysis, secondary analysis, and systematic review. When selecting secondary data, appropriate criteria will be applied such as a prerequisite for increasing the level of validity and reliability of the research. The final part presents the results of the research which indicate a direct proportional relationship between the growth of energy prices and inflation, especially at the beginning of 2021 and weak responsiveness of the monetary authorities in order to prevent the growth of inflation.

Keywords: Inflation, Growth, Impact, Interest rate, Crisis.

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1. Introduction

The world is always facing major crises such as health, military, economic etc. Regardless of whether the crises were economic or not, they have an impact on the world economy, and therefore on national economies. With the beginning of the military crisis in Ukraine, the price of oil and oil derivatives on the world markets have started to rise. This violated the macroeconomic stability generally through the growth of prices, with sanctions against Russia, which limit the export of oil from the Russian Federation to European countries additionally whet inflation, which caused major market distortions and impoverishment of the economy and the world. Since the disruption of macroeconomic stability is caused by external factors and the same comes from the offered side, a quick reaction was impossible, but some central banks also reacted late. Like most European countries, the Republic of North Macedonia also faced a rapid growth in inflation and significant market distortions that already exist on the market as a result of the health and political crisis. The focus of this paper will be on this issue through the analysis of the movement of crude oil prices on world stock exchanges and inflation in the Republic of North Macedonia.

2. Concept and measurement of inflation

Inflation as an economic phenomenon is one of the basic macroeconomic indicators everywhere in the world and based on this the change of prices in national economies is measured. Taking into account the opinions of economic theorists, inflation can be defined as the growth of the general or average price level in any national economy.

When measuring inflation, several situations can occur, namely if the change in the general or average level of prices is positive, then deflation occurs, which means that commodity funds in the national economy are greater than monetary funds. If the change is negative, then inflation occurs, that is, monetary funds exceed commodity funds. Also, in theory, there can be an equality between commodity and monetary funds in a national economy.

According to world practices, within national economies, it is very important to maintain a certain level of inflation, that is, a low level of inflation, the so-called stable inflation. It is so because the existence of inflation within the national economy allows:

- Sustainable economic growth;
- Opening of new jobs;

When talking about inflation, it is impossible not to mention price stability as a prerequisite for a stable national economy as well as macroeconomic stability. Price stability can be achieved when there is a low, stable rate of inflation in the national economy.

Price stability is as important as national economy as for citizens who are daily participants of economic development in the world. With price stability, the value of property owned by residents and non-residents is maintained, and consequently, investors are ready to invest in the country because they are sure that their investment will not lose its value in the years to come, with price

stability, a sustainable development of the economy is reached (Panova, 2016, p.12).

In order to measure the level of inflation (Fiti, 2004, p.157), that is, to determine the percentage of inflation within the national economy, the following information must be known: 1) The level of prices in the current year; 2) The level of prices in the previous year; The information is placed in the Eq. (1):

$$IR = \left(\frac{t - (t - 1)}{t - 1} \right) * 100 \quad (1)$$

The level of prices can be measured as a weighted average of goods and services within the national economy. In general, the level of prices is calculated through the price index.

When calculating the price index, the prices of goods and services that are part of the consumer basket of the national economy are taken into account. The following 12 groups of products and services are considered when calculating the cost of the living index: 1) Food and non-alcoholic beverages; 2) Alcoholic beverages, tobacco and narcotics; 3) Clothing and footwear; 4) Housing, water, electricity, and others. 5) Furniture, household items, household maintenance; 6) Health care; 7) Transport; 8) Communications; 9) Recreation and culture; 10) Education; 11) Restaurants and hotels; 12) Various goods and services;

Weighting is done based on the economic importance of all the groups mentioned.

The GDP deflator represents the coefficient of the real and nominal gross domestic product of a national economy. Inflation is calculated using the Eq. (2):

$$GDP \text{ deflator} = \left(\frac{Nominal \text{ GDP}}{Real \text{ GDP}} \right) * 100 \quad (2)$$

3. Causes of inflation

Inflation occurs as a result of several factors that are classified into two categories: 1) Internal factors and 2) External factors. As internal factors that affect the growth of inflation are: 1) The constant increase in the supply of money; 2) The growth of the deficit in the state budget; 3) Violation of the balance between production and consumption; 4) Starting a war, that is, militarization of the country, which would cause an increase in investments in military equipment; 5) Excessive increase in salaries; External factors for the emergence of inflation are: 1) Occurrence of world structural crises (economic, military); 2) Disruption of credit relations between the countries that appear as debtors and the international financial institutions as creditors (International Monetary Fund, World Bank) 3) Strengthening the competitiveness of the international markets of goods, services, assets, etc.

Based on empirical research, it can be concluded that the country has a greater influence in terms of preventing and dealing with inflation that is caused

by internal factors, as opposed to inflation that is the result of external factors that the country cannot influence, usually by applying of the transmission mechanism of the monetary policy on the economy, where the reference interest rate plays the biggest role. Namely, increase in the reference interest rate represents a signal to the economy for the emergence of inflation, which is of crucial importance for prevention.

Largely as a continuation of the previous channel of the monetary policy are credits, namely credits are an instrument that can help deal with inflation in a way that the central bank can limit them. According to the authorization of the central bank, it can be concluded that the price of property stocks has a major role in dealing with inflation, primarily from the perspective of people's expectations and the economy, but still through the interest rate of securities.

The exchange rate has a role in inflation through the change in the value of the domestic currency in relation to foreign currencies, but this channel of transmission in the Republic of North Macedonia is not applicable because the denar is de facto tied to the euro as a soft currency. In conditions of growth or already high inflation, the credibility of the monetary authorities plays a major role. Although it cannot influence without applying the previous channels of the transmission mechanism, it can by large stabilize the expectations of people and the economy in the monetary policy.

As the two most important reasons for the occurrence of inflation, we can mention an increase in demand that cannot be satisfied by the producers of goods and services, and thus the goods become more expensive. As a second reason, the so-called inflation of costs where it is caused by an increase in raw material prices or labor wages.

4. Research results

The focus of this research paper was to identify:

1. Does the crisis in Ukraine affect the price of energy, especially oil on world stock markets?
2. Did the military crisis in Ukraine stimulate the growth of inflation in the Republic of North Macedonia?
3. Have the measures taken by the NBRNM with the aim to mitigate the growth of inflation proved to be successful?

The research will be carried out using secondary methods, which include the use of existing data published in reports, analyses, studies and other relevant sources. In general, the following secondary research approaches will be applied: content analysis, secondary analysis and systematic review. When choosing secondary data, they will apply appropriate criteria as an assumption to increase the level of validity and reliability of the research.

These criteria include: the date of publication, the reliability of the source, the quality and depth of the analyses, the extent of the text's contribution to the development of the research field, etc. Statistical processing of the data will also be applied through regression analysis and analysis of the degree of correlation in order to empirically prove the hypotheses where the inflation rate will be taken as

a dependent variable and the average monthly price of oil will be taken as an independent variability.

From the Fig. 1 it can be seen that the price of oil until the beginning of the military crisis in February 2022 records small but insignificant oscillations. Based on the empirical analyses, those oscillations are due to daily changes in market conditions, but also to the estrangement of relations between the Russian Federation and Ukraine. A larger oscillation was observed in December 2021 when the price of oil on the world stock exchanges drops to 68.7 dollars per barrel, in order for it to rise to 82.9 dollars per barrel in the second decade of the month. After this drastic increase in the price of oil, it then begins to move upwards due to the permanent tightening of political relations between Russia and Ukraine, but also due to the high concentration of Russian military forces near the border with Ukraine. After the Russian invasion on Ukraine, the price of oil reached \$95.42 per barrel, and as a result of the sanctions imposed on the Russian economy, the price of oil rose to \$127.98 per barrel, with this price representing the culmination of price growth of oil on world markets.



Figure 1: The movement of the price of crude oil on world stock exchanges in the period from 29.04.2021 to 28.04.2022

From the Fig. 2, it can be seen that the inflation rate in the Republic of North Macedonia for the period from 2012 to 2021 is relatively stable and shows small fluctuations. It is characteristic that in the period from 2014 until 2016 a low rate of deflation was noted, which averaged 0.27% for the three years. In 2021 an increase in inflation of 266% compared to the previous year was noted as a result of the emergence of the Corona crisis. At the beginning of 2022 it is decreasing, until the beginning of the military conflict between Russia and Ukraine.

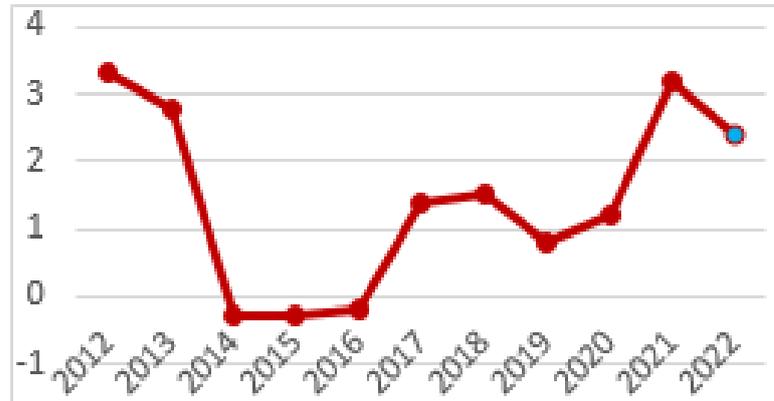


Figure 2: Inflation rate in the Republic of North Macedonia for the period from 2012 to 2021 and projected inflation rate for 2022

Table 1. Average monthly price of oil on world stock exchanges and monthly inflation rate in RSM for the period March 2021. – February 2022

Month	Average monthly price of crude oil is an independent changing variable (X)	Monthly inflation rate in RNM is a dependent changing variable (Y)	X ²	Y ²	X*Y
March	65,41	2,1	4278,47	4,41	137,361
April	64,81	2,7	4200,34	7,29	174,987
May	68,53	3	4696,36	9	205,59
June	73,16	2,7	5352,39	7,29	197,532
July	75,17	3,4	5650,53	11,56	255,578
August	70,75	3,6	5005,56	12,96	254,7
September	74,49	3,7	5548,76	13,69	275,613
October	83,54	4,1	6978,93	16,81	342,514
November	81,05	4,8	6569,1	23,04	389,04
December	74,17	4,9	5501,19	24,01	363,433
January	86,51	6,7	7483,98	44,89	579,617
February	97,13	7,6	9434,24	57,76	738,188
Σ	914,72	49,3	70699,8	232,71	3914,15

$$b = \frac{\Sigma xy - \left(\frac{\Sigma x \Sigma y}{n}\right)}{\left(\Sigma x^2 - \left(\frac{\Sigma x^2}{n}\right)\right)} \quad (3)$$

$$a = \frac{\Sigma y - b \Sigma x}{n} \quad (4)$$

Based on the Fig. 3 and the regression analysis, it can be concluded that there is a very strong relationship (Multiple R = 0.911) between the inflation rate and the movement of the oil price on the world stock markets. This means that the change in the price of oil on the world stock exchanges has a direct proportional effect on the inflation in the Republic of North Macedonia. This correlation can be explained by the fact that the change in the price of oil on the world stock exchanges affects the formation of the retail price of oil in the Republic of North Macedonia, which is a basic input in most industrial branches and plays a major role in the formation of the retail prices of finished products, subject to the exchange rate of the US dollar against the denar and other factors that affect the formation of the retail price of oil such as: the cost of turnover of oil products (trade margin), the cost of transport, excise tax for oil products, value added tax (VAT), compensation for financing activities in the field of the environment and compensation for mandatory reserves of oil and oil products remain the same.

According to the results of this model, 81.3% of the variability of inflation is explained by changes in the price of crude oil *ceteris paribus*, and the remaining 18.7% is explained by the variability of other variables that are not taken into account in this research. Namely by an increase on the price of crude oil on world stock exchanges by one-dollar *ceteris paribus*, then it would affect inflation with an increase of 0.16%.

In the case of inflation in the Republic of North Macedonia, the National Bank took a step signaling that a restrictive monetary policy will be applied, namely the NBRM increased the key interest rate on CB bills from 1.25% to 1.50%, but to avoid certain monetary shocks, the offer of treasury bills did not increase but remained at the level of 10,000,000,000.00 denars.

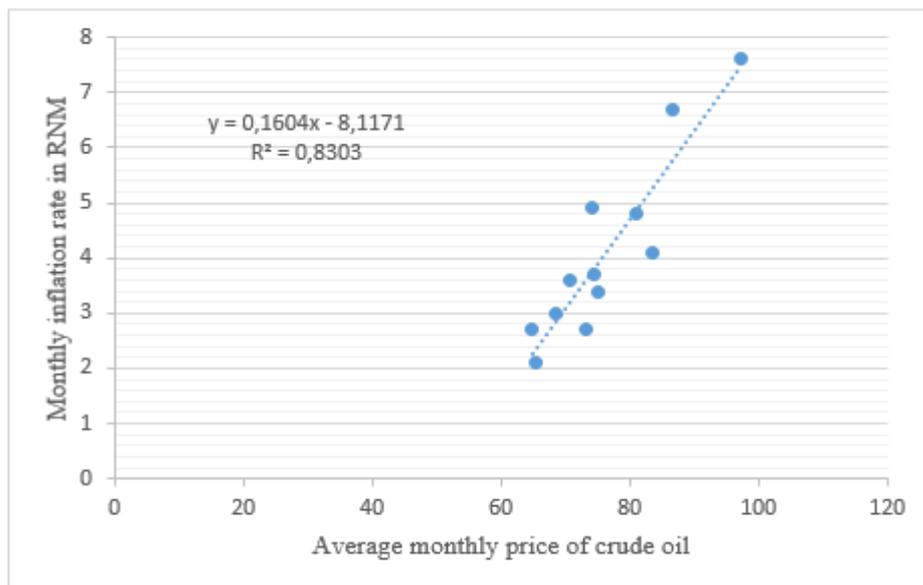


Figure 3: Linear regression of the average price of oil and the monthly inflation rate of RNM for the period March 2021 – February 2022

4.1 Discussion of the results of the conducted research

- 1) Regarding the question How the crisis in Ukraine affects the price of energy, primarily oil on world stock markets?

The price of oil has increased as a result of the growing concern in the market about the possibility of interruptions in oil supply, which are especially related to the tensions in the Ukraine and the occurrence of Omicron, that is, the widespread effects on oil consumption. However, the US Energy Information Administration (US EIA) expects downward price pressures to emerge in the middle of the year as OPEC+ and US oil production growth outpaces the slowdown in global oil consumption growth. These dynamics lead to an increase in global oil inventories from the 2nd quarter of 2022 to the end of 2023, and the Brent spot price is expected to fall to an average of \$87 per barrel in the second quarter of 2022 and \$75 per barrel in the fourth quarter of 2022. The US Energy Information Administration, in its Short-Term Energy review for February 2022, presents expectations that the price of Brent will average \$68 per barrel for 2023, the low inventory levels create the conditions for potentially increased crude oil price volatility and the potential risk that prices will rise significantly if supply growth does not keep pace with demand growth.

- 2) Regarding the second question, Did the military crisis in Ukraine stimulate the growth of inflation in the Republic of North Macedonia?

Definitely yes, one of the goals of the NBRNM is to manage a stable pricing policy which is to keep inflation at a certain low level, but with the beginning of the crisis in Ukraine and the rising of prices of oil and oil derivatives, inflation has definitely heated up. Namely, before the crisis, inflation in the RNM in 2021 was 3.2% and in the first month in 2022 increased to 6.7%, that is, by 3.5 percentage points, and in February to amount to 7.6%.

- 3) Regarding the third question, have the measures taken by the NBRNM in order to mitigate the growth of inflation proved to be successful?

The measures taken by the NBRNM did not prove to be sufficient. Even though the NBRNM raised the reference interest rate from 1.25% to 1.5%, inflation continued to move upwards, namely in March it was 8.8%, and according to the conditions, the NBRNM increased the projected average rate for 2022 at 6.5%. However, according to the announcements by the NBRNM about a further increase in the reference interest rate and inflation expectations, it can be concluded that by the end of 2022 the accelerated growth of retail prices will continue, that is, inflation will continue to grow, and in 2023 it will gradually decrease to reach a level of 5.5%.

5. Conclusion

From the conducted research it can be concluded that the Macedonian economy, which by definition is an open economy, is very sensitive to world economic and political events, such as the events that took place in Ukraine. Namely, with the onset of the crisis in Ukraine and the rise in energy prices, the Macedonian economy immediately reacted by increasing the inflation rate, which of course is caused by the offer, as a result of increasing energy prices, consumer prices also rose. If we look at the inflation movement in the last quarter of 2021 and compare it with the inflation rate in January 2022, where it has risen from

3.4% to 6.7%, it can be concluded that the NBRNM reacted late and did not stop the growth of inflation. The results of this research can be used by institutions when creating projections and strategies for dealing with inflation.

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ONLINE LEARNING ADOPTION DURING COVID-
19 PANDEMIC – THE EXPERIENCE OF THE
UNDERGRADUATE STUDENTS IN NORTH MACEDONIA

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Abstract

Since spring 2020 when pandemic suddenly threatened the world in unexpected way, a dramatic shift in how people live, work, and learn/study is evident. Global pandemic restriction strategies like stay-at-home orders, social distancing and long periods of lockdowns have disrupted the traditional campus-based model of education i.e. the traditional in-classroom teaching, and have forced fast adoption of online learning systems as remote/distance learning. For most counties/universities worldwide, online learning was one of the efforts to minimize the spread of Covid-19 and convenient opportunity of continuing the educational process in those circumstances. This was the case in the country as well. In this sense, the goal of this paper is to analyze the adoption of online learning among university students in the country. The basis for the research model is the original Technology Acceptance Model (TAM). This fundamental model examines the crucial predictors/factors of technology adoption including the following constructs: perceived ease of use, perceived usefulness, attitude towards using, behavioral intention and actual use. In order to get insights regarding the online learning adoption among university students in the country, a survey was conducted among more than 150 undergraduates during April and May 2022, while online learning was still undergoing. The results of this study capture valuable insights regarding the adoption of online learning and can be used as solid base for higher education institutions in the country to shape their online education offerings in order to remain competitive in a post-pandemic future. This research provides relevant practical implications by elaborating that the analyzed factors are critical towards online learning attitude in our country.

Keywords: Online Learning, Technology Acceptance Model, University Students, North Macedonia.

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1. Online learning - basic aspects, characteristics and trends

In the new normal era, the world of education continues to improve in order to deliver excellent educational services. Although the harmful consequences of COVID-19 are obvious, new opportunities may emerge. The university community's collective trauma during the pandemic must not be ignored, but the opportunity to rebuild stronger than ever is now more likely than ever. The lessons learned during harsh times will surely lead to more online services, a greater understanding of the impact of loneliness on the student experience, and a greater need to diversify services to meet the needs of a diverse range of student demographics. The change to virtual learning and student services may stimulate greater engagement. A distance learning approach based on online systems is created and gradually implemented. Educators are the driving force for the adoption of online learning. Still, those who should mostly benefit, the students should be asked to express their satisfaction of the online learning process.

To actualize a technology-based new normal education, various things must be addressed. In the paper, we are focused on factors that influence the adoption of this technology as new way of doing the teaching/learning process using TAM (Technology Acceptance Model). Therefore, we are paying attention on the students' opinions. We will only mention that teacher preparedness issues and infrastructure readiness issues are two major challenges that can hinder the introduction of online learning, among other problems. The use of an e-learning system in the learning process was anyway going to happen. The Covid-19 crises only accelerated the inevitable. E-learning benefits include more flexible learning opportunities without regard to space or time, making education more accessible to people, enriching learning materials, enabling learning processes, making learning more open, improving learning effectiveness, and assisting learners in learning independently.

Higher education institutions' digital transformation should not be referred to as e-learning because online learning is merely one of several elements of higher education institutions' digital transformation. E-learning is defined as the use of ICT (information and communication technology) in the delivery of learning based on three criteria: (1) e-learning is a network with the ability to update, store, distribute, and share teaching materials or information, (2) deliveries to the last user via computer using standard internet technologies, and (3) focusing on a broader view (Rosenberg, 2001). However, the term e-learning does not only refer to the internet; it is a term that describes an educational system that uses electronic applications to support the learning process. The words electronic learning (e-learning), mobile learning (m-learning), and digital learning (d-learning) are used interchangeably to refer to technology learning. E-learning can be used as a substitute for traditional education or as a supplement to it. M-learning, on the other hand, is a supplement to both traditional and electronic learning. M-learning allows students to interact with their educational resources even when they are not in their usual learning environment (Clark, 2007). D-learning is a term that is increasingly replacing e-learning and it concerns the use of ICT in the open and distance learning. According to Bersin (2017) all great

learning organizations should deliver learning solutions through simulations, collaboration, meeting other people and learning from experts, meaning digital learning is not fully digital, but it should use digital tools in an integrated way.

The universal approval of the WHO's social distancing policy, which was proposed as a tactic to combat the spread of Covid-19, has led schools and universities to close their doors, disrupting traditional teaching and learning methods in order to leave up to their objectives. The transformation process for universities engaged in digital transformation was smooth for some institutions, while some responded with crisis-response migration process due to the pandemic. The crisis-response migration methods employed by some universities can be classified into two parts, namely External-Assisted Migration and External-Integrated Migration (Adedoyin & Soykan, 2020). External-assisted migration refers to a situation in which colleges leverage Web 2.0 platforms created by external corporations or organizations. Some of these institutions gave data of students and faculty members for easy migration and implementations of various Web 2.0 platforms, as part of external-assisted migration. External-Integrated Migration, on the other hand, refers to a situation in which universities integrate Web 2.0 platforms created by external corporate bodies or organizations into their own personal online learning platforms (ex. Google Classroom). It's also worth noting that both External-Assisted Migration and External-Integrated Migration provide the appropriate capabilities for instructional delivery and evaluation via video conferencing, assignment submission, forum discussion, and assessment, among other things.

Online learning has both benefits and challenges. In the decades to come, the challenges will diminish mainly by encompassing technology improvements and enhancing the overall experience of the learners. Benefits can be viewed from the viewpoint of the universities and from the standpoint of the students. Most of the universities have begun to heavily engage in online instructions due to their several advantages, which include new markets, financial gains, global collaborations, expansion in education, shortened time to market, and faculty education. Additionally, online education appeals to various student populations with diverse academic needs that are the obvious shortcomings or limitations of standard classes. The push strategy of universities (and other education institutions) to offer online courses fuels the demand for them. Teachers and students can engage both asynchronously and synchronously, modes that have been extremely beneficial when online courses are offered. According to Hewitt, (2005), thread structures are frequently used in asynchronous forums to connect related remarks, enabling students to follow several conversations taking place at once emphasizing the advantages of asynchronous courses over synchronous and face-to-face ones, including time-independent access and chances for higher levels of engagement. In addition, online learning is a useful strategy to remove barriers that prevent students from approaching their professors with questions. The online learning environment offers opportunity to students to pose more relevant questions, and that student who find it difficult to speak in front of others may desire to participate more in online discussions with instructors. However, some findings show that the students preferred the traditional mode rather than the online mode that provides a potential for disruptive innovation that could take into

consideration of a live audience in university online courses (Yee *et al.*, 2022). Students benefit from teachers being more accessible in online learning and students won't worry if they miss an instructor's typical office hours and they can submit questions at any time, and instructors can respond at any time without being confined to a desk or office, which is especially useful if a student's schedule conflicts with office hours and a question comes up at the last minute. Despite the previously mentioned benefits, online learning brings challenges to the stakeholders. The geographical distance between students and the college community can frequently affect students' achievement, experience, access to resources, and interactions. Students who take online courses are missing the experience of the interaction between the professor, other group members, and students and this fact may limit prospects for social and academic advancement. For instance, the absence of social engagement with teachers will make students feel isolated and it appears that online learning is an impersonal activity. Nonverbal cues, which are an important part of face-to-face communication, are absent from online connection, which may limit the amount of asynchronous conversation that takes place with significant delays in reply. Another challenge that deserves special attention is the assessment of student learning that encompasses how instructors assess student progress and distribute graded activities across entire course (Kearns, 2012). As a result, online learning could demotivate students having limited knowledge of assessment process. There are other more technical obstacles such as access to computers, broad band and usage skills.

In order to support the process of e-learning and its growth, especially in the last 2-3 years we will mention some statistics. By 2022, the global e-learning industry is projected to surpass \$243 billion and digital learning is the quickest growing market in the education industry, with a 900% growth since 2000. (<https://e-student.org/e-learning-statistics>). 20% of American online college students use solely their phones or tablets to complete all their course-related activities, 39% of American undergraduate students consider online college-level education to be superior to classroom learning and 52% of American graduate students considered online college-level education to be better than classroom learning. (statista.com). Online learning platform Coursera has released its 2021 Impact Report, which shows more than 20 million new learners registered for courses in the year - equivalent to total growth in the three years pre-pandemic. (<https://www.weforum.org/agenda/2022/01/online-learning-courses-reskill-skills-gap/>)

In 2021, 27% of people aged 16 to 74 in the EU reported that they did an online course or used online learning material in the last three months prior to the survey, a 4% increase compared to 2020. In 2021, among all EU Member States, Ireland had the highest share (46%) of people aged 16 to 74 doing an online course or using online learning material, Finland and Sweden both registered a share of 45%, followed by the Netherlands with 44%, but, doing online courses or using online learning material was not very common in Romania (10%), Bulgaria (12%), and Croatia (18%). In EU, young people aged 16 to 24 have taken more to online learning than the average adult population. In 2021, 39% of young people reported doing an online course and 49% used online learning material, compared

with 23% and 27% among adults aged 25 to 34, and 20% and 23% among adults aged 35 to 44. The shares continue a downward trend as age increases, hitting the lowest point among older people (aged 65 to 74), where 3% did an online course and 4% used online learning material. (<https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20220124-1>). Approximately 18 % of individuals in the European Union did an online course of any subject in 2021 (The Netherlands had the highest share of people doing an online course, at 41%, and Romania has the lowest of 5% (<https://www.statista.com/statistics/1099445/internet-use-in-schools-in-the-european-union/>)).

2. Research model and hypothesis development

In the literature, there are number of theories and subsequent models that are in broad use to provide an understanding of the determinants of technology usage i.e. end users' acceptance of a new technology. Davis's technology acceptance model (TAM) is one of the most influential approaches used to explain and predict user acceptance of information systems (Davis, 1989). TAM has become one of the most widely used and empirically validated models within information systems research (King and He, 2006). This model (TAM) is based on the Theory of Reasoned Action (TRA) and to some point on the Theory of Planned Behavior as an extension of the TRA proposed by Ajzen (Ajzen, 1980). This generic theoretical model has been widely applied in many fields of information system domain (Ajzen, 1991).

According to Davis (1989), the goal of TAM is "to provide an explanation of the determinants of computer acceptance that is generally capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified" (Davis, 1989, p. 985). This model assumes that the intention to use any technology is affected by two constructs: perceived usefulness and perceived ease of use (Davis, 1989). According to TAM, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system. TAM also proposes that external factors affect intention and actual use through mediated effects on perceived usefulness and perceived ease of use. Perceived ease of use refers to "the degree to which the user expects the target system to be free of effort" (Davis *et al.*, 1989: 985), while perceived usefulness is defined as the user's "subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis *et al.*, 1989, p.985). The perceived usefulness of a technology increases with perceived ease of use. The more ease of use a user thinks a new technology is, the stronger his or her intention to use the technology is; furthermore, the stronger the usage intention, the greater the actual usage behavior. TAM also proposes that perceived usefulness is influenced by perceived ease of use. Both perceived ease of use and perceived usefulness predict attitude, defined as the user's evaluation of the desirability of his or her using the system. Attitude and perceived usefulness influence the individual's intention to use the system. Actual use of the system is predicted by the intention to use.

In the context of online learning, TAM and its extended versions (TAM2, TAM3, GETAMEL) have been extensively used as theoretical frameworks in different studies to explain technology acceptance of online learning (Al-hawari & Mouakket, 2010; Abdullah & Ward, 2016; Sukendro *et al.*, 2020, Patricia Aguilera-Hermida, 2020, Mailizar *et al.*, 2021; Weerathunga *et al.*, 2021, Utami, 2021 etc.).

The research model developed in this study aiming to predict the users' (students') adoption of online learning systems is based on TAM (Davis, 1989) extended by the construct perceived satisfaction. Online learning is an inevitable trend in the development of education, and learners'(students') perceived satisfaction is one of the core indicators to measure the assessment of online learning (Shao, 2020, Karim *et al.*, 2021). It is confirmed that perceived satisfaction can actively facilitate cooperation and sharing among learners, and effectively improve the effect of online learning (Shao, 2020). Investigating driving factors of learners' perceived satisfaction with online learning is important in the new digital era. Online learning satisfaction is of vital significance to enhance online learning efficiency (Yu, 2022). In this context, learning satisfaction is defined as a feeling or attitude of learners toward learning activities, which directly reflects the degree to which learners' expectations are fulfilled during the learning processes (Yu, 2022), it is a subjective psychological state formed after the comparison between the learner's learning expectation and the actual perceived learning effect (Fernandes *et al.*, 2013; Jiang *et al.*, 2017). While online learning satisfaction refers to the evaluation of opinions and feeling experiences of learners toward the quality of online learning service provided by online learning providers, a cumulative psychological response to online learning contents and learning environment, formed after a rational and emotional comparison between the actual perceived online learning effect and expectations of the perception (Yao *et al.*, 2016, Zeng and Wang, 2021, Yu, 2022).

The proposed model is presented in Figure 1 and includes nine hypotheses.

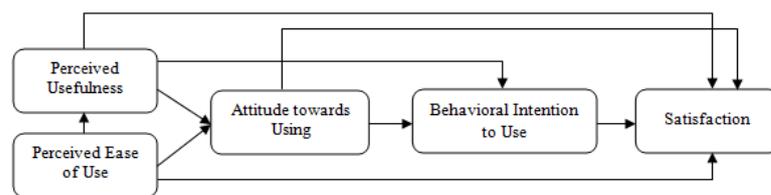


Figure 1. Proposed theoretical/research model

Hypothesis 1: Perceived ease of use of online learning has a significant effect on attitude toward using online learning.

Hypothesis 2: Perceived ease of use of online learning has a significant effect on perceived usefulness of online learning.

Hypothesis 3: Perceived usefulness of online learning has a significant effect on attitude toward using online learning.

Hypothesis 4: Perceived usefulness of online learning has a significant effect on behavioral intention to use of online learning.

Hypothesis 5: Attitude toward using online learning has a significant effect on behavioral intention to use.

Hypothesis 6: Perceived ease of use of online learning significantly affects online learning satisfaction.

Hypothesis 7: Perceived usefulness of online learning significantly affects online learning satisfaction.

Hypothesis 8: Attitude towards using online learning significantly affects online learning satisfaction.

Hypothesis 9: Behavioral intention to use online learning significantly affects online learning satisfaction.

3. Methodology, analysis, and results

This analysis examines the effects of potential determinants in online learning adoption by application of several statistical techniques: survey, descriptive statistics, reliability analysis and linear regression model.

The survey entails 147 respondents – undergraduate students at the Faculty of Economics in Skopje. Students could take the survey in April – May 2022 while attending their online lectures. The initial analysis includes descriptive statistics regarding demographic characteristics. They are presented in Table 1.

Table 1. Demographic characteristics of the survey respondents

CHARACTERISTIC	NUMBER OF RESPONDENTS	%
GENDER		
Male	45	30.6
Female	102	69.4
DEVICE FOR ACCESS		
Computer	116	78.9
Mobile phone (using application)	11	7.5
Mobile phone	6	4.1
Computer, mobile phone (using application)	11	7.5
Computer, mobile phone	2	1.4
Mobile phone, Mobile phone (using application)	1	0.7
ACCESS TO INTERNET		
From home	137	93.2
From home, from university/library/student dormitory	3	2.0
From university/library/student dormitory	5	3.4
From home, other	2	1.4
RESIDENCE		
Skopje	80	54.5
City other than Skopje	49	33.3
Rural area	18	12.2

Source: Authors' calculation

Presented data shows that most of the respondents had access to online learning technology from home (93.2%) by mainly using a computer (78.9%). Most of the respondents are from the capital Skopje (53.1%), while one-third come from cities other than the capital. As shown before, TAM model uses five constructs. They are all tested for their reliability, where their scale should consistently reflect the construct it is measuring (Field, 2005). Results from the reliability analysis with calculated Cronbach's alpha are presented in Table 2. For a reliable construct scale, Hair *et al.*, (2005) recommends a reliability coefficient greater than 0.7. All constructs presented in the table satisfy this condition. Thus, they can be derived as variables for the regression models.

Table 2. Constructs scale reliabilities

CONSTRUCT	CRONBACH'S ALPHA
Perceived usefulness	0.894
Perceived ease of use	0.858
Attitude towards using	0.919
Satisfaction	0.752
Behavioral intention to use	0.763

Source: Authors' calculation

TAM model defines nine hypotheses which are tested with nine linear regression models. Table 3 has the estimated regression coefficients.

Table 3. Simple regression models for testing of the TAM model hypotheses

HYPOTHESIS	COEF	STD. ERRO R	T- STAT	R ²	DURBI N- WATSON
<i>H</i> ₁ : Perceived ease of use has a significant effect on attitude towards using online learning	1.02	0.07	14.99 ***	0.61	1.82
<i>H</i> ₂ : Perceived ease of use has a significant effect on perceived usefulness	0.89	0.06	15.86 ***	0.63	2.02
<i>H</i> ₃ : Perceived usefulness has a significant effect on attitude toward using online learning	0.97	0.06	17.35	0.68	1.92
<i>H</i> ₄ : Perceived usefulness significantly affects behavioral intention to use	0.34	0.05	6.30 ***	0.22	2.00
<i>H</i> ₅ : Attitude toward using online learning has a significant effect on behavioral intention to use	0.30	0.05	6.68 ***	0.24	1.95
<i>H</i> ₆ : Perceived ease of use significantly affects online learning	0.53	0.05	10.43 ***	0.43	1.68

satisfaction

<i>H₇</i> : Perceived usefulness of online learning has a significant effect on online learning satisfaction	0.45	0.05	9.26 ***	0.37	1.80
<i>H₈</i> : Attitude towards using online learning has a significant effect on online learning satisfaction	0.37	0.04	9.04 ***	0.36	1.71
<i>H₉</i> : Behavioral intention to use online learning has a significant effect on online learning satisfaction	0.47	0.07	6.418 ***	0.22	2.01

*** Coefficient is significant at 0.01 level

Source: Authors' calculation

Results show that hypotheses supporting the TAM model confirm all defined relationships between the constructs. Perceived ease of use and perceived usefulness have a statistically significant and positive impact on attitude towards using online learning. When students find online learning to be easy to use and easy for them to become skillful, they conclude that online teaching is a good idea that should continue and will make them want to learn more. The same conclusion comes when the students think that online teaching improves their performance and provides them with appropriate course content.

Perceived ease of use has a significant and positive effect on perceived usefulness. Students consider the usefulness of the online learning process increases when they find online learning to be easy and when they like online learning activities.

Perceived usefulness and attitude toward online learning significantly affect behavioral intention to use online learning.

The following four hypotheses examine the effect that perceived ease of use, perceived usefulness, attitude towards using online learning and behavioral intention to use online learning have on the satisfaction of this process. Results confirm that a statistically significant and positive effect exists. The satisfaction is expressed by students always finding the needed material or course online, swift solutions to a problem and complete teaching resources that are available online. Students while explaining their perceptions mentioned that they cannot acquire soft skills, the networking effects and socialization are missing. However, cost reduction benefits are mentioned as a positive effect together with improved time management and safe environment in the pandemics.

All hypotheses confirm significant relationships between the constructs. The first three hypotheses have the most robust correlation coefficients (0.61, 0.63 and 0.68, respectively).

4. Conclusion

This study discusses the driving factors of online learning adoption, makes extension on the basis of technology acceptance model, identifies driving factors of online learning satisfaction, and empirically tests the nine hypotheses defined by the research model. The results show that the hypotheses proposed in this paper have been effectively verified, and the positive influence of perceived ease of use, perceived usefulness and users' online learning behavioral attitude in TAM model on users' behavioral intention has also been verified.

This study has theoretical and practical contribution. Firstly, it is significant since it adds value to the existing empirical evidence on online learning by supporting the relevance of TAM in understanding the usage of online learning adoption even in situations such as the COVID-19 pandemic. Understanding factors that affected the use and acceptance of online learning will help higher education policy makers integrate them into future hybrid or fully online programs.

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TOWARDS IMPROVING EMPLOYEE MOTIVATION IN
REPUBLIC OF NORTH MACEDONIA BEYOND THE
CORONAVIRUS PANDEMIC

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Abstract

The commitment to the organization, productivity and the achieved performance are resulting to some extent from the motivation of the employees. Therefore, it is important for any organization to be able to understand the relation between motivation and performance and to find out what actually motivates employees to put more effort in terms of quality and quantity, into their work. People are different from each other, each individual has his own set of motivators that encourage him to put more or less effort in the performance of a particular activity and achieve a certain goal. Motivation is the driver of human activity, shapes it in a certain direction and maintains it during the formation and until the final achievement of the set goal(s).

It is extremely difficult to determine what are the real motives that force the maximal and high quality effort to work. In order to understand what is the motivation and how it contributes to increasing the performance in the organizations in Republic of North Macedonia, this research was conveyed with the following set goals: analysing motivation and what it entails; perceiving the motivation for work in Republic of North Macedonia; discovering what motivates the employees; perceiving what is the motivation of the employees during a pandemic; where, based on the conducted research, a review and analysis of the obtained results was prepared and pointing out possible good ways to increase the motivation of the employees, which will improve the performance.

Only a well-established and focused motivation policy can deliver good performance and satisfied employees who achieve the stated performance. The path to effective (self-)management of a person lies in understanding their motivation.

Keywords: *motivation, factors, performance, improvement, satisfied employees*

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1. Introduction

There are several questions of interest in any professional domain – why people work, does the extent of hardship align with the motivation or it is reverse, how does efficiency and productivity increase, how can work be made more attractive and in general, what is the employee motivation to engage in effective work? "Satisfaction in work puts perfection in work" (Aristotle Quotes).

Thousands of years before the word "motivation" entered the vocabulary of leaders, it was well known that one can deliberately influence people to successfully carry out the tasks of an organization. Gredler, Broussard, and Garrison (2004) broadly define motivation as the attribute that moves people to do or not to do something. Intrinsic motivation is the motivation that is animated by personal enjoyment, interest, or pleasure. The way to effectively manage a person (if that is possible at all) lies through understanding their motivation. Motivation occupies a leading place in the structure of personality and is one of the basic concepts used to explain the driving forces of behavior.

Taylor's theory was the first of many motivational theories in business. Taylor's theory, also called Scientific Management, could also be called the money as a motivator theory (Teeboom, 2018). Taylor's motivation theory underscores money as the only way to motivate employees. Modern theories of personnel motivation and their use in practice prove that material incentives do not always make a person work harder. It is extremely difficult to determine the true motives that compel the worker to give maximum effort to work.

Motivation is the process which influences people to act. Motivation is a set of arguments, and motives in favor of something (Tracy, 2005). Motivation is a state of predisposition or readiness, a tendency to act in a certain way. Based on human behavior, a significant place is occupied by the orientation of the individual, by which in sociology we mean stable attitudes toward certain social values. The motivation of a person, a social group to be active, indicates the reasons and mechanisms of social actions, the behavior of people aimed at achieving goals. Sansone and Harackiewicz (2000) emphasize that motivation as an internal mechanism that guides behavior.

One of the most widespread theories of motivation is Maslow's (Abraham H. Maslow, 1982) theory of the hierarchy of human needs. The theory is based on the constant increase in expectations because by satisfying one need, new needs are encouraged. According to other authors, all seven needs are always present in every person, but the importance of each of them changes depending on the level of the standard of living, achieving goals, and personal determinations.

Everyone's motivation is different, it is necessary for the human resources department to make individual analyses. The challenge of motivating employees becomes greater in turbulent and unpredictable circumstances.

Crisis situations in organizations create interruptions and imbalances between organizational expectations and employee behaviors. During a crisis situation, employees are faced with challenging events that demand special consideration from normal case situations (Mefi and Asoba, 2021). The Covid-19 pandemic has caused major changes in the behavior of both managers and employees. Namely, many questions related to motivation arose during this crisis

period. There was a challenge to motivate both those who were physically at their workplaces and those who were working from home. There were also fears of losing jobs, unemployment and pay cuts. As a result, ordinary techniques of employee motivation seemed challenged.

This paper covers theoretical and empirical elaboration. Namely, in addition of this introduction (first) part which emphasizes the importance of the motivation forces, the second part elaborates on factors and the types of motivation, and the third part presents the results and analyzes empirical research for improving employee motivation in the Republic of North Macedonia beyond the pandemic.

2. Motivation

Motivation includes the psychological factors within the individual that determine the direction of a person's behavior in an organization, a person's level of effort, and a person's level of persistence in the face of obstacles (Jones and George, 2008). Motivation must have such a form to lead people to participate in the life of the organization, to accept and share the same paradigm. Motivation cannot be directly measured, but conclusions can be drawn about it based on employee behavior, the degree of their commitment, persistence and work results. One of the most important indicators of motivation according to Bakhtijarevic-Shiber (2014) is work performance which is a product of ability and motivation.

Employees who are not motivated to work, have very low business performance, do not communicate purposively, are not interested in the quality of products and services, do not identify with organizational values, are not related to the organization, its problems, development and performance and are often ready to leave it.

Employee's motivation is affected by many different factors which can be categorized into 3 groups (Hong Le et al., 2020):

- *Human-related factors*. They are intrinsic factors that energize a person to do something, examples: one's benefit, personal goal, personal attitude, the ability of a person, experience.

- *External factors influencing an employee*, examples: company's culture, human resources policies.

- *Work nature-related factors* are the main elements that determine the worker's salary in an organization, such as job stability and autonomy, level of the discrepancy of a task, responsibility, task complexity and work's attraction.

In the context of analyzing motivational systems, we should distinguish between motivational systems based on material compensations and motivational systems based on non-material compensations. A fully built motivational system means a system that respects both groups of motivational strategies and which neither reduces nor overemphasizes the importance of any of the listed strategies (Naumovska, 2008).

Material motivations are a complex construction of several forms of motivation aimed at ensuring and improving the material condition of employees and delivering financial compensation for the performed work tasks.

Based on the degree of directness, we distinguish two forms of material compensation:

1. Direct financial compensation received by the employee in monetary form.
2. Indirect material profit that contributes to raising the standard of the employee, which he receives as part of the salary or in general in monetary form.

Intangible factors represent an approach to increasing the motivation of employees by satisfying their needs that are not related to money or any other form of material reward. Non-material compensations refer to the satisfaction of higher-order needs, such as the need for respect, status, autonomy, career development, advancement of personal abilities, etc. The most frequently used non-financial forms are: shaping (design) of the work; employee participation in decision-making; management by objectives; flexible working hours; feedback from operations; various forms of recognition for work done; delegation of powers and others.

In addition to the general division of material and non-material motivation, a more detailed classification of motivation is also distinguished as follow: (Ankur, Bhuwan & Meenakshi, 2019; Triola 2021):

- Intrinsic motivation refers to an internal motivation, which is subjective but believed to occur as a result of actions aligning with values or with pleasure for performing a task. This type of motivation include pride in a task's completion, interest or enjoyment in the task itself.
- Extrinsic motivation is an external influence that impels people to act or behave in a specific way such as accomplishing a task or job but can also be a personal goal such as losing weight. External influences include bouses, rewards, promotions, prizes, etc.
- Introjected motivation is an internalized motivation like intrinsic motivation, but it is a form of motivation resulting from the feeling pressured to perform in order to gain appreciation from individuals of importance such as parents or bosses.
- Identified motivation refers to a form of motivation which occurs as understanding or feeling the need to perform or accomplish some task but not yet acting on this need. This is a powerful form of intrinsic motivation that prepares the person to act.
- Positive motivation can be simulative, such as higher pay, power position etc. This type of motivation can be called reward-based motivation and/or achievement-based motivation
- Negative motivation implies the use of penalties, punishments etc., negative motivation is relating with fears and can be called also fear-based motivation

3. Research methodology

The purpose of this paper is to identify certain strategic factors that contribute to increasing the motivation. This is in direction of understanding what motivation represents and how it contributes to increased performance in the

organization. After analyzing the most relevant research and papers, conference papers, open-access materials, study reports related to the research topic and other relevant publications, we shaped the conceptual theoretical background in this paper.

Our primary data was obtained from a qualitative questionnaire prepared with questions related to the motivation of the employees, from which we could derive insights about the motivation and the values that the employees have at work, especially during the COVID19 pandemic. The target group for this research was employees in various sectors in the Republic of North Macedonia. The survey was conducted in duration of five months, from 8th January to 10th June 2022, with combined purposive sampling and snowballing sampling of the respondents. A survey link was sent to more than 450 employees located in the Republic of North Macedonia; responses were received from 273 employees. The responses from the survey can be considered as sufficiently indicative and can present information useful for managers and human resources teams of the organizations for creating strategies of employee's motivation, as presented here.

The theoretical framework we have adhered to is the one by (Hong Le et al., 2020), and we analyzed the following 3 categories of factors, in our questionnaire and research: human-related factors; external factors influencing an employee and work nature-related factors.

3.1. Qualitative questionnaire, purposive and snowballing sampling

The research questionnaire was completed by 273 employees in total. The questionnaire begins with the basic data for the respondents. The characteristics of the respondents in terms of age, education and work position are given in Table 1.

Table 1: Characteristics of the respondents regarding age, place of residence, education and work position

Characteristics of the respondents	Number of respondents	%
Age		
18-25	101	53,5
26-35	73	21,3
36-45	64	12,9
46-55	23	7,7
55+	12	4,5
Education		
Secondary Education	61	29,03
Higher education	32	9,03
Bachelor	134	50,32
Master	35	10,32
PhD	11	1,29
Work position		
Employee	207	80,7
Leader/ management	55	12,9

Unemployed	11	6,4
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Source: Authors

The greatest number of responses are received from youngest employees (53.5%), follow by those aged 26-35 (21.3%). In terms of education, half of the respondents have a higher education (59.32%), while the remaining percentages are divided into other types of education. And as the last question in this section of general questions was the question of the work position in which the largest number of respondents are employed (93.6%), around 81% as a employee position, and 13% as a managers.

4. Analysis and discussion

The analysis of employee motivation confirms that three most motivated factors for Macedonian employees are following (“Fig 1”):

- Career development - 44% (human-related factors);
- Communication - 43 % (external factors);
- Reward system - 38% (work nature-related factors).

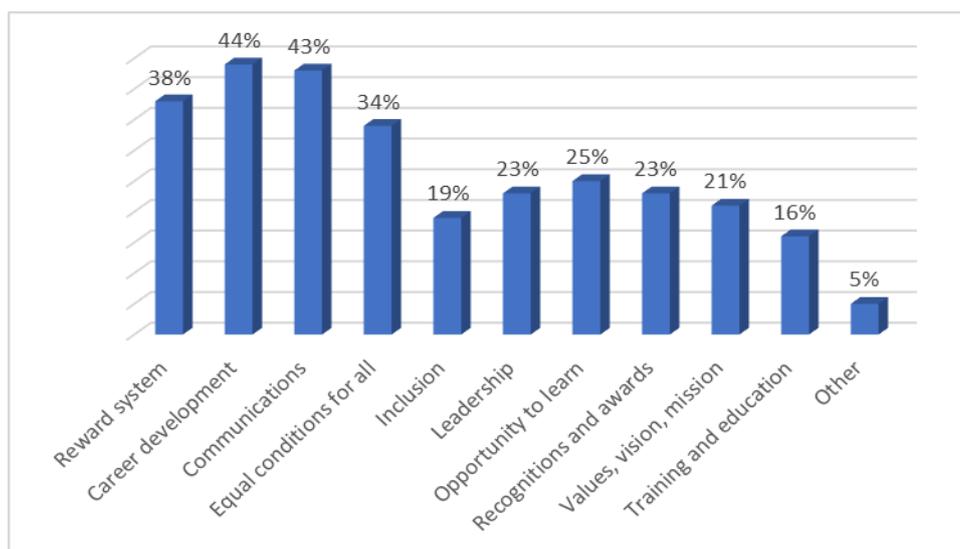


Figure 1: Key motivating factor

Source: Authors

Reward system (money) is a factor, but it ranked on third place, behind career development and communication. Of the respondents, 44 percent said that they wanted career development in the workplace, 43 percent want open communication with their manager and colleagues, and 38 percent said reward system is crucial for their motivation. Other key factors noted by more than 20 percent of the respondents are equal conditions for all, leadership, opportunity to learn, recognitions and awards, and values, vision, mission. Analyzes of research data confirm that Macedonian employees with higher education emphasize the

possibility of career development as a key motivator. Those employees who have secondary education emphasize the reward system in the first place, followed by the opportunity to learn.

Respondents who hold the position of managers believe that equal working conditions provide greater motivation among employees, followed by opportunities for career development, as well as recognition and awards. It is important to emphasize that an open approach to work and listening to employees' ideas boosts employee motivation (83%) and increases their commitment to the organization.

COVID-19 has swept the world, spreading uncertainty and upheaval wherever it goes. These are undoubtedly troubled times, in which leaders are said to undertake all sorts of feats in order to motivate and persevere. But based on the conducted questionnaire through the prism of the employees, the situation is as follows: only 26% of respondents received some form of motivation during COVID-19 (Table 2).

- Did you get any form of motivation during COVID-19?

Table 2: Motivation during COVID-19

Answer	The number of respondents	%
Yes	71	26
No	202	74

Source: Authors

As forms of motivation that respondents received during COVID-19, they emphasized the following: flexible working hours, the opportunity to learn new things, mastering new applications and technologies, career development, bonuses, salary increases, new colleagues, additional days off days, new computers and more.

Organizational culture has a key influence on the motivation of employees, the analysis of the research data confirms that there is a positive change in the organizational culture of Macedonian companies, which positively affects the motivation of employees. The following changes can be highlighted:

- Team building events (53%)
- Award for the best employee (41%)
- Events for greater socializing and communication of employees and superiors (29%)

All these changes in a certain part result from the functioning of human resources departments, namely 69% of the respondents answered that such a department exists in their companies, which contributes to the motivation of employees.

5. Conclusion and recommendations

For the successful functioning of an organization in growing competition and an environment characterized by great uncertainty, highly motivated employees who are productive, satisfied, and attended to work are needed. Motivation is the one that initiates the activity of employees and gives them

enthusiasm for performing tasks and achieving goals. Establishing an adequate motivational system requires skill and understanding of the complex behavior system of the individual.

At the same time, life does not stand still, and "... the factor that today motivates a certain person to work intensively, tomorrow may contribute to the "disconnection "of the same person. No one knows exactly how the mechanism of motivation works. Therefore, in the management of human capital, there is constant research on various motivators for labor activity and the development of new methods and systems.

The results confirm that in addition to material factors, non-material factors are also key to employee motivation. Namely, the open approach, opportunity for career development, positive changes in the organizational culture contribute to greater motivation among employees

It should be emphasized that the combination of motivators is equally important. And what motivates a person today will stop motivating him tomorrow, because it becomes habitual. The most important, top priority task now is to find those factors and motivators that are important to employees. It is necessary to develop well-defined goals and tasks, identify values, to find out who wants to do what and what not.

Recommendations that should be applied in Macedonian companies for greater motivation are the following:

- ✓ Creation of creative meetings in which each employee will have the opportunity to express his opinion regarding the work and propose a creative solution to solve a certain problem, or maybe create a future project, improve the work policy.
- ✓ Creation of a creative, fun space in the company (a room with fun games, a corner with books, a screen for playing videos, a movie) that will relax and create even more motivation for work.
- ✓ Introducing the motivation policy known as "Employee of the Month" because this will motivate them to work more and invest in their work, and if they are praised and distinguished, it will contribute to greater respect and recognition by their colleagues. as well as leaf satisfaction.
- ✓ Existence and policy of "Employee Voucher" with which, in addition to greater motivation to work in the company, there is also the possibility of joint use of the voucher, which encourages connection within the company itself among employees, but it should be emphasized here that there is an opportunity for cooperation and recognition with and among other companies.
- ✓ In times of crisis situations, unpredictable circumstances such as the case of COVID-19, it is necessary to reconsider the policy of motivation and a greater application of different forms of motivation.

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THE IMPACT OF SOCIAL MEDIA USE ON EMPLOYEE
WORK PERFORMANCE

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Abstract

Social media has changed the ways people communicate, express their views, share content, interact and collaborate, by enabling the network effects, information provision, broad audience and outreach, direct connectivity and global situational awareness. The great dominance of social media in the modern way of life, as well as the strong connection of a large number of people with these media and networks, often lead to the fact that a certain part of their working time is spent on social networks. Social media use in the workplace may contribute to both productive as well as unproductive behavior. Research confirms that for certain areas or sectors, the use of social media has a positive impact, especially in the civil society sector. But it is also important to emphasize that in companies where there is policy for social media use, it contributes to positive impacts. This paper analyses whether and to what extent social media is used by Macedonian employees during working hours; what are their views on work performance with regards to the social media use; and analyses whether businesses have policies for using social media, which help streamline the benefits while outweighing the downsides? For the purposes of this research, a survey was conducted of 202 employees from the public, private and civil society sectors from the Pelagonia region of the Republic of North Macedonia. This research opens prospective use of findings in managerial and organisational decisions on social media use, as well as in conceptual sense of task diversity for improving work performance in general.

Keywords: social media use, employee productivity, work performance, business policy.

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1. Introduction

The emergence and development of the Internet and its products has had a profound effect on the personal and professional lives of the people, offering a lot of opportunities for accessing information, gaining and exchanging knowledge, communication and realisation of personal and professional goals. The development of social media and networks contributed to an even greater use of information and communication technologies from almost all categories of citizens and the daily use of these media, both in their free time, but also during working time. Social media becomes a necessity in today's times for both, individuals and businesses.

“Social media are the online means of communication, conveyance, collaboration, and cultivation among interconnected and interdependent networks of people, communities, and organisations enhanced by technological capabilities” (Tuten, 2021, p.35). Social media is the platform that give individuals the opportunity to interact, using two-way communication; meaning, that anyone who has online accounts can share their opinions with other social media users (Hashem, 2015).

The daily spread and importance of the social media brings as more people join online communities. The average user has internet accounts with eight different social media services and spends more than two hours a day on social media (Tuten, 2021). Social media use has skyrocketed over the past decade and a half. Whereas only five percent of adults in the United States reported using a social media platform in 2005, that number in 2019 is around 70 percent (Allen, 2019).

Social media and networks have a large influence on the way people think and behave. In particular, Facebook has a broad participation all over the Internet. Through the years, the interface and functionality of Facebook have changed and transformed from a university-only communication tool to one of the most well-known websites online (Pilli, 2015). Europe is in third place in terms of Facebook subscribers in the world, after Asia and Latin America (Internet World Stats, 2020). Over time, the use of certain social media is characteristic by categories of citizens, ie by age. Namely, Facebook is becoming the most commonly used among the older population, while use of Instagram, Snapchat and TikTok is especially common among young people under 30 (Auxier&Andreson, 2021; Abrams, 2022;). A majority of Facebook, Snapchat and Instagram users visit these platforms on a daily basis (Auxier&Andreson, 2021). Europe has more than 300 million active users on social media (Mordor Intelligence, 2022). The EU's social network participation rate has steadily. Social network participation includes activities such as creating a user profile, posting messages or other contributions to social networks. Among EU Member States, the social network participation rate was highest in Denmark - 85%, ahead of Belgium - 79%, Cyprus - 78%, Finland - 75% and Hungary - 74%. Among younger people in the EU aged 16 to 24 years, almost 9 in every 10 participated in social networks (87%). Among older people aged 65 to 74 years, over a fifth (22%) participated in social networks (Eurostat, 2021). About 86 % of the total population in North Macedonia

aged 15-74 used the Internet, and 80.5% used the Internet every day or almost every day. In the Republic of North Macedonia, about 85% of the population has some kind of participation in social media (creating user profile, posting messages or other contributions to Facebook, Twitter, etc.) and it is the largest among the age group from 25 to 54 years old. Participation in social media shows a growing trend (State Statistical Office of RNM, 2021).

As the use of social media penetrates the household and is rapidly adhered by everyone, it also finds its application in business, as well as in the workplace by employees. The use of social media in the workplace for both private and professional purposes is evident today.

Social media use in the workplace may simultaneously contribute to productive behaviour i.e., task-oriented as well as unproductive behaviour i.e., deviance at work (Carlson et al., 2016).

Namely, the purpose of this paper is to identify these links, as well as the impact on work performance of the use of social media in the workplace in the case of Macedonian employees.

This paper is structured as follows: section two presents the literature review which investigates the relationship between the use of different visible social media by employees and their work performance, followed by the second part, based on a survey conducted with a target group of employees in the public, private and civil society sector, an analysis was made of the habits of using social media in the workplace and what is the impact of using social media on fulfilling work tasks and responsibilities. This section also analyses the rules and policies for the use of types of social media of business entities in the workplace by employees. The last section of the paper presents the conclusions.

2. Literature review

Extensive scientific research has been conducted (Wushe&Shenje, 2019; Louati, &Hadoussa, 2021; Zhao, Guo, Shang & Wang, 2021, Pavithra & Deepak, 2020; Jong, Chen, Ruangkanjanases& Chang, 2021) to examine the link between employee productivity and social media use in the workplace. The constant expansion of the social media usage has altered how businesses operate and interact and has particularly affected the field of human resource management. Social media are found to be useful resources for developing and maintaining communities of practice in the current era of digital transformation by offering interconnected venues for communication, collaboration, and the encouragement of the exchange of knowledge. However, the emergence of social media has raised questions about its use in the workplace, particularly its effects on worker performance (Wushe&Shenje, 2019).

The use of social media in the workplace could be for personal or professional purposes. The term "social-oriented use of social media" refers to the use of social media to create new friendships, find people who share similar interests, and keep in touch with old friends and clients. The use of social media for business purposes was described as communicating about work with colleagues or sharing documents within the company (Jong et al., 2021). The findings from the study that was carried out by Pavithra and Deepak (2020,

p.1466) shown that businesses use social media in the workplace to improve the employees' time management, task performance, and their performance. In fact, they have shown that the "usefulness" aspect of the social media use was substantially connected with job performance, and they helped to boost employees' performance. Authors recommended that the company's management should provide appropriate staff training on how to utilise social media appropriately for organisational goals.

In their study, Kaur and Dhingra (2020, p.1423) indicated that the use of social media promotes teamwork, personal growth, and they are an excellent tool for creating positive publicity about a business, services or products, as well as for targeting larger audiences. However, companies must first accept and adopt this type of technology in their workplace, along with any drawbacks, using the most appropriate social media platforms essentially contributing to the success of the organisation.

Although the advantages mentioned above, there are numerous challenges associated with the extensive use of social media in the workplace. According to Aguenza, Al-Kassem and Som (2012,p. 24), there are several concerns that companies are facing with if the use of social media in the workplace is not properly managed. Some of those issues are: data leakage from employees chatting in public, harm to a company's reputation, decrease in employee productivity, scams used by cybercriminals. The authors suggest that companies should not discouraged the usage of social media for job purposes but they need to define and appropriately applied their strategy regarding social media, especially the guidelines for engaging employees during their work time. If this is accomplished correctly, management will be able to profit from these new communication channels' advantages while reducing unwanted threats.

Eren and Vardarlier (2013) in their study discussed about the extent of employee interaction on social media, its relationship, and how that relates to corporate goals. According to the strategic management principles, companies must accomplish the right strategies, ensure effective implementation of these strategies, and must establish an effective communication environment in order to achieve their goals. The analysis conducted by Ogbuji and Papazafeiropoulou (2016) showed that businesses need a carefully thought-out approach to integrate social media in a successful way. They provide a framework for social media strategy that can be used by different businesses to determine which aspects of the company need to be improved and how to best use social media for business purposes.

3. Research methodology and discussion

3.1. Research methodology

The main purpose of this paper is to analyse some different aspects of using social media or networks, answering following questions:

- whether and to which extent social media are used by employees in the workplace;

- what are their views on work performance with regards to the social media use; and
- whether entities in private, public and civil society sector have policies for using social media, which help streamline the benefits while outweighing the downsides?

Target group for this research are employees employed in entities in private, public and civil society sector located in the Pelagonia region of the Republic of North Macedonia, which participated also in the inputs to acquire understanding of the pursued subject, and are perceived practitioner audience of the findings.

The initial part of this research was conducted through an anonymous questionnaire with mostly close-ended questions. We used purposive sampling and snowballing. The intension behind this questionnaire was to summarise the perceptions of the employees either employed on managerial or non-managerial position in different sectors regarding the impact of using social media and networks in the workplace on work performance or productivity of the employees. The field stage of the research was entirely done online in the period between 28 June 2022 and 28 July 2022. A link from the survey was sent to more than 700 employees employed in entities located in the Pelagonia region, and responses were received from 202 employees.

Main research hypothesis: The impact of using social media or networks on employee's work performances depends of the entities sector where employees are employed.

3.2.Results of the research

The results of the research will be presented in two parts. In the first part will be presented specific analysis related to sample structure and the second part will be presented the results related to research questions based on the answers in the research questionnaire.

3.2.1. Sample structure

Total number of 202 respondents filled in the research questionnaire (Table 1). We used purposive sampling and snowballing wherever possible. The responds gave sufficient information about our research interest. Most of the respondents are female (123 or 60.9%) while 79 or 39.1% are male employees. Most of the employees who responded to the questionnaire are aged from 30-40 (75 or 37.13%) and 9.9% of the respondents are older than 50 years.

Table 1 Gender of the respondents

Age	Gender		Total
	female	male	
18-29	26	17	43
30-40	48	27	75
41-50	37	27	64
older than 50 years	12	8	20
Total	123	79	202

Source:Autors

62.87% or 127 of the employees have obtained higher education of which 49.61% are employed in the public sector, while 68% of the respondents with acquired secondary education are employed in the private sector. In total 106 respondents or 52.48% are employed in the private sector, 86 or 42,57% in the public sector and 10 or 4.95% in civil society sector (see Table 2).

Table 2 Level of education of the respondents

Sector	Level of education		Grand Total
	Higher education	Secondary education	
Civil society sector	9	1	10
Public sector	63	23	86
Private sector	55	51	106
Grand Total	127	75	202

Source:Autors

79.7% of the employees who answered the questionnaire are in a non-managerial position, and the rest have managerial positions, of which 78.05% in the private sector, 14.63% in the public sector and 7.32% in the civil sector.

Table 3 Job position of employees by sector

Sector	Working position		Grand Total
	Managerial position	Non-managerial position	
Civil sector	3	7	10

Public sector	6	80	86
Private sector	32	74	106
Grand Total	41	161	202

Source:Autors

3.2.2. Results from the questionnaire related to the research questions

The first research question concerns on the level of using the social media by employees during working time (Table 4). Despite the fact that almost all surveyed employees use some kind of social network (98.51% answered that they use a social network), 18.81% of the employees who answered the questionnaire do not use any social network during working time. Most of the employees who use social networks during working time, spend less than one hour using it (64.78% or 103 employees), but sufficient number of employees use it more than one hour (28.30% or 45 employees) or even more than two hours (6.92% or 11 employees).

Table 4 Using social media during and outside the working time

	using social media (networks) during working time	using social media (networks) in the free time outside the working time
less than 1 hour	103	30
from 1 to 2 hours	45	113
from 2 to 3 hours	9	52
more than 3 hours	2	4
Total	159	199

Source:Autors

The most used social network during working time is Facebook (43.56%) followed by Viber (15.35%) and Instagram (12.87%), see Table 5.

Table 5 The most used social media during working time

Type of social media or social network used during working time	Total	Total (%)
Facebook	88	43.56%
Viber	31	15.35%
Instagram	26	12.87%

LinkedIn	9	4.46%
YouTube	8	3.96%
Skype	2	0.99%
Don't use social media or social network during working time	38	18.81%
Total	202	

Source:Autors

It can be concluded that both private and public sector employees spend almost equal amounts of time using social networks during working time. On the other hand, civil sector employees generally spend one to two hours of working time on social networks (Table 6).

Table 6 Using social media during working time by the sectors employees

	less than 1 hour	from 1 to 2 hours	from 2 to 3 hours	more than 3 hours	Total
Civil sector	1	8	1	0	10
Public sector	53	16	6	0	75
Private sector	49	21	2	2	74
Total	103	45	9	2	159

Source:Autors

Concerning the views of the employees about the impact of use the social media or networks during working time on work performance, opinions are divided between positive and negative impact (Table 7). Namely, 32.94% of employees in the public sector believe that the use of social networks or media during working hours positively reflects on the quality of the of working activities. Opposite to this opinion, 32.69% of the employees in the private sector believe that this has a negative impact on the quality of the of working activities.

Table 7 Impact of use the social media or networks during working time on work performance

	I think that using it NEGATIVELY affects the quality of work performance	I think that using it POSITIVELY effects on the quality of work performance	I think that using it has a NEITHER POSITIVE OR NEGATIVE effect on the quality of

			work performance
Civil sector	0.00%	70.00%	30.00%
Public sector	21.18%	32.94%	45.88%
Private sector	32.69%	26.92%	40.38%
Average	17.96%	43.29%	38.76%

Source:Autors

On the other hand, both public and private sector employees predominantly believe that the use of social networks and media during working time has a negative impact on work productivity (55.29% and 57.69% respectively, see Table 8).

Table 8 Impact of the use of social networks and media during working time on work productivity

	I believe that the productivity of the employee is not related to the time of using social networks (media) during working hours for private purposes	I believe that employee productivity increases by using social networks (media) during working hours for private purposes	I believe that employee productivity is reduced by using social networks (media) during working hours for private purposes
Civil sector	60.00%	20.00%	20.00%
Public sector	38.82%	5.88%	55.29%
Private sector	37.50%	4.81%	57.69%
Average	39.20%	6.03%	54.77%

Source:Autors

In general, this opinion is slightly higher among those with a managerial position (58.54%) compared to those from a non-managerial position (53.80%), see Table 9.

Table 9 Managerial and non-managerial opinion of the social networks and media impact

	I believe that the productivity of the employee is not related to the time of using social networks (media) during working hours for private purposes	I believe that employee productivity increases by using social networks (media) during working hours for private purposes	I believe that employee productivity is reduced by using social networks (media) during working hours for private purposes
Managerial position	34.15%	7.32%	58.54%
Non-managerial position	40.51%	5.70%	53.80%
Average	37.33%	6.51%	56.17%

Source:Autors

The question of whether entities have established policies for using social networks or media, 73.16% of the employees in the public sector, 51.89% of the employees in the private sector and all the employees in the civil sector answered negatively (Table 10).

Table 10 Established policies for using social networks or media

	Yes	No	No information
Civil sector	0.00%	100.00 %	0.00%
Public sector	17.44%	73.26%	9.30%
Private sector	40.57%	51.89%	7.55%
Total	28.71%	63.37%	7.92%

Source:Autors

On the other hand, as many as 67.84% of the surveyed employees believe that it is necessary to establish policies for the use of social media or networks in the workplace during working time (Table 11).

Table 11 Need for business policies for use of social media or networks in the workplace

	Yes	No	No opinion
Civil sector	60.00%	0.00%	40.00%
Public sector	67.06%	15.29%	17.65%
Private sector	69.23%	13.46%	17.31%
Total	67.84%	13.57%	33.94%

Source:Autors

Hypothesis testing

The impact of using social media or networks on employee’s work performances depends of the entities sector where employees are employed.

H_0 : there is no difference of employee's work performances and using social media or networks in different sectors where employees are employed

H_1 : there is a difference of employee's work performances and using social media or networks in different sectors where employees are employed

Table 12 Difference of employee's work performances and using social media or networks in different sectors

Sector	I believe that the productivity of the employee is not related to the time of using social networks (media) during working hours for private purposes	I believe that employee productivity increases by using social networks (media) during working hours for private purposes	I believe that employee productivity is reduced by using social networks (media) during working hours for private purposes	Results from χ^2 test

Civil sector	0	7	3	$\chi^2 = 11.256 >$ 9.488 $df = 4$ $p < 0.0238$ $\alpha = 0.05$
Public sector	18	28	39	
Private sector	34	28	42	
Grand Total	52	63	84	

Source:Autors

From χ^2 test of independence we can conclude that on the level of significance $\alpha = 5\%$ (Table 12), we should reject the null hypothesis e.g., according to the opinions, there is a difference of employee's work performances and using social media or networks in different sectors where employees are employed.

4. Conclusion

The use of social media is becoming an everyday choice, behaviour and tool in people's lives. The spread and development of social media is at a high speed, and over time there is a reorientation in the use of social media, especially by young people (from one social network to another). Today, social media is heavily used in the workplace. The use of social media during working time is an important issue for employers and the Human Resources Department. Although it has a positive and negative impact on the quality of the work, however controlled use, as well as policy making for social media use in the workplace, will contribute to greater productivity in operation.

It can be stated that Macedonian employees use social media during working time. The most frequently used network during working time is the Facebook platform. Employees in the civil society sector spend more hours on social media during work time compared to other sectors (public and private), and they highlight the importance of using social media to achieve greater operational performance.

Employees both in public and private sector predominantly believe that the use of social networks and media during working time has a negative impact on work productivity.

The largest number of Macedonian companies don't have policies for the use of social media in the workplace, but there is a positive opinion among employees that it is necessary to create appropriate rules and policies for the use of social media. In the company where there are already policies and rules for the use of social media, in that case they are not used for private purposes, but to improve performance in the work.

Creating appropriate rules, policies and guidelines for social media use in the workplace will lead to their proper and useful use, to reduce operating defocusing and positive impact on work performance. Also crucial are the trainings for social media use of employees. The use of social media can find application in all sectors but if properly implemented.

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ALTERNATIVE DISPUTES RESOLUTION FOR
CONSUMER DISPUTES IN THE EUROPEAN UNION

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Abstract

Consumers, as the weakest and most ignorant link in the producer-trader-consumer chain, often end up deceived or damaged in one of the deals in which they participate daily. It is noteworthy that the number of consumer deals in an era called the consumer society is enormous, and thus the number of disputes that arise between traders and consumers is growing in direct proportion. Due to the fact that consumer disputes are usually of lower value and are simpler than the complicated trade disputes that arise during the long-term trade cooperation between traders, they are particularly suitable for the application of alternative ways of resolving them. For that purpose, the European Union adopted Directive 2013/11/EU of the European Parliament and of the Council on alternative dispute resolution for consumer disputes. The possibility for alternative dispute resolution in the EU is upgraded with Regulation (EU) No 524/2013 of the European Parliament and of the Council on online dispute resolution for consumer disputes, which for the first time established the ODR platform.

The purpose of this paper is to analyze the advantages and disadvantages of alternative ways to resolve consumer disputes, the functioning of the ODR platform in the past period of its operationalization, as well as the possibilities for upgrading and wider application of alternative methods for resolving consumer disputes in the Republic of North Macedonia.

Key words: alternative dispute resolution, consumer disputes, ODR Platform, European Union.

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1. An Introduction to Alternative Dispute Resolution (ADR) for Consumer Disputes in Europe

"Justice is in crisis, the judicial system is in crisis" is a sentence that is often found both in academic circles and among ordinary citizens, both from the civil law system and from the common law system. "Slow justice is the greatest injustice" is the main motivation for resorting to and finding alternatives to the court that are more efficient and effective.

Alternative dispute resolution (ADR) refers to ways of resolving disputes between consumers and traders that don't involve going to court. ADR entities involve a neutral party, such as a mediator, ombudsman or complaints board that attempts to resolve the dispute through an ADR procedure (Knezevic & Pavic, 2013, p. 188). Depending on the form of ADR procedure that a given ADR entity operates, the neutral party can either: propose or impose a solution or bring the parties together to help them find a solution. Common forms of ADR are: mediation, settlement conferences, neutral evaluation, and arbitration. In legal theory, the phrase Alternative Dispute Resolution – ADR, is used to denote all extrajudicial (non-adjudicative) methods for resolving disputes (Zoroska Kamilovska, 2015, p.2).

Common to all types of ADR methods are their characteristics: autonomy of the parties, flexibility, neutrality, interest orientation, engagement of management skills, confidentiality and economy. One of the typical advantages of ADR is its adaptability to the concrete circumstances in which it is deployed.

Resolving consumer disputes with ADR methods is easier, faster, and less expensive than going to court. EU countries must ensure that all contractual disputes that arise from the sale of goods or provision of services — between consumers residing in the EU and traders established in the EU — can be submitted to an ADR entity. There are ADR bodies in every Member State of the EU.

2. Type of ADR systems for Consumer Disputes in the EU

The European Commission considers that improving consumer confidence in online cross-border shopping by taking appropriate policy action could provide a major boost to economic growth in Europe, because empowered and confident consumers can drive forward the European economy (Knudsen & Balina, 2013, p. 944). Therefore, the European Commission has established different means to ensure a high level of consumer protection all over the EU and ADR systems.

In Europe some of the ADR methods have been used already in ancient period. While in some European countries ADR schemes have a long and successful history of development, but in others they are novelty. The diverse levels of country development, culture and traditions, politics, the economy and other factors have determined that ADR schemes have evolved differently in each of the EU Member States. In 2009 it was concluded by the EC that there were 750 ADR schemes available in the EU for resolution of consumer complaints. For example: Romania has notified only one ADR entity that covers consumers

disputes in all retail sectors, but France has notified 99 sector-specific ADR entities (European Commission, 2019 p.6-7).

ADR has become a topical issue in contemporary European procedural private law (Maud, 2014 p., 269). Over the past fifteen years, European lawmakers have displayed particular interest in extra-judicial dispute resolution methods as part of a broader effort to promote better access to justice. The most common types of ADR for Consumers are: mediation, settlement conferences, neutral evaluation, arbitration and Complaint Commission for Consumers.

2.1. Mediation and conciliation

By means of mediation or conciliation the parties try to reach an amicable agreement with the participation of third party. The mediator's task is to make easier for the parties to find a solution satisfactory for them. The mediator himself doesn't impose any solution but takes care that the parties reach compromise independently.⁴

In conciliation system the third party, after listening to the arguments of both parties, tries to propose the best solution for them. This proposal doesn't need to bind the parties.

In mediation and conciliation, the parties are not limited by the provisions of substantive law and rules of procedure. Most often the amicable agreement concluded in such a proceeding additionally requires granting an enforcement clause by court.

2.2. Settlement conferences

A settlement conference is an informal, confidential meeting between the parties in the presence of a judicial officer (a judge or deputy judge). The judicial officer at your settlement conference will not be the judge at your trial.

Settlement conferences may be either mandatory or voluntary. In both types of settlement conferences, the parties and their attorneys meet with a judge or a neutral person called a "settlement officer" to discuss possible settlement of their dispute. The judge or settlement officer does not make a decision in the case but assists the parties in evaluating the strengths and weaknesses of the case and in negotiating a settlement. Settlement conferences are appropriate in any case where settlement is an option.

2.3. Neutral Evaluation

Neutral Evaluation is a process of assessing a dispute in which the evaluator seeks to identify and limit the issues of fact and law that are in dispute and, by that process, assist the parties to resolve the dispute (FindLaw, 2017). The

⁴ For the 7 different types of mediation (Facilitative Mediation, Court-Mandated Mediation, Evaluative Mediation, Transformative Mediation, Med-Arb, Arb-Med, E-mediation) see more in: Program on Negotiation at Harvard Law School. (2012). *Mediation Secrets for Better Business Negotiations: Top Techniques from Mediation Training Experts*. Harvard Law School.

Neutral Evaluation process is undertaken in confidence and without prejudice to the parties. Neutral evaluation may be most appropriate in cases in which there are technical issues that require special expertise to resolve or the only significant issue in the case is the amount of damage. Neutral evaluation may not be appropriate when there are significant personal or emotional barriers to resolving the dispute.

The evaluator does not resolve the dispute but focuses on the key factual and legal issues raised in the case and advises on how it could or should be resolved. The evaluator writes an evaluation in private that usually includes an assessment of the strengths and weaknesses of each case, an estimate of the likely outcome and any suggestions for resolution.

2.4. Arbitration

Arbitration is a method of out-of-court disputes settlement most similar to court procedures (Maud, 2014, pp. 272-273). Arbitration is a type of procedure according to which the parties select one or more neutral individuals to whom they present the case in order to obtain a final legally binding settlement.

It may be of single or institutionalised nature. In temporary arbitration each party of dispute selects its own arbitrator (or arbitrators) and then these appoint a super arbitrator. Selected in such a way composition settles a dispute on the basis of previously agreed rules. Institutional arbitration most often functions on the basis of professional organisation dealing with arbitration. In some models of arbitration there may be formed a necessity of conducting additional enforcement proceeding before a civil court.

2.5. Complaint Commission for Consumers

Consumer organisations, associations of entrepreneurs or commercial institutions may jointly or independently organise complaint commissions basing on provisions of common law or solutions based on soft-law. Complaint commissions are of collective nature with equal representation of consumers and entrepreneurs community. The commission's settlements mostly do not bind parties. Some complaint commissions may conduct consumer cases even without the entrepreneur's consent. Such a decision, although not binding, is significant for its reputation.

3. European Framework for ADR in consumer disputes - CADR

Consumer disputes are any disputes arising between a consumer and a business from an agreement for the sale of products or provision of services. According to the Law such disputes are resolved firstly between the business and the consumer and if this is not possible, they can then be resolved through an Alternative Dispute Resolution Entity.

Hodges rightfully points out that consumer ADR proceeds according to a quite distinct dynamic and occupies a different context than the traditional ADR

mechanisms. He even proposes to use a new acronym for Consumer ADR (Christopher, Hodges, et al. 2012).

The focus of the recent EU ADR initiatives lies with consumer disputes. Except for the Mediation Directive, which covers "civil and commercial disputes," relevant European instruments in this field all deal with consumer ADR.

The European Law Institute carefully advocates that there is a role to play for ADR in disputes relating to the Common European Sales Law in the business-to-business (B2B) context, as well as in the business-to-consumer (B2C) context. The goal of this legislation is to ensure the proper functioning of the EU's single market.

The main document for ADR in consumer disputes – CADR, is Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC.

Related documents are Regulation (EU) No 524/2013 of the European Parliament and of the Council of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR).

EU policy-makers addressed consumer ADR at first through non-binding standards and sector-specific legislation requiring Member States to encourage or ensure access to out-of-court dispute resolution mechanisms.

With Directive 2013/11/EU on alternative dispute resolution (ADR Directive) and Regulation (EU) No 524/2013 on online dispute resolution (ODR Regulation) a horizontal legislative framework for consumer ADR and ODR was established.

3.1. Directive 2013/11/EU of the European Parliament and of the Council on alternative dispute resolution for consumer disputes

Directive 2013/11/EU has intended to promote high-quality consumer ADR schemes in the EU through the creation of approval processes and regular monitoring.⁵

Key point of Directive 2013/11/EU is that EU countries must ensure that all contractual disputes that arise from the sale of goods or provision of services - between consumers residing in the EU and traders established in the EU - can be submitted to an ADR entity (Biard, 2018. pp., 109-147).

It applies to both online and offline sales and services.

It has applied since 8 July 2013.

To obtain and keep certification, ADR bodies must continuously comply with several binding requirements set down in the Consumer ADR Directive testifying among other things of their impartiality, independence, expertise,

⁵ Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR), OJ L 165, 18.6.2013.

transparency, accessibility, as well as of the fairness, timeliness and effectiveness of their procedures.

The Directive builds on and further consolidates the architecture established by two Recommendations of the European Commission in 1998 and 2001, which set down minimum quality requirements for out-of-court procedures.

The underlying objective of this new framework was to trigger some long-term effects on the procedural design and functioning of ADR bodies, and to enhance their credibility and legitimacy vis-à-vis consumers and traders. As such, it aimed to respond to the criticisms sometimes expressed about the way ADR providers operate, in particular concerns regarding schemes' lack of independence, limited accountability and possible effects on due process.

The Directive has followed a minimum harmonization approach. It has sketched a framework that Member States were free to further complement to ensure a higher level of consumer protection. The Directive also gave Member States some leeway to create their own certification and monitoring processes reflecting and tailored to the peculiarities of their national ADR landscapes. As a consequence, ADR certification and monitoring tend to diverge significantly across the EU.

The aim of Directive 2013/11/EU on alternative resolutions for disputes between traders and consumers is a) it ensures that EU consumers can submit their contractual dispute with an EU trader over a product or service to an alternative dispute resolution (ADR) entity, a recognized body whose role is to resolve disputes by means of ADR procedures, i.e. without going to court, b) it sets out binding quality requirements for ADR entities and procedures to ensure aspects such as transparency, independence, fairness and effectiveness, and c) it obliges traders to inform consumers about ADR when the former have committed or are obliged to use ADR and when they cannot bilaterally resolve a dispute with the consumer.

3.2. Regulation No 524/2013 of the European Parliament and of the Council on online dispute resolution for consumer disputes

In spite of internet technology development and e-commerce appearance in every day transactions, it was necessary to be found new way of resolving disputes through the use of electronic communications and other information and communication technology. Online dispute resolution (ODR) is a branch of dispute resolution which uses technology to facilitate the resolution of disputes between parties.

Most forms of ODR are based on more traditional forms of Alternative Dispute Resolution (ADR).⁶

Regulation No 524/2013 shall apply to the out-of-court resolution of disputes concerning contractual obligations stemming from online sales or service contracts between a consumer resident in the Union and a trader established in the

⁶ Regulation (EU) No 524/2013 of the European Parliament and of the Council of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Regulation on consumer ODR).

Union through the intervention of an ADR entity (Mišćenić & Butorac Malnar, 2017. pp, 103 – 142).

The Regulation defines the ‘consumer’ as natural persons who are acting outside their trade, business, craft or profession. Even if the contract is concluded for purposes partly within and partly outside the person’s trade (dual purpose contracts) and the trade purpose is so limited as not to be predominant in the overall context of the supply, according to the Regulation that person should also be considered as a consumer. Online sales or service contract is defined as a sales or service contract where the trader, or the trader’s intermediary, has offered goods or services through a website or by other electronic means and the consumer has ordered those goods or services on that website or by other electronic means. Consequently, the Regulation should not apply to disputes between consumers and traders that arise from sales or service contracts concluded offline and to disputes between traders.

The Regulation (EU) No 524/2013 aims to create an ODR platform at Union level. According to the Regulation, the ODR platform should take the form of an interactive website offering a single point of entry to consumers and traders seeking to resolve disputes out-of-court which have arisen from online transactions.

The ODR platform provides general information regarding the out-of-court resolution of contractual disputes between traders and consumers arising from online sales and service contracts. Also allows consumers and traders to submit complaints by filling in an electronic complaint form available in all the official languages of the institutions of the Union and to attach relevant documents. After that the platform transmits complaints to an ADR entity competent to deal with the dispute concerned. The ODR platform contains a multilingual register of 468 quality Alternative Disputes Resolution (ADR) bodies active across the Union, Liechtenstein and Norway. (European Commission, 2021, p. 1). Prior, the consumer and the trader have a right to choose direct communication between them prior of sending the dispute to ADR entity. The direct talk is a new module introduced in mid-2019: the consumers are given an option to share a draft complaint with a trader before submitting it officially, to try to settle the dispute directly. Within the deadline of maximum 90 days, in manner of their direct communication, they can reach an agreement.

In order to increase the awareness of ODR platform, the traders established within the Union engaging in online sales or service contracts, and online marketplaces established within the Union, have an obligation to provide on their websites an electronic link to the ODR platform.

According to statistic data, between 2017 and 2018, the take-up of e-commerce by consumers continued the upward trend observed over the last decade. About 60% of consumers in the EU made purchases online compared to 30% in 2007. Also, in 2017, 19.5% of all companies (with at least 10 employees) were selling online and e-commerce accounted for 17.4% of the total turnover of companies (European Commission, 2019, p. 13). Consumers increasingly make purchases online and an increasing number of traders sell online. In due to this fact, it was more then necessary for EU to offer a simple, efficient, fast and low-cost out-of-court solution to disputes arising from online transactions. According

to Regulation (EU) No 524/2013 consumers are key players in the internal market and should therefore be at its heart. Consumers and traders should feel confident in carrying out transactions online so it is essential to dismantle existing barriers and to boost consumer confidence. The availability of reliable and efficient online dispute resolution (ODR) could greatly help achieve this goal.

According to Commission's yearly reports to the European Parliament and the Council on the functioning of the ODR platform, apparently the number of submitted complaints is increasing. As a comparison more than 24,000 complaints were submitted on the platform in its first year of operation (European Commission, 2017, p. 4). The trend of complaints submitted per month, which in total is more than 36,000 cases in the second year of operation, shows that the number of complaints has increased 50% more than in the first year (European Commission, 2018, p. 2). According to data from 2020 only small proportion of visitors submitted a finalised complaint (17 461), and 30 319 visitors submitted the request for direct talks (European Commission, 2018, p. 3). By analyzing the statistical data from the Commission reports divided in sections - countries where the consumer or trader origins, we can conclude that there is a large difference between the number of complaint by the country of the consumer or of the trader. For example consumers and traders from Germany and Italy, used the platform the most (European Commission, 2021, p. 4). Also, by the years it hasn't been changed the fact that the most complained retail sector was airlines. It is very important to stress out that 44% of the cases submitted on the European ODR platform are direct settled (European Commission, 2017, p. 7).

In direction to examine the progress in the integration of the EU retail market based on the level of business-to-consumer cross-border transactions and the development of e-commerce, we also made an analysis on the data published in The Consumer Conditions Scoreboard, published every two years, which is the main instrument for monitoring the consumer environment across Europe. It looks at three main dimensions: knowledge and trust; compliance and enforcement; complaints and dispute resolution. According to Consumer Conditions Scoreboard, 2019 edition, there is no bigger difference in retailer awareness of and willingness to use out-of-court resolution mechanisms, comparing 2016 and 2019, even it is noticed negative trend in retailer awareness and willingness to use some of ADR methods (European Commission, 2019, p. 52). With crossing the information from Consumer Conditions Scoreboard, 2017 edition, and Reports on the functioning of the European Online Dispute Resolution platform, we can notice the difference in time needed to resolve litigious civil and commercial cases, first instance/in days, and time complaints life cycle according to ODR Regulation. It is shown on chart in the Scoreboard the average time needed to resolve litigious civil and commercial cases (the area where consumer disputes belong) in first instance in days, for the period 2010-2015, depending the country it varies from 100 days to 900 days (Ibid, 69. figure 45). Also, there are information about time needed to resolve appeals relating to decisions of consumer protection authorities, for the period 2013-2015, and depending the country it varies from 100 days to 800 days. Effective and economical aspect of ADR methods uptake of ODR platform is shown in this numbers: in 2/3 of those

cases the final outcome was reached within the 90-day deadline (European Commission, 2017, p. 7).

4. Alternative resolution for consumer disputes in Republic of North Macedonia

Consumer disputes in the Republic of North Macedonia arise between traders and consumers in connection with (non)fulfillment and/or delay in fulfilling rights and obligations from a consumer relationship (sales contracts, tourist contracts, contracts for the provision of services, contracts for online trade).

A basic characteristic of consumer disputes in the Republic of North Macedonia is that these disputes are numerous and have a relatively low value.

The disputes that may arise between a consumer and a trader who sold him a product or a trader who provide him a certain service in North Macedonia can be resolved in spirit of the solutions stipulated by article 13 of the Law on Obligational Relations; which means that trader and the consumer shall resolve disputes by conciliation, mediation or other peaceful ADR methods.

Hence, ADR methods are ideal for resolving consumer disputes because they help the parties to reach an agreement in the most efficient way. This is because ADR methods open up the possibility of amicable resolution of consumer disputes directly by the trader himself or through mediation, with the mediation of civil society organizations, in a mediation procedure, before a special arbitration and the like.

The most popular ADR method for resolving consumer disputes in the Republic of North Macedonia is mediation.

According to the Strategy for reformation of judicial sector for 2017-2022 year and Action plan, Republic of North Macedonia has taken an obligation on further development of mediation and exceeding the critical points and problems in relation with mediator exams, promotion and popularization of mediation and other critical points according to implementation and use issues of mediation in Macedonia (Ministry of Justice, 2017, p. 17).

The next step was adoption of new Law on mediation (Official Gazette of RNM" no.294/21). The new law on Mediation, which is the third Law on mediation in the country, was enacted in 2021. According to the legislator, the text creates new and contemporary frame in which are incorporated the standards of Council of Europe, European experiences and also it is harmonized with EU law frame.

The Law on mediation inter alia applies on domestic and cross border consumer disputes. The consumer can participate in the resolution of the dispute through mediation on his own initiative as well as on the trader's request. If the consumer had submitted a lawsuit the competent court, the court can also refer the partis to mediation and will indicate that they can resolve the dispute before a mediator and if the agree. According to an article 203 (3), Law on Litigation procedure, the court proceedings will stay within 45 days in which consumer and trader should try to resolve the dispute in this way.

According to statistical data presented in Draft version of Law on mediation, we can conclude that the number of mediations in the period of 2017-2019 year, comparing with the period from 2006-2016 year has significant increased. Thus 1.364 cases have been recorded in the Register of mediation procedures recorded by the Ministry of justice in the period of 2017-2019 year and 79% of the cases are settled amicably. Just for comparison in the period of 2006 -2016 less than 100 cases were held before mediators in the country. In the statistical data is missing the information about the number of consumer cases.

However, according to the Law on the protection of consumer rights, the protection of rights, and thus the resolution of disputes, is the responsibility of the courts and state authorities. Despite this approach the law gives the right to the consumers to establish associations for the protection of their rights, which have the right to counseling consumers and traders of goods and service providers for the purpose of resolving disputes. The Consumers Organization of Macedonia has a significant impact in counseling consumers. According to Report of Consumers Organization of Macedonia during 2021 the Organization has made 2572 counseling on consumers, and most of them were held on telephone (31%), email (7%) and via Facebook page (3%) (Consumers Organization of Macedonia, 2021, p.7).

Due to the fact that very often the consumer disputes are small claim disputes, the use of the mediation for resolving them is very appropriate.⁷ In the Economic analyzes of costs and benefits of small claim disputes is shown that the plaintiff should pay more than a half average salary (55%) to start court small claim case before Basic court in Skopje. Also, in the same analyze the authors make a conclusion that Macedonian Budget on yearly bases will have a savings approximately about half million euros if it is widely speared the use of ADR methods in small claim disputes (Pepovski & Hodzic, 2019 p.54-55).

We can notice that the Republic of North Macedonia has established the basis of modern and contemporary law framework for mediation and consumer protection after the adoption of the new Law on mediation and after final adopting the new Law on consumer protection.⁸ We can agree that the Consumers Organization of Macedonia has a significant role in the protection of consumers, but unfortunately, we can say that the use of mediation willing by the both parties (consumer and trader) is not used very often. Also, according to the fact that during Covid-19 pandemic the number of sales made online and the disputes arising from these sales has a significantly increased, we can agree that Republic of North Macedonia has to do a lot in the sphere of online dispute resolution methods.

⁷ According to Law on Litigation procedure, small claim disputes are disputes correlated to claim which is less than 600.000,00 denars.

⁸ The procedure of adopting the new Law on Consumer Protection started in October 2021, and till august 2022 the Law is not adopted yet.

Conclusion

EU has done a lot in the sphere of protection of consumers in European single market. Alternative resolution of consumer disputes, as a court alternative, is increasingly promoted in EU law. This is because the quick resolution of consumer disputes is a prerequisite for the successful functioning of the European single market. Resolving the consumer disputes in easy and low-cost manner, as mediation does, can boost consumers' and traders' confidence in the digital European single market.

More than 10 years after adoption of Directive 2013/11/EU on alternative dispute resolution (ADR Directive), consumers and traders, still face barriers to finding out-of-court solutions in particular to their disputes arising from cross-border online transactions. While overall ADR awareness has increased among both consumers and traders, awareness levels are still insufficient in some regions and retail sectors in EU. Overall, ADR awareness is lower in SMEs than in large retailers. However, about six years after the launch of the ODR platform, the ADR/ODR framework has yet to reach its full potential.

Unlike the EU, the Republic of North Macedonia, still needs to work on the legal framework, first of all it is necessary to adopt the Draft Law on Consumer Protection. In parallel with that, more activities and measures are needed to increase the awareness of consumers and traders about the positive aspects of the application of mediation. With the increase in the number of online transactions made by Macedonian consumers especially in recent years, it is necessary to think in the direction of further establishment of an online platform where consumers and traders will be able to raise and effectively resolve their disputes following the example of Regulation No 524/2013 of the European Parliament and of the Council on online dispute resolution for consumer disputes.

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THE RELATIONSHIP BETWEEN ORGANIZATIONAL
JUSTICE AND EMPLOYEE SILENCE: A STUDY ON
PUBLIC EMPLOYEES

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Abstract

Even though technological developments continue to be experienced at a dizzying pace in today's business world, the human factor continues to maintain its importance. For this reason, many managerial issues continue to emerge. The concept of organizational justice is one of these issues, which reveals the expectations of the employees from the organization in return for the effort they spend for the organization. Employees in organizations where organizational justice is provided work more happily. Employee silence, which is another concept related to the human factor, is the behavior of employees to avoid expressing their positive or negative thoughts about the organization. It is critical for the success of the organization that the employees can express their ideas clearly and easily express their suggestions and problems. It is thought that in businesses where organizational justice exists, employees can freely express their opinions and thus silence behaviors will decrease. In this study, the relationship between organizational justice and employee silence is examined. Research data were collected from public servants in a district of Konya through a survey technique. The obtained data were analyzed with statistical methods. As a result, a significant relationship was found between the concepts of organizational justice and organizational silence.

Keywords: Organizational Justice, Organizational Silence, Organization.

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1. Introduction

In today's world where technology is developing rapidly, the way for organizations to compete depends on having qualified human resources. In today's competitive conditions, it is not enough for organizations to make a profit. In order to maintain its existence, it must satisfy both its internal and external customers. For organizations, the most important capital element that cannot be imitated by competitors is human resources. The ability of organizations to use human resources efficiently depends on the policies they will follow. At this point, the importance of the concept of organizational justice emerges. The perception of organizational justice is highly effective on employees. In enterprises where organizational justice is ensured, employees can work happier, more peacefully and satisfied with their jobs. In organizations that are unfair or perceived in that way, it may cause employees to experience a sense of burnout, decrease in their performance and motivation, and leave their jobs. In addition, some employees may continue to work and experience a state of introversion and silence. At this point, the concept of employee silence emerges. The concept of employee silence emerges as a situation where employees do not express their opinions on organizational issues. In this case, employees do not share their ideas, suggestions and thoughts with their organizations.

2. Conceptual Framework

2.1 Organizational Justice

Employees make a certain judgment about whether the processes, duties, rewards and behaviors shown to them are fair or not and develop a certain attitude towards the organization in line with this judgment (Greenberg, 1990, p.399). Employees' relations with their managers, colleagues and the organization and the exchanges that occur within the organization provide the formation of a perception of organizational justice (Beugre, 1998, p.351). The perception of the decisions and practices taken by the organization management as fair by the employees will reflect positively on the motivation and performance of the employees (Koçel, 2014, p.530). A sense of fairness perceived as positive will make employees trust the organization more and feel valued. A sense of justice perceived negatively will lead to negative behaviors (Özmen et al., 2007, p.19).

Organizational justice has been expressed as a phenomenon that affects the attitudes of employees within the organization, includes factors such as division of labor, wages, rest conditions and determines the quality of social interaction within the organization (Poyraz et al., 2009, p.73). According to another definition, organizational justice refers to the distribution of duties of employees, their level of pay, their compliance with overtime, distribution of rewards, authorization, etc. It is explained as the process of evaluating managerial decisions for variables (İçerli, 2010, p.69). Organizational justice includes consequences that affect employees' relationships with others and their psychological, physical, and social well-being (Pettola et al., 2007).

The concept of organizational justice was initially considered as two dimensions as distributive justice and procedural justice (Greenberg, 1987, p.13). Later, the interactional justice dimension was introduced into the literature as a third dimension (Colquitt, 2001, p.392). Distributed justice is explained as the perceived fairness of the outputs that the employee receives from the organization. Organizational outputs can be distributed based on need, contribution and equality. At this point, employees compare themselves with others and decide whether the distribution is fair or not (Alsalem and Alhaiani, 2007). Distributive justice is based on Adams' theory of equality. Distributional justice is the perception of fairness in relation to the amount of earnings of employees (Folger and Konovsky, 1989, p.115). Procedural justice is a concept about giving employees a say in the decision-making process of the organization and in the implementation of this process (Steiner and Bertolino, 2006, p.2). Procedural justice is the perception of fairness in relation to the means used to quantify the gains made by employees (Folger and Konovsky, 1989, p.115). Interactional justice is the perceptions of fairness in relation to interpersonal behavior exhibited during the implementation of procedures and decisions (Bies and Moag, 1986). Interactional justice is a different type of justice from procedural justice. While procedures are related to the structural nature of the decision-making processes of the organization, interactional justice refers to the social change between two people (Karademir and Çoban, 2010, p.55).

2.1. Organizational Silence

The first studies on employee silence date back to the 1970s and Hirschman's work. Hirschman (1970) expressed silence as a passive but positive situation that symbolizes loyalty to the organization. Organizational silence is expressed as employees who do not want to express their concerns prefer silence due to fear (Milliken and Morrison, 2003, p.1563), and employees deliberately do not want to express their ideas and opinions (Scott, 1993). Employee silence is the deliberate retention and non-sharing of information for a variety of reasons (Pinder and Harlos, 2001; Van Dyne, Ang and Botero; 2003).

The theoretical foundations underlying the preference of employees to silence in organizations are based on waiting theory, silence spiral, silence effect, self-adaptation theory and cost-benefit analyses (Premeaux, 2001, p.9; Uçar, 2016, p.71). Many reasons such as the structure of the organization, the culture that dominates the organization, economic crises, fear of relocation of employees, fear of dismissal affect the size and direction of silence. In such cases, employees prefer to remain silent instead of talking (Kahveci, 2010, p. 6).

Although employee silence in organizations is initially perceived as organizational commitment, it is essentially expressed as the employee consciously conceal information despite having knowledge of all positive or negative aspects of the organization (Çakıcı, 2010, p.9). The reasons for employee silence are listed as employees' distrust of their managers, exclusion, seeing speech as risky and fear that relationships will deteriorate (Gül and Özcan, 2011, p.113).

There are many researches about organizational justice and organizational silence. Wang and Jiang (2015, p.211) concluded in their study that bad managers negatively affect the perception of interactional justice and that there is a positive relationship between the perception of interactional justice and employee silence. Duan et al. (2010) revealed that the fair treatment of managers has a negative effect on employee silence. Ünlü et al. (2015) stated that there are negative relations between the dimensions of organizational justice and defensive silence and positive relations between protectionist and accepting silence. In their study, Tangirala and Ramanujam (2008, p.37) revealed that the silence levels of employees were lower in organizations with a high climate of procedural justice.

3. Research Method and Findings

The aim of this study is to reveal whether there is a relationship between public sector employees' perceptions of organizational justice and employee silence behaviors. The study is empirical research. In the study, survey technique was used to collect the data. The questionnaires were applied face-to-face to employees. The questionnaire is designed in three parts. In the first part, information about the demographic characteristics of the employees, in the second part; statements about perceptions of organizational justice and statements about perceptions of organizational silence are included in the third section. The organizational justice scale used in the study was adapted from the study of Niehoff and Moorman (1993), and the organizational silence scale was adapted from the study of Van Dyne et al. (2003). The organizational justice scale consists of 20 expressions and the employee silence scale consists of 15 statements. The scales used in the study were designed as five-point Likert-type scales ranging from "Strongly disagree" to "Strongly agree".

The research was carried out on public sector employees in a district of Konya province. Since it was possible to reach all the employees, there was no need to determine the sample. A total of 100 employees operating in the current district participated in the study.

With this study, it is aimed to determine the relationship between organizational justice and employee silence and for this purpose, the following hypothesis was put forward.

H₁: There is a significant relationship between organizational justice and employee silence.

SPSS 25.0 program was used to analyze the data in the study. First, reliability analysis was applied to test the reliability of the scales. As a result of the reliability analysis of the organizational justice scale, Cronbach's Alpha value for 20 statements was calculated as 0.97. As a result of the reliability analysis of the employee silence scale, Cronbach's Alpha value for 15 statements was found to be 0.90. According to the obtained values, it is seen that both scales are reliable.

In the analyzes, demographic findings related to employees were given as Frequency (n) and Percentage (%). The standard deviation and mean values of the expressions in the scales are also included in the tables. The relationship between the research variables was analyzed by means of Pearson Correlation Coefficient.

Demographic findings of the employees participating in the study are reported in Table 1.

Table 1. Distribution of Participants According to Demographic Characteristics

		Frequency (n)	Percent (%)
Gender	Female	3	3,0
	Male	97	97,0
	Total	100	100,0
Marital Status	Single	72	72,0
	Married	28	28,0
	Total	100	100,0
Age	18-25	13	13,0
	26-30	34	34,0
	31-35	34	34,0
	35-45	7	7,0
	45+	12	12,0
	Total	100	100,0
Educational Status	Primary school	2	2,0
	Middle school	27	27,0
	High school	26	26,0
	Bachelor's	37	37,0
	Graduate	8	8,0
	Total	100	100,0
Working time at this workplace	Less than 1 year	15	15,0
	1-5 years	45	45,0
	5-10 years	33	33,0
	More than 10 years	7	7,0
	Total	100	100,0
Position	Chief	2	2,0
	Worker	40	40,0
	Officer	41	41,0
	Manager	6	6,0
	Engineer	2	2,0
	Chef	5	5,0
	Technician	4	4,0
	Total	100	100,0

The distribution of the research participants according to their demographic status is given in Table 1. It is seen that 97% of the participants are male and 3% are female. When the marital status of the participants is examined, it is seen that 72% of the employees participating in the research are married and 28% are single. When the distribution of the participants according to their ages is examined, the highest rate is in the 26-35 age range. When the distribution of the participants according to their educational status is examined, it is seen that 37% of most of the participants have a bachelor's degree. When the distribution of the participants according to their working time in the current workplaces is examined, 45% of them work in this workplace in the range of 1-5 years. When the positions of the participants are examined, it is seen that 41% of them are officer and 40% of them are worker.

When the descriptive statistics of the expressions in the organizational justice scale are examined, the general average of the expressions measuring organizational justice is 3.52 and the standard deviation is 0.77. This result expresses a high level of organizational justice based on the rating scale. The overall average of the expressions on the scale created to measure employee silence is 4.05, while the standard deviation is 0.58. Among the sub-dimensions of employee silence, pro-social silence averaged 4.30; defensive silence averages 3.99; The average acquiescent silence was found to be 3.87. This result expresses a high level of employee silence based on the rating scale.

Table 2. The Results of Pearson Correlation Analysis

		Organizational Justice	Employee Silence
Organizational Justice	Pearson Correlation	1	,390**
	Sig. (2-tailed)		0,000
	N	100	100
Employee Silence	Pearson Correlation	,390**	1
	Sig. (2-tailed)	0,000	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

Pearson Correlation analysis was conducted to determine the relationships between the organizational justice and employee silence scales and their sub-dimensions. A statistically significant and positive relationship was found between the participants' perceptions of organizational justice and their level of employee silence (Pearson's $r = 0.390$, $p < 0.01$). There is a moderate positive correlation between the two variables. The increasing perception of organizational justice affects the level of employee silence in the same direction. According to this result, the hypothesis "H₁: There is a significant relationship between organizational justice and employee silence" was accepted..

In their study, Ünlü et al. (2015) determined that there is a positive relationship between teachers' perceptions of organizational justice and their

protective and accepting silences. Wang and Jiang (2015: 209) stated that there is a positive relationship between interactional justice and employee silence, and the result of these studies and the result of the study show similar characteristics. The high perception of organizational justice shows that the employees of this sector believe that the practices applied to them are fair. The high level of employee silence has been seen that those working in the public sector prefer especially pro-social silence. Their level of defensive and accepting silence was also high.

4. Conclusion

The concept of organizational justice is related to the processes implemented in the workplace and the perceptions of employees about the results obtained. If employees compare themselves to other employees and think that the treatment they receive is fair, they think that there is organizational justice. When they think that internal practices are fair, they work with more morale and motivation. Their high motivation affects their business success and performance.

Employee silence is the situation where all kinds of ideas, suggestions or information related to the job are kept consciously due to various reasons and not shared with others. Organizations sometimes push employees to remain silent without realizing it or intentionally. Employees who think that their suggestions will not reach any results sometimes prefer to remain silent.

In the study, first, various demographic characteristics of the employees participating in the research were determined. The research was conducted in the public sector and determined as demographic variables such as gender, marital status, age, education level and working time. Correlation analysis was then performed to determine whether there was a relationship between organizational justice and employee silence. As a result of the analysis, a significant and positive relationship was found between organizational justice and employee silence. The reason for this situation is thought to be due to the stereotyped decision-making procedures and excessive hierarchical structure in the public sector. In addition, the idea of preventing conflict and other dangers among employees, the fear of punishment in employees can lead employees to remain silent even in an environment where there is organizational justice.

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FUNCTIONS AND ROLE OF ECONOMIC DIPLOMACY
AND ECONOMIC SECURITY WITH A SPECIAL REVIEW
OF RSM

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Abstract

Economic diplomacy, in modern working conditions, when the main goal is to achieve economic growth and development by achieving competitive market goals, is important, and at the same time a pillar of the development of world cooperation, peace and security. The level of development of economic diplomacy varies from country to country, and is conditioned by the natural, social and especially the economic development of the country, which is a factor in determining the place and role of a national economy on the world economic stage. One of the main functions of economic diplomacy is primarily the protection of national interests in international economic relations, which should contribute to achieving several goals such as: preserving the security of the country at the national level, raising export capacity and reducing import dependence. , promoting international competitiveness, positioning domestic products on international markets, as well as ensuring a better standard of living for its inhabitants. The Republic of Northern Macedonia after its independence and transition to a market economy, began with numerous reforms and changes in the field of economic diplomacy, which in this time frame has become the most important instrument for achieving national goals. This paper will explain the importance of economic diplomacy for security in RSM.

Keywords: economic diplomacy, security, international economic relations, economic development, world cooperation.

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1. TERM AND DEFINITIONS OF ECONOMIC DIPLOMACY

From the Renaissance to the present day, economic issues have been one of the most priority and important tasks of diplomacy, along with the political and security aspects that ensure an appropriate balance of power. Economic and security-political diplomacy can be seen as two linked links that alternately receive priority in the interdependence of historical circumstances and the current environment in which they are located.

Economic diplomacy in the international system gains importance with the emergence of globalization, that is, in conditions of a lack of appropriate rules and institutions that handle the standards and frameworks in which economic subjects should act on a planetary level.

Considering that economic diplomacy has a clear historical-developmental dimension, it can be stated that the term is of a more recent date and originates from the French language - *la diplomatie économique*. Very quickly this term was accepted by the Russian diplomacy under the name - *ekonomikačeskaja diplomatija*, while the Anglo-Saxon variant uses the terms trade diplomacy (commercial diplomacy), although recently the term economic diplomacy has been used.

Economic diplomacy is defined as:

"An activity whose basic task is: protection, promotion and development of the economic and political position of the state in the sphere of international relations, which in the process of globalization and its realization require professionals with a wide range of knowledge from different fields."³

According to Professor Prvulović, economic diplomacy⁴

" is a specific combination of classical diplomacy, economic and management sciences, methods and techniques of negotiation with foreign partners, public relations and collection of economic information that is important in positioning the country or companies on the world market.

Berridge, G.R. and James, A. define economic diplomacy as follows:⁵

- "diplomacy dealing with economic policy issues, including the work of delegations to conferences under the auspices of bodies such as the World Trade Organization." Although distinct from the commercial diplomacy of diplomatic missions, it also includes part of their work which concerns monitoring and reporting on economic policies and development in the receiving state and giving instructions in influencing them.

- "diplomacy that uses economic resources, either as rewards or sanctions, in the pursuit of a particular foreign policy objective. It is sometimes called the economic skill of the state."

³ Dzombic, I.(2008). Dzombic, I. (2008). Economic diplomacy of Bosnia and Herzegovina. Banja Luka. University of Business Engineering and Management.

⁴Prvulovic, V. (2010). "Economic Diplomacy". Megatrend University Belgrade. 16

⁵ Berridge, G.R. & James, A. (2003): Dictionary of Diplomacy, Second Edition, Panglave Macmillan, 91

Djukic believes that "economic diplomacy represents a specific type of diplomatic activities that are aimed at achieving the economic interests of the country that implements them."⁶

There are two aspects of looking at economic diplomacy. The first is broader and according to it, economic diplomacy refers to all subjects of a society that participate in strengthening the economic competitiveness of the country by implementing specific diplomatic methods. The second aspect is narrower and refers to the exclusive activities carried out by the Ministry of Foreign Affairs in defense of the economic interests of its country.

Governments of all countries undertake various activities in order to support the global performance of companies from their territories, for reasons that in case of passivity of the governments of some countries, companies from other countries whose governments are more active will derive numerous advantages and benefits. This leads to the conclusion that it is an open struggle for the growth and development of the economic power of some companies, and their success in the global market is basically the success of the economic policy of their governments.

2. FUNCTIONS AND GOALS OF ECONOMIC DIPLOMACY

The states refer to each other in terms of cooperation in all domains, and especially in the economy, so that no state can isolate itself from the world, which threatens its survival. The complexity of international relations leads to the fact that in some countries, especially the countries of the European space, it has led to an increase in economic and political interdependence.

Economic diplomacy has the function of economic-political progress in the country, mostly through stabilizing the economy and successful promotion and representation in the world, but it also supports the economic development of the country as well as external-economic and external-political performance within the framework of the international community. the function of economic diplomacy is, of course, primarily the protection of national economic interests in the economic relations between states, and above all in the promotion of the national economy in the world. At the same time, it is an instrument in the fight with competitors, it searches for significant economic information, by establishing and conquering new markets and expanding old ones, for the purpose of making profits at the expense of one's own country, that is, of national enterprises.

Professor Prvulović, citing the work of the authors Ornatski & Mary McBryde, identified the basic functions of economic diplomacy:⁷

- creation of the most favorable starting positions of one's own country in economic cooperation with other countries;
- establishing business relations with state institutions of other countries in the economy sector, business firms and other economic entities in foreign countries;

⁶ Gukic, M. (2015). "Development of the system of economic diplomacy in order to strengthen the development and competitiveness of the economy of the Republic of Serbia", 513.

⁷ Prvulovic, V. (2010). "Economic Diplomacy". Megatrend University Belgrade. 16

- systematic monitoring of opportunities on the international market and analysis of the economy of other countries;
- control of the turnover of capital within the overall development goals as well as the economic performance of the country abroad;
- conducting bilateral and multilateral economic negotiations;
- continuous and proactive analysis of the international situation, analysis of the comparative advantages and strategy of foreign countries and overall trends in the world economic scene;
- maintenance of existing and establishment of new economic and business relations with foreign partners;
- preparation and observance of international economic conventions and
- dedicated work to the formation of favorable conditions for economic progress and security stability of a country.

The volume of exports or imports of a country depends a lot on economic diplomacy, bearing in mind that all countries strive to achieve the greatest possible export in relation to import, and of course it is of decisive importance for attracting foreign investments as well as successful investment abroad. Some of the subjective motives for international operations are the existence of strong competition in the domestic market and the fear of losing markets and investing in industries that are attractive and attractive.

That is why economic diplomacy ensures communication with diplomatic representatives of other countries with whom economic cooperation is negotiated, investment opportunities and giving guarantees that investments are safe. Capital that has long crossed the borders of a country migrates to where it can be fertilized, that is, where all the necessary economic, organizational, legal and infrastructural conditions are provided. In such a situation, economic diplomacy should attract foreign investors and create the belief that there are justified economic interests for it. According to Daniela Ristic - Petrovic, economic diplomacy in modern economic relations should contribute to the following goals:⁸

- increasing export capacity and reducing import dependence;
- promotion of international competitiveness in the field of economy;
- provision of strategic and financial support by the most important international institutions;
- preservation of the country's security within national frameworks;
- active participation in projects of world significance and importance;
- creation of a globally recognized brand and trademark;
- positioning of domestic products on international markets and
- providing a better standard of living to its residents.

It is very difficult to identify all spheres and areas in which modern economic diplomacy affects the competitiveness of a country. In addition to the listed functions and goals, there are also a huge number of secondary functions and goals that will become equally important in the future. Here, above all, I mean

⁸ Petrović, R.D. (2016). Contemporary economic diplomacy as an instrument for achieving economic goals R. Serbia. Megatrend show. p. 151 - 154

those economic relations that are the result of globalization and increasingly create and shape the economic relations of the states.

3. GEOPOLITICAL AND SECURITY ASPECT OF ECONOMIC DIPLOMACY

The geopolitical position of some countries is the most important constitutive element and includes natural, political, economic and geographical factors and unites the complex assessments of natural potentials, geo-demographic processes as well as the contemporary cultural-political reality.⁹

In today's relationship of strength and power, in the process of globalization while achieving the necessary level of defense and security as a whole, all countries consider the current forms of collective security. Looking at the geopolitical and geostrategic environment, despite the stated challenges that threaten the security of the countries, the conclusion is imposed that the countries by relying on their own forces cannot achieve the desired level of security and success in development, through security integration the vital national interests will be preserved. and state interests and increased social and defensive power. In that process, the role of economic diplomacy comes to the fore, so it cannot be imagined that more states cannot achieve the desired level of collective security, if economic diplomacy is not included in that process. Achieving state security, in modern conditions, is not a goal that can be achieved without financial means, and therefore the economy becomes a direct partner in this process. International security organizations need funding for their work, and according to the economic power and the skill of economic diplomacy, the member states get a more influential and less influential position in these organizations.

4. ECONOMIC DIPLOMACY IN THE REPUBLIC OF NORTH MACEDONIA – FUNCTIONS, GOALS AND CONCEPT OF ECONOMIC DIPLOMACY

The Government of the Republic of North Macedonia, in accordance with the orientation to ensure the economic progress of the country, set as its priority the further development and strengthened role of economic diplomacy as one of the priority activities in the Work Program in 2019. In achieving this goal, the Ministry of Foreign Affairs, together with the Diplomatic Consular Representations (DCR) through economic diplomacy, is an important bearer of the obligation to implement the priority, as well as to establish mechanisms for the coordination of the total institutional potential in the function of valorization and promotion of our economic interests abroad.¹⁰

The Ministry of Foreign Affairs in its daily operations is focused on the realization of specific initiatives, including further strengthening of the image of

⁹ Sekulović, D. & Gigović, Lj. (2008). The European component of Serbia's geopolitical position. International relations. www.sgd.org.rs/publications/globus/34/04_sekulovic_gigovik.pfg.07.8.2016

¹⁰ <https://www.mfa.gov.mk/mk/page/8/ekonomska-dimplatija>, visited on August 10, 2022.

North Macedonia abroad and promotion of economic interests with the aim of advancing economic cooperation with other countries and attracting foreign investments, which is in line with in function of the Government's priorities aimed at dynamizing economic growth:¹¹

- activities that contribute to strengthening the country's position as a reliable business partner and destination
- presentation of the Republic of North Macedonia as an attractive destination for foreign investments through the promotion of the advantages of doing business
- activities to encourage the export of Macedonian products
- activities to promote the Republic of North Macedonia as an attractive tourist destination, with the aim of increasing the number of tourists visiting the country
- activities in the field of infrastructural and energy connection of the country at the regional and global level

The Ministry of Foreign Affairs carries out the affirmation of the economic interests of the country abroad through the Directorate for Economic and Public Diplomacy, in which it realizes cooperation with relevant ministries and agencies, with Macedonian diplomatic missions - embassies and consulates general, and with honorary consuls of the Northern Republic Macedonia abroad. At the same time, the Ministry of Foreign Affairs (MFA) continues with the practice of regular information and cooperation with Macedonian and foreign DCPs for the realization of important projects, initiatives and relevant information from the field of economy.

At the same time, the Ministry of Foreign Affairs, together with the Directorate for Economic and Public Diplomacy, in cooperation with the Ministry of Economy and other relevant Ministries, actively participates with its representatives in the work of the Joint Commissions for Economic Cooperation, with the aim of strengthening our bilateral economic relations with other countries.

Within the framework of efforts to attract foreign investments and offer benefits when investing in the country, a number of renowned foreign companies work, such as: Johnson Controls, Johnson Matthey, Kromberg & Schubert, Kemet corporation, Van Hool, Draxlmaier. What Macedonia offers to investors are qualified and cheap labor force, support from investors, low costs, one-stop shop system, tax benefits and subsidies, good infrastructure, etc.

The Directorate for Economic and Public Diplomacy¹² adopts annual plans and reports on the work; plans, organizes, coordinates and implements activities related to economic diplomacy, public diplomacy, international cooperation in culture, as well as questions about the situation and cooperation with the Macedonian diaspora; participates in the formulation and implementation of the determined foreign policy positions of the Republic of North Macedonia; ensures coordination and cooperates with competent institutions and authorities of the state; cooperates with the domestic chambers of commerce, associations and associations; monitors, analyzes and informs about the subjects of his competence; gives instructions and instructions to the representative offices and

¹¹ the same

¹² https://www.mfa.gov.mk/mk/page/441/ekonomiska_dimplatija, visited on August 10, 2022.

honorary consuls of the Republic of North Macedonia and monitors their work; cooperates with the accredited representative offices in the Republic of North Macedonia; manages and organizes the work of the departments and departments in its composition; develops and implements the program for the preparation of employees before referral to the representative offices; evaluates the work of organizational units and representative offices under his authority; performs other tasks within its scope.

The Department of Economic Diplomacy also prepares annual plans and reports on the work; performs and coordinates the activities and tasks related to the promotion and support of the economic interests of the Republic of North Macedonia abroad; participates in the preparation of economic strategies for the appearance of domestic companies in third markets and attracting foreign investments; monitors, analyzes and informs about the development of economic policies and proposes measures and attitudes for their advancement; participates in the training of economic promoters; participates in organizing expert debates, fair manifestations, economic gatherings and events to present the economic potential of the state; monitors, analyzes and informs about the economic development of the states and about international economic issues, as well as about development cooperation and humanitarian aid; ensures coordination and cooperates with the competent institutions and authorities of the state; cooperates with domestic chambers of commerce, associations and associations; prepares guidelines and instructions for the representative offices and honorary consuls of the Republic of North Macedonia and monitors their work; cooperates with the accredited representative offices in the Republic of North Macedonia; organizes and evaluates the work of the departments of its composition; performs other tasks within its scope. Within this Sector are the Department for promotion and support of the economic interests of the Republic of North Macedonia in European and non-European countries and the Department for international economic issues, development cooperation and humanitarian aid.¹³

5. PROMOTION OF THE CONCEPT OF ECONOMIC DIPLOMACY AND ECONOMIC PROMOTERS IN RSM

The new concept of economic diplomacy is based on a sustained, clear and precise strategy for economic relations with foreign countries. Export potentials, available labor force, facilities, land and other resources for foreign investments are offered. Based on these inputs, the content and geographical goals of economic diplomacy are defined. Economic profiled personnel, according to the Minister of Foreign Affairs Bujar Osmani, economic advisors are sent to those countries where there is a real potential for increasing economic cooperation. Countries with the greatest potential for investment, countries that are geographically close or have a pronounced economic-geographical interest, countries with potential for tourists.¹⁴

¹³ [www.mfa.gov.mk/mk/page/441/directory od economic diplomacy](http://www.mfa.gov.mk/mk/page/441/directory%20of%20economic%20diplomacy), visting 10.08.2022

¹⁴ [www.mfa.gov.mk/fr/page/27/post/2410/mnr – oosmani – go prezentira – noviot - concept - na – ekonomska – diplomatija](http://www.mfa.gov.mk/fr/page/27/post/2410/mnr-osmani-go-prezentira-noviot-concept-na-ekonomiska-diplomatija) , visting 10.08.2022

For greater success of the project, several European and several non-European countries with the greatest potential for cooperation have been targeted. And the economic advisers are chosen from among senior expert diplomats from the Ministry of Foreign Affairs, experts from the public administration with an economic portfolio and, if necessary, experts from the private and public sectors. All who are appointed, without exception, undergo extensive operational and professional theoretical training on the peculiarities and characteristics of our economy, the specifics of our market, the capacities of our economy and the possibilities of the tourism sector. The selection of personnel is carried out by the Interdepartmental Government Working Group

The presentation of the Republic of North Macedonia as an attractive destination for foreign investments is carried out through the promotion of the advantages for conducting business, the formation of a permanent widespread influential network, which serves as a powerful tool in the process of implementing our strategy for the promotion of the export of our products, the promotion of the country as an attractive tourist destination in order to increase the number of tourists who will visit the country and in general the promotion of the Republic of North Macedonia as an economic and political brand, which represents a part of modern society and an active contribution to the formation of the strategy for the efficient use of potentials.

CONCLUSION

The presence of the economic factor in these turbulent times when building international relations is inevitable. Therefore, the countries that base their own power on economic superiority as well as military supremacy, their foreign policy priorities are increasingly tied to the economic sphere, while realizing their interests through strong economic-diplomatic engagement. Modern countries are beginning to establish their own economic progress on the basis of capable, informed, educated and intuitive personnel, and at the same time possess a combination of diplomacy and diplomatic skills, economic knowledge, methods and techniques of negotiation, public relations, mechanisms and methods of economic espionage and collection of economic data will create prerequisites for quick, successful and firm positioning of one's own country on the international stage.

Economic diplomacy, in fact, represents the future of diplomacy and in the conditions of globalization, the world economy and politics have formed into a basic instrument for breaking into the world market, and therefore the function of economic diplomacy is primarily the protection of national interests in international economic relations. Diplomacy that is able to communicate with the consequences of economic globalization at all levels of the world system is called - geoeconomic diplomacy, which implies that defensive and offensive geoeconomic policy must and can be conducted by large and medium but also small countries that want to secure a more favorable position in the world order. The Republic of North Macedonia must further strengthen its economic diplomacy and use all the tools in the field of economic policy that are at its disposal.

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MICRO-ENTERPRISES IN BULGARIA – TOWARDS HIGH-
GROWTH ORIENTED DEVELOPMENT

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Abstract

Small business is rightly considered the backbone of national economies and its viability is crucial for the economic development. Micro-enterprises are the largest part of small business. They are extremely important both for job creation and for generating economic growth. Sustainable development and competitiveness of micro-enterprises are determined by their opportunities for rapid growth. The analysis of drivers for the development of micro high-growth enterprises (HGEs) is one of the underestimated and insufficiently researched problems in science and practice. Gaps are also present in the official statistics, which do not collect regular annual data on micro-enterprises. This paper consistently clarifies the essential characteristics of HGEs and analyses the share of micro-enterprises and their contribution to generating key economic results. The analysis is focused on the activities of micro-enterprises in Bulgaria, but a comparison is also being made with other European countries. The survey is based on secondary data from official statistics. The conclusions of the analysis can be useful for making policy adjustments to support the development of small businesses and micro-enterprises. It is advisable to fill the gaps in the collection of statistics on the degree of digitalization and the use of the high technologies, which are justified as key drivers for the success in the development of micro HGEs.

Keywords: High growth enterprises, micro enterprises, employment, economic growth

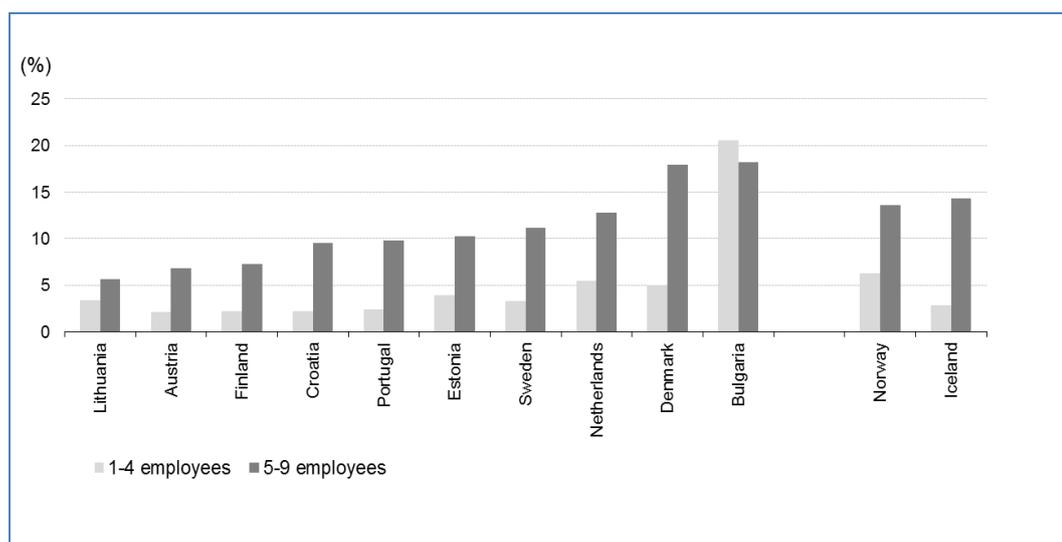
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1. Introduction

According to the definition generally accepted in the European economic area, micro-enterprises are those that meet two criteria, the first one being that the number of their employees should be less than 10 people and the second that their annual turnover, as well as the value of their assets, should not exceed 2 million euros². Micro-enterprises play a very important role in national economies in terms of sustainable development, economic growth and maintaining employment (Servon, 1997; Servon and Doshna, 2000; Chatterjee et al., 2018; Mustapa et al., 2018; Flachenecker et al., 2020). Given the important economic and social role that micro-enterprises play, in many countries and economic communities their activity is supported and encouraged by specialized government programs (Schreiner and Woller, 2003). Supporting micro-enterprises is particularly necessary in conditions of economic instability, as they are considered to be more vulnerable than other economic entities, as they usually do not have sufficient reserves and buffers to ensure their survival during crises. No uniform standards apply to the evaluation of the economic results and the overall economic impact of micro-enterprises. Thus Contreras (2022) concludes that when employment-based or income-based evaluation criteria are used, a change in the geographic aggregation unit leads to different and sometimes contradictory results.

In the business sphere of micro-enterprises, one group stands out from the rest with its growth rates. The definition of the term "high-growth enterprise" is debatable, since there are no uniform indicators and generally accepted standards. According to the criteria of the European Commission, the group of high-growth microenterprises (micro HGEs) includes those whose average annual growth of employment was over 10% in the last three years and which had fewer than 10 employees before expanding. Official statistics in the EU do not report data on micro HGEs, which significantly complicates analyzes and assessments. An experimental pilot project including data on a sample of 12 European countries (10 from the EU plus Iceland and Norway) attempts to reveal the specific characteristics of micro HGEs by analyzing various parameters and indicators of their activity (Eurostat Statistics Explained, 2020). Data on the relative share of micro HGEs in 2017 show that there are significant differences regarding the group of smaller micro-enterprises with up to 4 employees and the second group of enterprises with between 5 and 9 employees. In general, the proportion of micro HGEs is higher in the second group. The data for the individual countries included in the sample show the highest values of this indicator in Bulgaria, Denmark and Norway, and the lowest in Lithuania, Austria and Finland (fig. 1).

² According to European Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (<https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=celex%3A32003H0361>)



Source: Eurostat, high-growth enterprises development project

Figure 1. Percentage of micro high-growth enterprises by size class in 2017 (%)

For about 70% of the micro HGEs the preferred legal form of business organization is limited liability company (Eurostat Statistics Explained, 2020). This fact is not surprising given the advantages of this legal form over sole proprietorships or partnerships: the limited liability, the opportunities to attract financing and qualified employees. Along with the legal form, the degree of (in)dependence of micro-enterprises is also important for growth opportunities. It is determined by the enterprise's affiliation to a business group of companies. In this regard, independent enterprises have the advantage of making independent management decisions. At the same time, enterprises that are part of a business group have more opportunities for access to financing, hiring qualified personnel, larger budgets for marketing, advertising, innovation, technology, etc.

2. Analysis of the activity of micro-enterprises in Bulgaria

The analysis of the basic characteristics of the micro-enterprises in Bulgaria and the possibilities for sustainable growth requires first of all clarification of their place and role in the economic development of the country. For the purposes of the analysis of the key parameters of their economic activity, secondary data from the National Statistical Institute for the period 2018-2020 were used. As can be seen from the data presented in Table 1, during the studied period the share of micro-enterprises in Bulgaria compared to the total number of enterprises is over 90 %, i.e. 9 out of every 10 enterprises, and the trend over the three years is towards a slight increase from 92.6% to 93.1%. It can be noted that they are not only the most widespread enterprises, but are also more stable in terms of maintaining their number and share compared to the others. This conclusion is based on data for 2020, which was marked by the paralysis of the global economy due to the covid crisis. During the crisis year 2020, a decrease in

their total number was observed in all groups of enterprises (Table 1). Only in the case of micro-enterprises, their total number remains at the levels of 2018.

Table 1. Number of non-financial enterprises by size in terms of employees

Years	Up to 9		10-49		50-249		250+		Total
	Number	%	Number	%	Number	%	Number	%	
2018	383134	92.6%	24982	6.0%	4666	1.1%	753	0.2%	413535
2019	388980	92.7%	25204	6.0%	4738	1.1%	759	0.2%	419681
2020	383013	93.1%	23489	5.7%	4344	1.1%	718	0.2%	411564

Source: Statistical Yearbook 2020 and 2021

The greatest numbers of people are employed in micro-enterprises compared to the other groups of enterprises presented in table 2. In 2020, they numbered 664.7 thousand people and the average number of persons employed in one micro-enterprise was 1.74. This result testifies that self-employed persons prevail in a relatively large part of enterprises. However, micro-enterprises employ 32% of all employed persons or approximately one in three employed persons in the country. This testifies to the important role and importance of micro-enterprises for the employment of the workforce. From the data presented, it can be seen that with the onset of the covid crisis in 2020, a general decline in employment was observed in all researched groups of enterprises. This undoubtedly has a negative impact on micro-enterprises as well, where a drop of 3.9% was recorded, but this is still the lowest recorded value compared to other groups of small businesses.

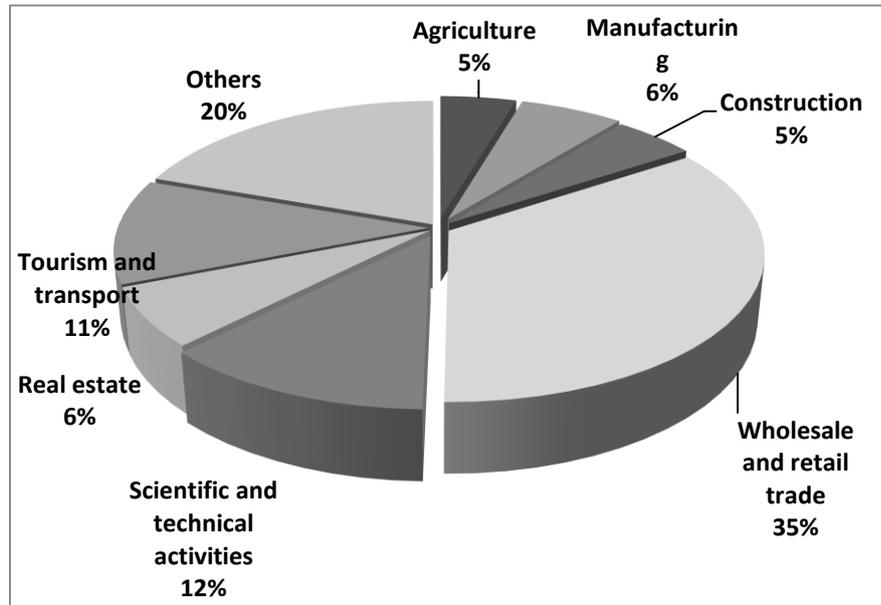
Table 2. Employed in non-financial enterprises by size of enterprises

Years	Up to 9		10-49		50-249		250+		Total
	Number	%	Number	%	Number	%	Number	%	
2018	688425	31.2%	495224	22.4%	463688	21.0%	561095	25.4%	2208432
2019	691496	31.3%	494071	22.4%	467303	21.1%	557618	25.2%	2210488
2020	664665	31.8%	462195	22.1%	428032	20.5%	536182	25.6%	2091074

Source: Statistical Yearbook 2020 and 2021

The next step of the analysis traces the distribution of micro-enterprises by economic activity. Enterprises in "Wholesale and retail trade" and "Scientific and technical activities" (fig. 2) in 2020 have the largest share in terms of numbers, and together make up nearly half of all micro-enterprises. The relatively low share

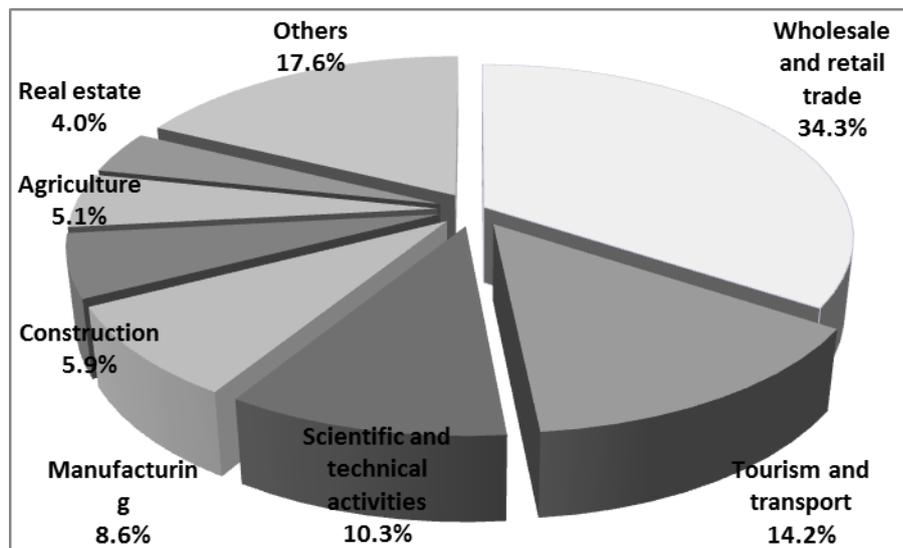
of micro-enterprises employed in the field of material production and "Agriculture" is noteworthy. It can be pointed out that in the areas of "Real estate" and "Scientific and technical activities", micro-enterprises make up 98%, and in "Wholesale and retail trade" - 95% of all enterprises in these economic activities.



Source: Own calculations based on data from Statistical Yearbook 2021

Figure 2. Distribution of micro-enterprises by economic activities in 2020 (%)

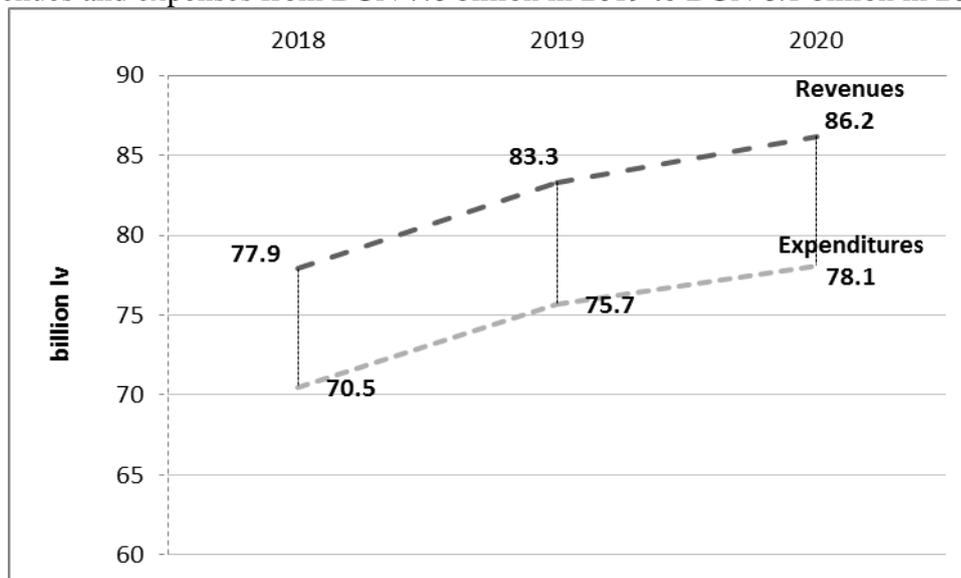
Regarding the percentage distribution of the number of employed persons in micro-enterprises by economic activities (fig. 3), similar values to those in the previous figure can be observed. The leading place is once again occupied by "Wholesale and retail trade", but the second largest number of employees is in the "Tourism and transport" sector. This actually means that in the spheres with increased values compared to the previous graph, such as "Tourism and transport", more employees are employed in one enterprise, and in others with lower values, such as "Scientific and technical activities", a smaller number are employed. In this regard, the smallest average number of employees in one enterprise is in the "Real estate" area, only 1.06, and the greatest number are employed in "Manufacturing" – 2,38.



Source: Own calculations based on data from Statistical Yearbook 2021

Figure 3. Distribution of the number of employed persons in micro-enterprises by economic activities in 2020 (%)

The Covid crisis has a negative impact on the economic activity of economic entities, as a result of which a 2.5% decrease in the total revenues of non-financial enterprises in Bulgaria was recorded in 2020. Big companies are the hardest hit, losing 6.2% of their annual revenue in 2020 compared to the previous year. Against this background, despite the severe economic consequences of the pandemic, the income of micro-enterprises continues to grow and in 2020 they recorded an annual growth of 3.5% compared to the previous year. These data show that micro-enterprises prove to be more resilient and flexible in times of crisis. Moreover, as can be seen from fig. 4 they managed not only to preserve, but even to slightly increase the positive difference between the sum of annual revenues and expenses from BGN 7.6 billion in 2019 to BGN 8.1 billion in 2020.



Source: Own calculations based on data from Statistical Yearbook 2021

Figure 4. Revenues and expenditures of micro-enterprises (2018-2020)

As noted above, the definition of a micro-enterprise as a high-growth business is a debatable issue for which no uniform indicators and standards have been adopted. Official statistics provide data on the average annual income and expenditure of micro-enterprises by economic activities. From the analysis of this data, indicators of profitability of income can be calculated, as well as profitability of income per employed person (Tables 3 and 4).

Table 3. Average revenues, costs and profitability of an enterprise by economic activities in 2020
(in thousand BGN)

	Number of enterprises	Revenue	Average annual revenues of a micro-enterprise	Expenditures	Average annual costs of a micro-enterprise	Profitability of revenue
Agriculture	17494	4179838	238.9	3598047	205.7	13.9%
Manufacturing	23881	3452980	144.6	3121618	130.7	9.6%
Construction	18841	9118704	484.0	8453114	448.7	7.3%
Wholesale and retail trade	132377	42412013	320.4	40108984	303.0	5.4%
Scientific and technical activities	46469	5461889	117.5	4077322	87.7	25.3%
Real estate	25032	4734057	189.1	4448305	177.7	6.0%
Tourism and transport	44077	6653520	151.0	6191586	140.5	6.9%
Information and communications	14358	3515228	244.8	2558957	178.2	27.2%

Source: Own calculations based on data from Statistical Yearbook 2021

Although these indicators cannot provide a complete picture, their values can be used to determine the areas in which micro-enterprises register the highest revenue growth and the highest profitability of the activity.

Table 4. Average income and expenditure per employed person by economic activities in 2020
(in thousand BGN)

	Revenue	Expenditures	Number of employees	Revenue per employee	Expenditures per employee	Profitability of revenue per employee
Agriculture	4179838	3598047	33787	123.711	106.492	13.9%
Manufacturing	3452980	3121618	56953	60.629	54.810	9.6%
Construction	9118704	8453114	39169	232.804	215.811	7.3%
Wholesale and retail trade	42412013	40108984	227840	186.148	176.040	5.4%
Scientific and technical activities	5461889	4077322	68750	79.446	59.307	25.3%
Real estate	4734057	4448305	26643	177.685	166.960	6.0%
Tourism and transport	6653520	6191586	94295	70.561	65.662	6.9%
Information and communications	3515228	2558957	23092	288.131	268.127	6.9%

Source: Own calculations based on data from Statistical Yearbook 2021

The average value of the indicator "Revenue profitability" in the activity of micro-enterprises in 2020 was 9.4%. From the data presented in Table 3, it is hardly surprising that the leaders in this indicator are the technological spheres with values far above the average: "Information and communications" (27.2%) and "Scientific and technical activities" (25.3%). One positive fact is that there are no activities and spheres with negative values. The values of the indicators "Average income and expenses per one employed person" show that the highest incomes are realized by one person employed in the field of "Construction" (Table 4). However, the highest costs per employed person are also in the same area. The technological spheres again boast the highest efficiency of revenues against expenses.

3. Conclusion

Microenterprises play an important role in economic development, as they are the most numerous, with a high relative share of employed persons and good opportunities for generating economic growth. The analysis of the activity of micro-enterprises in Bulgaria shows that they occupy a central place in terms of the number of business entities in the country's economy. In economic activities

such as "Real estate", "Scientific and technical activities" and "Wholesale and retail trade", the relative share of the number of micro-enterprises is over 95%. They provide employment for nearly 1/3 of the employed persons in the business. In different spheres of activity, the possibilities of micro-enterprises to develop at a rapid pace vary depending on the profitability of their income. The highest results of the profitability indicators are registered in the technological spheres of activity. In accordance with this result, it is necessary to conclude that digitalization and technological renewal are the key drivers for the success in the development of micro-enterprises. The results of the present study can be useful for making corrections in the policy to support the development of small businesses and micro-enterprises. It is also recommended to fill the gaps in the collection and processing of statistical data on the activity of micro-enterprises, the degree of digitization and the use of new technologies.

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APPLICATION OF INFORMATION AND
COMMUNICATION TECHNOLOGIES BY SMALL
ENTERPRISES - PRACTICES AND PERSPECTIVES

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Abstract

The paper presents the benefits of existing practices for the application of information and communication technologies by small businesses in Bulgaria. The work includes analysis of official statistics and prospects for the use of new technologies in the future. Emphasis is placed on the wide range of opportunities for investments in various functional areas of business management in small enterprises. It also outlines the precedence for investing in digitalization and its importance for the development of new and existing markets.

Keywords: information and communication technologies, digitalization, automation

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1. Introduction

The interest in using new technologies by businesses and consumers has been growing over the last few years. For enterprises, the interest in implementing innovation is explained by the demand for new markets and customers, improving access to products and services, increasing the efficiency of operations and overcoming the dependence on the human factor in customer service and decision-making. Increased consumer interest in the use of new technologies is driven by changes in the environment and restrictions in the context of the Covid pandemic, improvements in the functionality of electronic devices and applications, and reaping of the concrete benefits of their use in everyday life. Companies increasingly rely on new technologies to attract and retain users.

In recent years, funding has been made available to small enterprises for activities aimed at improving the quality of existing processes, products and services through the introduction of ICT-based systems and applications (for example, funding for the period 2014-2020 „Digitalization of small and medium-sized enterprises“ under Priority axis 2 „Entrepreneurship and Capacity for growth of SMEs“). Funding for their digitalization contributed to the introduction of ICT systems and applications to automate production processes, improvement of product/service quality and business process management. Small businesses pay special attention to new technologies that enable customization and adaptation of products/services to customer needs (customization of offers). A significant part of the investment in digitalization is related to the establishment and improvement of Enterprise Resource Planning systems (ERP), Customer Relationship Management systems (CRM), Supply Chain Management systems (SCM), Manufacturing Operations Management systems (MOM), Business Intelligence systems (BI) and other types of information and communication technology based systems and applications. In recent years, there has been a growing interest among small businesses in creating and upgrading websites, mobile apps and other electronic platforms. A significant part of the investments in digitalization are related to the addition of functionalities to existing solutions: development of an electronic catalogue, online ordering modules, additional e-channels for communication with customers and improved access for tracking orders, provision of electronic payments and systems and applications to ensure enterprise security, including the protection of personal data and sensitive company information.

According to the ranking of Digital Economy and Society Index (DESI) (DESI, 2022) Bulgaria ranks 26th out of the 27 EU member states. Despite Bulgaria's growth in recent years, results in this area are extremely unsatisfactory compared to the progress of other member states.

The high number of small enterprises (about 22,930 with 10 – 49 persons employed in 2022) and the high number of persons employed in them (employed 460,883 people) according to STATISTA data for 2022 make them particularly important for determining the business structure both for the country and individual regions. According to STATISTA data for 2022, the number of persons employed in small enterprises in Bulgaria exceeds the number of persons employed in medium enterprises.

2. Benefits and advantages of using new technologies

The benefits and advantages of the use of new information and communication technologies by small enterprises have been the focus of research by various authors over the last decade. These can be classified into several groups - relating to markets and consumers, speed of business processes, efficiency of operations and overcoming the subjective element in decision-making. It is now acknowledged that digital technologies can help smaller companies achieve ‘big company benefits’ online (CE, 2020). Specific policies and incentive instruments for SMEs are presented relating to the possibility of entering new markets (OECD, 2004). Special attention is paid to Covid-19 and its impact on market access (UNCTAD, 2022).

Table 1. Benefits and advantages of the use of new technologies by small enterprises

Groups	Benefits and advantages
Relating to markets and consumers. Access to new markets (OECD, 2000).	Improve the access to markets and adequately reaching potential consumers; Provide 24-hour access to products and services via e-commerce platforms; Provide 24-hour feedback to users; Provide 24-hour updates from the company to users and information on orders, sales etc.
Access to new knowledge (OECD, 2000)	Innovative firms invest in global competitiveness and extend their benefits through access to new knowledge.
Speed of business processes	Accelerate business processes and set service standards which correspond to the capabilities of the technologies used. Speed and rapid iteration are defined as „game changers“ (KPMG, 2016).
Increase efficiency and reduce transaction costs (OECD, 2014)	New technologies positively impact the efficiency of individual activities and overall effectiveness by creating conditions for adequate capacity management and resource allocation.
Overcome the subjective element	New technologies provide the conditions for greater control over employees, which reduces the chance of making decisions to the detriment of the company. Process automation, where possible, is also a prerequisite for the partial or total elimination of the human factor.

According to Nikoloski (2012) “the combination of process improvements, cost reductions, communications and quality assurance all contribute to the competitive advantage of a business unit”, which can be seen as a prerequisite for improving the business performance of small enterprises.

Research show that innovation firms have been perceived as key factors for expanding national (and local/regional) wealth and competitiveness (Ciobanu, O. & Neamtu, D., 2017).

Despite the widely communicated benefits and advantages of the use of new technologies by small enterprises in developed countries, official statistical surveys for Bulgaria show that they lag considerably behind medium and large enterprises in the country.

3. New information and communication technologies among small enterprises in the Republic of Bulgaria

According to data of the National Statistical Institute (NSI), the relative share of small enterprises in Bulgaria with internet access in 2021 is 95.4%. Proportion of employees in small enterprises who have access to the internet in 2021 is 38%. The relative share of employees using handheld devices with a mobile internet connection among small businesses is 18.2%.

Data for 2021 show that only 47% of small businesses in the country have a website as shown under the ‘total’ value for all enterprises (Table 2).

Table 2. Businesses that have a website in 2021 (%)

Total	51.9
By size of enterprises	
10 - 49 persons employed	47.0
50 - 249 persons employed	73.0
250 and more persons employed	87.7

Source: <https://nsi.bg>

According to official information from NSI, 36.3% of small enterprises in Bulgaria use social media in their business. Again, their percentage is lower than the total percentage for all enterprises (Table 3).

Table 3. Businesses that use social media (%)

Total	38.9
By size of enterprises	
10 - 49 persons employed	36.3
50 - 249 persons employed	49.0
250 and more persons employed	63.3

Source: <https://nsi.bg>

Even lower is the proportion of small businesses using paid cloud computing services – 10% in 2021 (Table 4).

Table 4. Businesses that use paid cloud computing services (%) in 2021

Total	12.8
By size of enterprises	

10 - 49 persons employed	10.0
50 - 249 persons employed	22.6
250 and more persons employed	44.6

Source: <https://nsi.bg>

The official data from NSI shows that the relative share of small businesses carrying out 'big data' analysis is only 5% in 2020 (Table 5).

Table 5. Businesses that carry out 'big data' analysis (%) in 2020

Total	6.3
By size of enterprises	
10 - 49 persons employed	5.0
50 - 249 persons employed	10.7
250 and more persons employed	21.4

Note: Data refers to the calendar year before the survey

Source: <https://nsi.bg>

Also noteworthy is the low relative share of small businesses selling goods and services online, which is 10.7% in 2020 (table 6). The differences are significant if we make a comparison with medium and large enterprises, which is evident from the data in Table 6.

Table 6. Businesses that sell goods and services on the Internet (%)

Total	11.8
By size of enterprises	
10 - 49 persons employed	10.7
50 - 249 persons employed	15.8
250 and more persons employed	23.3

Note: Data refers to the calendar year before the survey

Source: <https://nsi.bg>

The share of small enterprises that use enterprise resource planning software is clearly lower – 17.1% in 2021 (table 7). However, again, there are significant differences compared to medium and large enterprises where the values are much higher.

Table 7. Businesses that use enterprise resource planning (ERP) systems in 2021 (%)

Total	21.8
By size of enterprises	
10 - 49 persons employed	17.1
50 - 249 persons employed	40.1
250 and more persons employed	65.2

Source: <https://nsi.bg>

The proportion of small enterprises that use customer relationship management (CRM) software in 2021 is 14.3%, which is a low percent compared with that of medium and large enterprises (Table 8).

Table 8. Businesses that use customer relationship management (CRM) software (%) in 2021

Total	16.9
By size of enterprises	
10 - 49 persons employed	14.3
50 - 249 persons employed	27.9
250 and more persons employed	34.8

Source: <https://nsi.bg>

Although a limited part of small enterprises in Bulgaria work with electronic invoices suitable for automated processing (8.9% in 2020).

Table 9. Businesses that send e-invoices suitable for automated processing (%) in 2020

Total	10.0
By size of enterprises	
10 - 49 persons employed	8.9
50 - 249 persons employed	13.8
250 and more persons employed	24.2

Note: Data refers to the calendar year before the survey

Source: <https://nsi.bg>

Despite the favorable trend in the interest in the use of new technologies in the business of small enterprises in Bulgaria in recent years, their penetration is still not at a satisfactory level compared to the EU average.

4. Prospects for small enterprises in the use of new technologies, digitalization and automation

The drivers that have contributed to the uptake of new technologies among small businesses will continue to influence the growth in investment in innovation. One of the main drivers is the affordability of new technologies for businesses and households, both in terms of value and barriers to use. The second driver with continued motivating influence is the Covid restrictions, which have significantly impacted business models and consumer behavior. The third driver is funding opportunities for the deployment of new information and communication technologies by SMEs. All of the above will continue to drive investment in and upgrading of new technologies in the next decade.

Small businesses are expected to continue to invest in automating core functions. One area of particular interest will be marketing automation. Small businesses will be increasingly willing to abandon traditional marketing practices and move towards digital marketing in all its strands - communications,

distribution, pricing and R&D. The need for marketing automation is becoming obvious in the context of capacity mismatches in small businesses. Recently, more and more companies are registering an inconsistency between production and distribution capacity. Particular attention is being paid to these inconsistencies in the tourism, catering, transport and leisure businesses.

The threat of a growing Covid pandemic and the imposition of restrictions on businesses will continue to be a driver for high-tech investment. Investment in new channels of communication and distribution for small businesses will continue to grow over the next decade. The development of dedicated business applications to support consumers will be a priority that will position itself at the forefront. While large enterprises use or adapt off-the-shelf solutions, small enterprises rely on the development of special solutions that are tailored to the specific product/service and customers.

There are few problems related to the use of new technologies by small enterprises. Some of them are related to management and the assessment of the need for technological change, others are related to infrastructure, access to finance and market uncertainty. Employees themselves may be cautious about adopting new technologies with the expectation that workers may be displaced from their jobs.

Among the main problems facing small enterprises in relation to innovation and technological development are: lack of innovative infrastructure, insufficient professional skills and competencies among managers and employees, insufficient human resources engaged in R&D, rising average age of R&D staff and lack of funding for innovations (European Commission, 2020).

Another problem to explain the limited progress made with digital transformation is uneven adoption by businesses and households (ECLAC, 2022). There is a “long tail of digital laggards, consisting mainly of micro-, small and medium-sized enterprises and businesses in traditional and vulnerable activities, all of which are generally associated with lower productivity and greater informality” (ECLAC, 2022). The issue of digital security and data protection of small enterprises is also brought up (ILO, 2021).

5. Conclusion

EU and national government policy on the development of SMEs in the coming years will determine the investments they will make in high technology. The provision of funding through targeted programmes will continue to have a beneficial effect on the digitalization of small businesses and will lead to their increased online presence not only as communications but also as an opportunity to generate sales and other revenues arising from their involvement in digital business models.

The noted faltering in the use of new technologies by small enterprises in Bulgaria compared to medium and large enterprises is a problem concerning not only the enterprises themselves, but also their customers and partners. In this regard, customer initiatives of small businesses and government institutions can give an impetus to the faster introduction of new information and communication technologies.

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PREVAILING LEADERSHIP STYLES AND GENDER
PERSPECTIVE IN THE MACEDONIAN RETAIL
INDUSTRY

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Abstract

Over the decades and today, leadership has proven to be a tool of great importance for successful running of organisations, improving overall processes, and accomplishing higher organisational goals.

The interest of this paper was to discover prevailing leadership style/s and investigate gender perspective in the leadership styles exercised in the retail industry in the Republic of North Macedonia, through a study done in one of the largest electrical appliances retail companies. The significance of the chosen topic comes from the fact that there are few studies done that focus on leadership styles in the Macedonian retail sector and broader. The data gathered may contribute towards improved employee performance, satisfaction, retention, and overall success of the companies in the retail industry, as one of the more significant sectors for the Macedonian economy.

In examining the leadership styles focus was given to the McGregor's X/Y Theory. The data was gathered by distributing anonymous questionnaire among the employees of the relevant retail company.

The results showed that Theory X and Theory Y are approximately equally preferred among the employees in the retail industry, with a slightly higher prevalence of Theory Y. Secondly, the research discovered that gender does not influence the leadership style in the Macedonian retail industry, i.e. women and men preferred both Theory X and Theory Y equally. This result is in contradiction to the current industry trends and theory where women favour mentoring and coaching roles - Theory Y, while men dictate and command position - Theory X (Merchant, 2012).

Keywords: Leadership, leadership styles, gender, X/Y Theory, North Macedonia, retail industry

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1. Introduction

In recent decades, leadership has undergone dramatic changes, primarily because of the globalisation of businesses and technological development. Organisations' investments in human capital contribute towards more creative and engaging working environment (Londar et al., 2020).

The topic of leadership is one of the most interesting and extensively researched topics. It has been in the centre of interest for hundreds of years, from the early Greek philosophers to today's management and leadership gurus (Bolden, 2004). There were hundreds attempts, by the scholars and practitioners, to define and unify a definition of leadership, but they have failed to agree on a single definition as well as the precise nature of this phenomenon (Rost, 1993).

Given the global and changing business environment, it is the leadership that, on many occasions, is considered a factor for success both among organisations and individuals as well as across sectors, regions and nations (Bolden, 2004). In this perspective, the number of existing definitions of leadership is almost equivalent to persons who attempt to define the concept of leadership. Northouse (2012) concludes that 65 different classifications have evolved in the past 60 years with an aspiration to determine the leadership dimensions.

As a crucial instrument for success in all business areas and industries, leadership does not exclude the retail industry players.

Therefore, the interest of this paper is to discover prevailing leadership style/s and investigate gender perspective in the leadership styles exercised in the retail industry in the Republic of North Macedonia. In order to perform critical examination of the preferred style of leadership the paper focuses on the following specific action objectives:

- Provide a critical assessment of the relevant academic literature on leadership, leadership styles, and gender perspective.
- Construct a valid methodological approach based on previous research of the X/Y Theory.
- Administer the research instrument among employees in the Macedonian retail sector company that identifies X/Y Theory leadership preferences, and gender perspective.
- Provide recommendations for organisations and researchers regarding preferred leadership styles in the retail sector.

2. Literature Review

2.1 Leadership Styles

In practice, organisations strive to choose the right leadership style toward enhancing organisation's performance. The literature and research on the topic of leadership styles show great differences between leadership styles and practices. Still, they are united in the statement that ineffective leadership practices lead to followers' negative performance (Amabile et al., 2004). Some of the styles

recognised by behavioural science and theorists are “autocratic style, democratic style, transformational style, authoritarian style, coaching style, consideration style, transactional style, responsible style, participative style, diplomatic style, servant style, ethical style, situational leadership style, charismatic style, achievement-oriented style,” etc. (Hussain and Hassan, 2016, p. 414).

In further discussion, significant characteristics, similarities, and practise of some of the above-listed leadership styles will be presented.

As the traditional concept of what represents one leader is a figure standing in front of the group or team, giving directions, Randall and Coakley (2007) argue that adaptive leadership allows the leader to be among the group and provide guidance within the group. Adaptive leadership is an inclusive approach to social strategy, responsiveness, and feedback (Randall and Coakley, 2007). This view was followed by Jefferies (2017) where he discusses that leader is not born and permanent. On the contrary, a team member can be trained and adapted to become the new leader of the team (Jefferies, 2017).

Wright (2017) similarly indicates that utilising situational leadership on a global scale is possible and could easily apply to Asian cultures as well. According to Wright (2017), situational leadership is becoming increasingly popular in Western and international enterprises, as development of dialogic tools with open communication and mutual understanding are becoming a standard norm in the organisations worldwide.

Furthermore, Secka (2017) argues that the servant leadership model is characterised by a leadership-follower relationship, strengthening behaviour support, and objective settings. Patterson (2003) supplements and emphasises that morality and the follower's need are significant marks of the servant leadership style (Patterson, 2003).

Miska and Mendenhall (2018) argue how responsible leadership style distinguishes from other values-centred leadership styles like ethical leadership, authentic leadership, transformational leadership and servant leadership. Their standpoint of the differences is that the responsible leadership style tends to balance external conflicts of the stakeholders' interests toward internal tensions, leading coherently and consistently across multiple contexts.

As this research is focused on the McGregor Theory X and Theory Y, the paper shall discuss and compare the leadership styles that are emerging from the McGregor X/Y Theory. The management literature discusses the linkages between McGregor's Theory X versus transactional leadership style and Theory Y versus transformational leadership style.

- Theory X vs Transactional Leadership Style

McGregor's Theory X relates to direction, authority, and structure (Carson, 2005). This theory is led by the assumption that people are not ambitious, responsible and intrinsically do not like work on one hand, and prefer job security on the other hand. Transactional leadership style is perceived as a more traditional type of leadership (Bass and Avolio, 1994). Transactional leaders are viewed as influential and exchange-based (Burns, 1978). They build their relationship with the followers based on motivating the followers over their interest in personal gain and the benefits they will receive for the completed tasks (Jamaludin et al., 2011).

Transactional leaders control followers' behaviours and actions in performing their duties and avoiding severe problems (Judge and Piccolo, 2004).

- Theory Y vs Transformational Leadership Style

McGregor's Theory Y is tied to change, adaptation, mutuality, and commitment (Bobic, 2003). In line with Y assumption, people exercise self-direction and self-control in completing the duties to which they are committed (McGregor, 1960). The transformational leadership style exercises a motivational approach and is people-oriented (Bass, 1985; Bass and Avolio, 1994). Transformational leaders motivate and engage the follower by building a shared vision and goal for the organisation, challenging their followers' abilities, listening to their followers while accomplishing organisation goals (Bass, 1985; Bass and Avolio, 1994; Judge and Piccolo, 2004).

2.2 Gender Perspective and Leadership

A respectful number of scholars and practitioners noted below advocate that gender influences leadership choice, and that different personal characteristics between women and men are modelling the leadership style. The rest of the practitioners, some mentioned below, represent the standpoint where women and men leaders are similar and equally successful in performing as leaders.

According to Radu et al. (2017), gender can imply on the choice of a leadership style. Women usually favour a mentoring and coaching role, while men command and dictate oriented (Merchant, 2012)

Moreover, Merchant (2012) distinguishes different behaviours among women and men leaders who promote team success. For example, women use conversations to build and nurture relationships, while men perceive conversations as a tool to establish and sustain status and dominance. The value of the relational aspect is an attribute of women leaders compared to men (Boatwright and Forrest, 2000). Women leaders exert more expressive, tentative, and polite speech while men leaders exert less. Women and men leaders have distinct demands, goals, and values in leading teams (Merchant, 2012). For example, female workers tend to be more production-oriented than men, who are more oriented toward strategy building and organisational vision (Kabacoff, 1998). Women leaders have been found to possess characteristics of transformational leadership where women encourage an interactive working environment by fostering sharing information, enhancing people's self-worth and participation (Rosener, 1990). Several studies confirmed supplementary findings which associate transformational leadership style to women managers (Bass et al., 1996). Women leaders are also proven as better transactional motivators by providing positive rewards-based system, while men practice a negative system based on threats which is a stereotype of men and women leaders (Merchant, 2012).

On the other hand, according to the theoretical models of Thompson (2000), women and men leaders were equally recognised by their team members in terms of leadership characteristics and effectiveness (Thompson, 2000). Comparably, Bass et al. (1996) stated that there are not significant variations in

the transactional and transformational leadership styles among women and men perceived by their subordinates.

3. Method

This paper aims to determine the leadership style practices in the Macedonian retail sector. The research has been conducted in one of the largest retail companies, with highest market share in the Macedonian retail industry. The relevant company has demonstrated upward and sustainable development in the past decade.

To explore and determine the preferred style of leadership that prevails and is practised in the retail sector and brings positive operation results, the concept of X/Y Theory, formulated by Douglas McGregor, was applied.

X/Y Theory argues and describes the differentiated characteristics of the managers based on the X/Y Theory assumptions. Managers' assumptions led by the Theory X, support the style of leadership where the way of managing people is based on the presumption that the employees are lazy, tend to avoid work and responsibility, lack ambition and need to be directed and controlled. In contrast, the Theory Y assumption is supported by the managers who believe that people have self-control and self-direction, are willing to work, demonstrate responsibility, creativeness, and proactiveness in accomplishing the organisational goals.

3.1 Description of the Instrument

The entire questionnaire consisted of 49 items divided into several groups, 43 statements and 6 questions related to demographic data. For the purpose of this paper, only the first group of statements and part of the demographic data will be presented. The given statements in the questionnaire from 1-43 offer a choice to the respondent according to the Likert scale, such as 1-strongly disagree, 2-disagree, 3-neutral, 4- agree, and 5-strongly agree.

The group of statements (1-26) relevant for this paper, derive from the academic paper Construct Validation of a Theory X/Y Behaviour Scale by (Kopelman et al., 2010), and they are used to validate McGregor's X/Y Theory. 13 statements are related to Theory X, and other 13 statements are related to Theory Y.

From the questions related to demographic data of the respondents within the company, such as gender, age, education, time in the company, the management level of the position and department, only gender related are relevant for this paper.

3.2 Research Questions and Hypothesis

The following research questions were formulated

1. What is the preferred leadership style in the retail industry according to the McGregor's X/Y Theory?
2. Which are the preferred leadership styles for men vs. women?

In view of this, the following hypothesis are tested:

H₁₀: Employees prefer Y leadership style in the retail industry.

H_{0a}: Employees prefer X leadership style in the retail industry.

H₂₀: Gender influence the prevalence of X or Y leadership style in the retail industry.

H_{0b}: Gender has no influence on the prevalence of X or Y leadership style in the retail industry.

3.3 Data Collection Process

As previously described, this research was conducted in the largest retail company for electrical appliances in the Republic of North Macedonia. The anonymous questionnaire was distributed among the employees within the company through the Human Resources Department, with prior approval by the management. The employees included in the survey were informed of the scientific and research purposes of the study and the anonymous character of the questionnaire. Distribution of the questionnaire was in hard copy to 184 employees, in the head office and branches in Skopje and branches around the Republic of North Macedonia. Responses from 184 respondents were received.

4. Data Analysis

The collected data from the questionnaire were inputted and processed both in Excel and R Project for Statistical Computing version 4.0 ("R: The R Project for Statistical Computing," n.d.). As explained previously Likert scale was used for the statements, with a descriptive meaning such as 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree. The descriptive mark was used in processing each statement separately. Prior the analysis, the odd statements from the first construct, i.e., statements 1-26 were reverse coded. The reverse coding was conducted as follows: 1 become 5, 2 become 4, 4 become 2 and 5 become 1. After the data was recorded in Excel, it was inputted in R Project for Statistical Computing for further statistical processing to examine the given hypothesis of this study. Statistical evaluation of the data was performed using a linear model and Levene Test. More specifically, ggpubr library was used for making the QQ plots and normality test of the dependent variable (X_Y), the library 'car' for homogeneity test (variance of the dependent variable among the two genders) and the lm library for the univariate linear model. Descriptive statistics were used to characterise vital demographic variables of the study population. All assumptions were checked and verified before statistical analysis by analysing the dependent variable's normality and the independent variable's variance. Results were considered significant for p-values ≤ 0.05 .

5. Results

5.1 Demographic profile of the population in the electrical appliances retail company

Demographic data shows that the gender prevalent in the research are males. Male respondents participate with (74%, $n=136$), and most of them are from the age group younger than 20 years (47%, $n=87$) and with an associate-level of education (36%, $n=66$). Most of the respondents have work experience in the company between 1-3 years (46%, $n=85$) and most of the respondents belong to the sales department (60%, $n=111$).

5.2 Theory X/Y analysis in the electrical appliances retail company

Different questions/statements were posed in order to test McGregor's X/Y Theory and discover if gender has any influence in the leadership styles in the Macedonian retail industry. Several of the most significant ones shall be discussed below.

In Figure 1, most respondents (53%, $n=96$) agreed with the statement, "Most people will try to do as little work as possible". While (36%, $n=65$) disagreed and (10%, $n=19$) were neutral. Among the females (15%, $n=27$) agreed, (10%, $n=17$) disagreed and (2%, $n=4$) were neutral. While among the males, (38%, $n=69$) agreed, (26%, $n=48$) disagreed and (8%, $n=15$) were neutral.

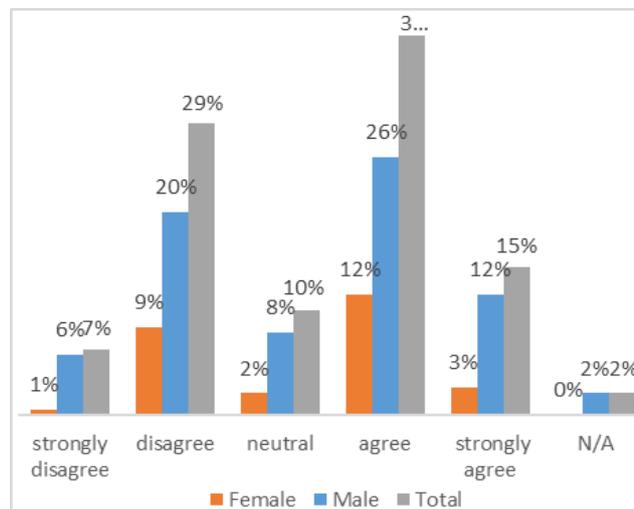


Figure 1: Most people will try to do as little work as possible.

Most of the respondents (56%, $n=103$) reported disagreement with the statement, "Most people will not have their own initiative or do things that they have not been specifically assigned to do", as shown in Figure 2. Lower percentage of the respondent's express agreement with the statement (35%, $n=64$) and (9%, $n=16$) express neutral. Among the respondents that expressed disagreement (14%, $n=26$) were females and (42%, $n=77$) were males. Among the respondents that expressed agreement (10%, $n=18$) were females and (25%, $n=46$) were males.

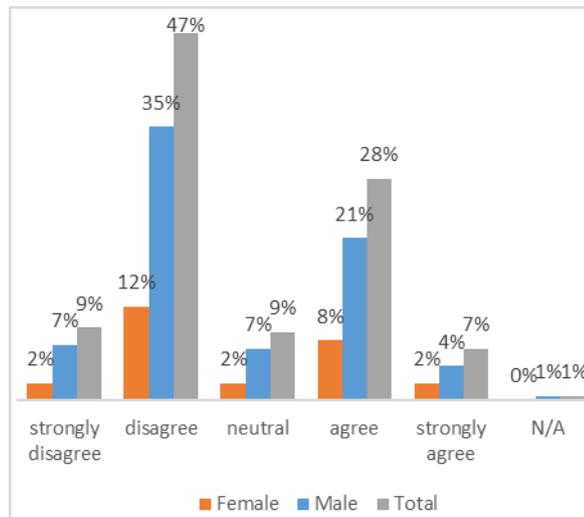


Figure 2: Most people will not have their own initiative or do things that they have not been specifically assigned to do.

The level of ambition is presented in Figure 3. Most of the respondents reported agreement (51%, $n=93$) with the statement, "*Most employees have little ambition*". While (31%, $n=56$) reported disagreement. (19%, $n=35$) from the respondents reported neutral. The females (16%, $n=29$) reported agreement and among males (34%, $n=64$). Disagreement among females was reported (8%, $n=14$) and males (23%, $n=42$).

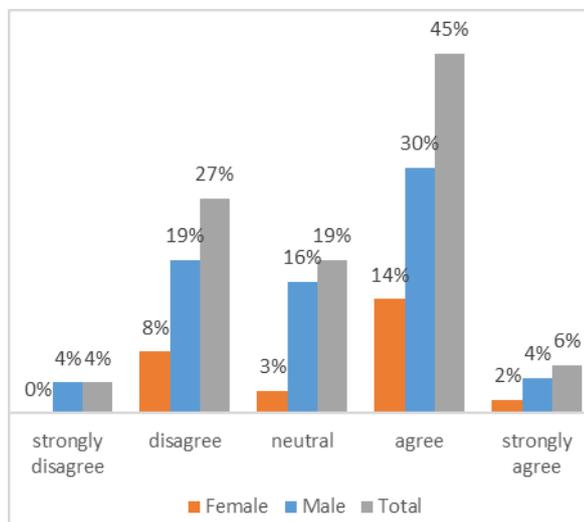


Figure 3: Most employees have little ambition.

Figure 4 presents a higher level of agreement (60%, $n=111$) with the statement "*Most employees will not exercise self-control and self-motivation-managers must do this for them*" and a lower level of disagreement (25%, $n=46$). In comparison, neutral were (15%, $n=27$). The female respondents (18%, $n=33$) reported agreement and male respondents (42%, $n=78$). The disagreement percentage distributed (6%, $n=11$) among females and (19%, $n=35$) among males.

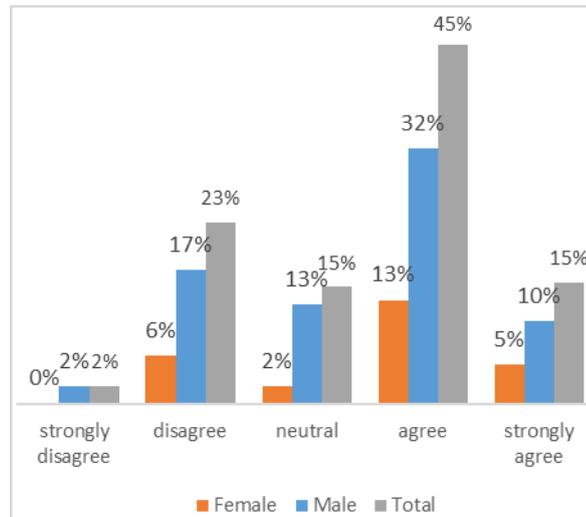


Figure 4: Most employees will not exercise self-control and self-motivation-managers must do this for them.

Most of the respondents (70%, $n=128$), as presented in the Figure 5, agreed with the statement " *Most people are lazy and do not want to work*", while (16%, $n=30$) of the respondents disagreed and (13%, $n=23$) reported neutral. Female respondents reported (20%, $n=36$) agreement, (3%, $n=5$) disagreement and (3%, $n=6$) neutral. Male respondents reported (50%, $n=92$) agreement, (14%, $n=25$) disagreement and (9%, $n=17$) neutral.

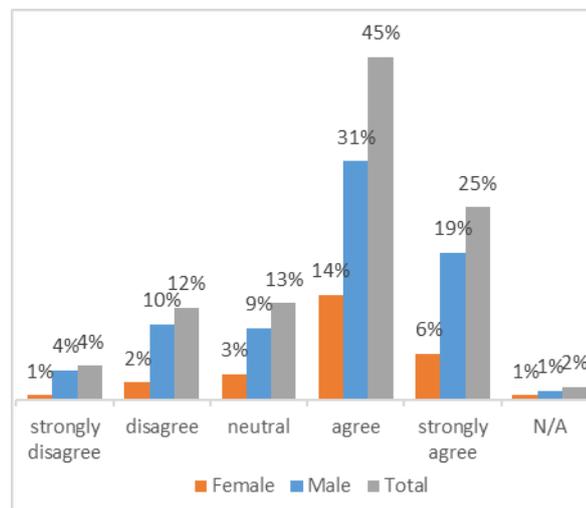


Figure 5: Most people are lazy and do not want to work.

5.3 Statistical Data Analysis

The relationship between Gender and X_Y Theory was evaluated using a linear model and the prerequisites for the linear model constructed in the R programming language version. 4.01. Before modelling, the dependent variables

X_Y were tested for normality. In addition, the homogeneity of variance between the independent variable (Gender) and the dependent variable (X_Y) was tested using the Levene Test. Due to incomplete answers, two participants were excluded from the analysis (ID 4 and ID114). Results were considered significant for p-values ≤ 0.05 .

In Figure 6, the results from the analysed data showed that employees in the electrical appliances retail company have no preferences of Theory Y over Theory X, Theory Y preceding with a minor difference. With this neither H_{10} , nor H_{0a} were accepted or rejected.

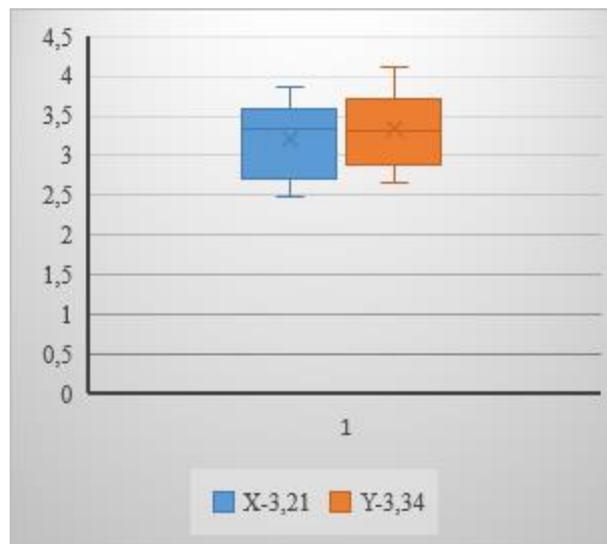


Figure 6: Preferences of Theory Y over Theory X among the employees in the electrical appliances retail company

Conducted Levine's Test (Figure 7) showed that there is no difference in the variance between two variables (X_Y Theory and Gender).

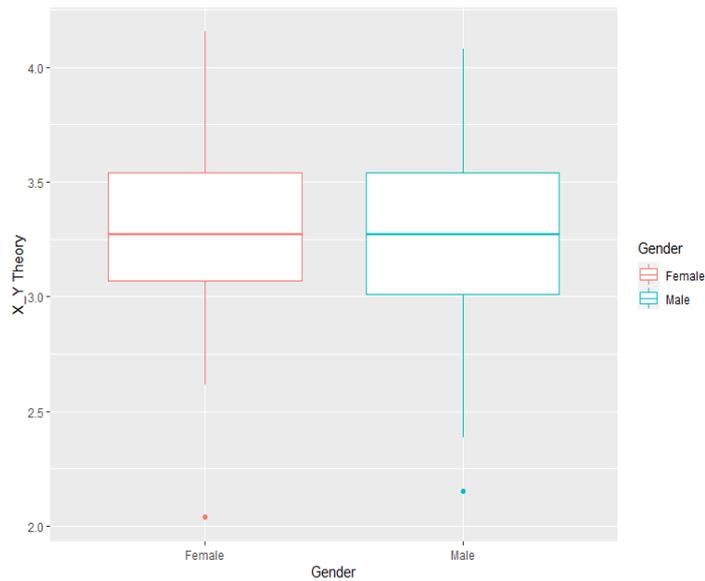


Figure 7: Levene's Test for homogeneity of variance between dependent X_Y Theory and independent variable Gender.

A linear model of X_Y as a function of Gender was conducted. This model was not significant ($F(1,180) < 0.01, p > 0.05$). F-statistic 0.001752 on 1 and 180 DF, p-value: 0.9667. The linear model revealed that gender has no influence on X_Y in the electrical appliances retail company. Therefore, H_{20} was rejected and H_{0b} was accepted.

5.4 Validation of Theory X/Y in the electrical appliances retail company

Theory X/Y, demonstrated in Figure 8 consists of two groups of statements. One group of odd-numbered statements represents the Theory X assumptions, and the other group of even-numbered statements represents the Theory Y assumptions in a total of 26 statements. From the analysed data, it can be concluded that employees in the electrical appliances retail company have almost equal perceptions and preferences over both Theory X (3.21) and Theory Y (3.34) leadership styles.



Figure 8: Theory X/Y – Average by statement

The research findings reflect the current trends in the theory and practice in the retail industry on a global level, where some of the practitioners support transformational leadership, closer to Theory Y, as more effective for consequently changing environments such as the retail industry (Bass, 1985; Love, 2019; Rijas, 2016). While other practitioners prefer transactional leadership style, which is closer to Theory X (Avolio et al., 2009; Brown, 2014;).

6. Recommendations

One suggestion arriving from this study is to focus the employees, which in many cases responded as neutral when asked different questions. This usually means that these employees do not have either enough knowledge or interest in the company. This in turn can have potential negative effect on the company, such as no loyalty, no motivation, etc. Consequently, it is recommendable to educate and inform these employees on the relevant topics, in order to get them engaged and motivated.

In line with the first recommendation, next suggestion is to create programs to show people that they are valued, important and have future career paths, contributing to higher engagement and increasing employee motivation. This, supported by the fact that the Z generation employees have different expectations from their employers compared to all other age groups.

7. Limitations

The limitation of this research is that it involves only one company, despite being the largest among the five present on the market. The retail sector is crucial to the economy of Republic of North Macedonia, thus a more comprehensive study, involving all the major players in the market, should be conducted to be able to generalise and suggest actions for its continuous improvements.

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IMPACT OF INFORMATION SYSTEMS ON
QUALITATIVE MANAGEMENT OF PROJECT CYCLE
PHASES

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Abstract

Information systems have become an integral part of every corporate organization, in facilitating decision-making, planning process and managing projects and the prospect of achieving organizational goals and objectives. Management is also becoming increasingly aware that information systems can be used to produce meaningful information on all stages of the project cycle and based on this information they can base their decisions, except for performing functions detailed work within the organization.

The enormous numbers of employees engaged in the insurance sector coupled with numerous customers made decision taking and dissemination of information by the management time consuming thereby leading to inefficiency and pose a risk for management failures.

To address this challenge, it is necessary to include information systems in the quality management of project cycle stages in order to facilitate decision-making and reduce the risk of project failure. This study uses field survey responses from senior management staff of seven different insurance companies to empirically examine the relationship of information systems as used by the management for decision-making, speed, availability of information and involvement of subordinates in decision-making.

Keywords: Information Technology, Information Systems, Insurance, Projects.

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1. Introduction

The use of projects and project management is constantly increasing in organizations. Businesses constantly use project management to achieve unique results within time and resource constraints. In the world today, there is a rapid increase in the number of businesses that use projects as a preferred way of fulfilling the goals they present.

Like any aspect of life, project management becomes more efficient with the use of information systems. In this aspect, different software and information systems are used. Therefore, the ways in which this software is applied and improves the project management process is the object of this study.

The project cycle accompanies the "life" of the project from the initial idea to its completion. It presents a structure that ensures that stakeholders are consulted, defines key decisions, information requirements, and responsibilities at each stage of the project, -so that decisions can be made during its implementation.

The management of the project cycle is a cycle that, as we will see, consists of four main phases of the project, these phases we will describe in detail the project selection phase, the planning phase, the project implementation phase with all tasks which include the last stage, which is the closure of the project.

In the beginning, we tried to bring some basic information and concepts regarding the meaning of projects and their management. Then we tried to make a connection between the information system and project management during all the phases of the project cycle, which is related to the topic "The influence of information systems on the quality management of the phases of the project cycle", so between them, I will I try to bring a material that clarifies the value of information systems in project management for company development, as a very important concept in understanding and evaluating investments and making decisions.

The purpose of this paper is to present the phases of the project cycle and the impact of the information system on project cycle management. The aim is to provide examples of how the phases of the project cycle can be managed better and more efficiently through the information system that works in organizations, the way they are applied, and their impact on the final result of the project.

In this paper, the following research questions are posed:

- What impact does the use of information systems have on the successful management of project cycle phases?
- In which phase of project management is the use of the information system more important in improving the quality of project management.

In response to these research questions, the following main hypotheses are raised:

H1: The use of information systems in project management affects the reduction of the failure rate of projects.

And the second hypothesis:

H2: The use of information systems makes it easier to monitor the use of resources and time management during the realization of projects.

2. Literature review

This part contains the analysis of the existing literature and studies on the notion and definition of the project, the procedure for the selection of the project and the selection criteria, and especially the use of the information system for the successful management of the phases of the project cycle.

The project in most cases can be described simply by presenting it as an answer to a need and a solution to a problem. Usually, the project represents a solution that enables profit, financial or otherwise.

The Project Management Institute has defined the project as: "A temporary effort undertaken to create a unique product or service" (PMI, 2004).

The most used definition for the project is: The project represents an activity in which the following are defined in advance: a clear and feasible goal, the finite duration of the project, the resources of the project (people, time, financial means) as well as the desired level of what is expected to be the final product (Beqiri, 2014).

The other term needs to be defined after the project is managed. The interconnectedness of projects and management is inseparable. You cannot implement a project without management and simply cannot achieve the expected results without good management of the activities and people who implement the project.

Management represents the totality of actions, planning, organization, the distribution of tasks and the orientation of people through relevant tasks, the definition of goals, and so on, which results in the achievement of predetermined objectives in the project through following the predetermined plan. So, management means the way, types of activities, and progress of work in different stages as well as the internal organization of people and their tasks (Llaci, 2015).

Project selection is the process of evaluating individual projects or a group of projects and then choosing to implement those that enable the achievement of the organization's objectives. This process can be applied to any business in which a choice must be made between competing alternatives. It is known that each project will have different costs, benefits, and risks. These are rarely known with certainty. Under these conditions, choosing a project is a difficult task. By choosing a number of different projects, the portfolio, - is even more complex (Pantariti, 2014).

A model is usually required by management to help make project selection decisions. The chosen model must possess the characteristics discussed previously and above all it must evaluate potential projects according to the degree to which they will meet the firm's objectives.

To build the evaluation/selection model it is necessary to build a list of the firm's objectives from top management. In addition to objectives for survival or maximizing profits, other objectives can be set such as maintaining market share, improving the image with specific customers or competitors, entering a new line

of business, maintaining employment for specific categories of workers, etc(Meredith *et al.*, 2008).

The three main phases that are recognized in the project selection process are⁶:

- Development of project proposals where the business case is initiated and the main parameters of the project are defined;
- Evaluation of project proposals, where cost/benefit analysis is performed and where projects are evaluated based on a series of special business criteria; AND
- Project selection, where agreement is reached on the feasibility and importance of the selected project compared to other project proposals, and the official decision is made on the selected project proposal.

3. Project development life cycle

Project Cycle Management (PCM) is a term used to describe the management activities and decision-making procedures applied during the life cycle of a project (including key tasks, roles and responsibilities, key documents, and decisions).

The project cycle contains a series of steps that must be taken to turn ideas into tangible results that can be shown to have solved the problem and contributed to the achievement of policy objectives and goals. The processes at each stage of the cycle are important in ensuring that the project is being managed effectively and is meeting its purpose. The six stages are:

- Initiation and Planning (initiative, initiation, and forethought)
- Analysis of project requirements
- Design
- Realization (implementation)
- Supervision (control) and
- Closing the project (Pataki, 2003).

4. Information systems in enterprises and use in project management

Businesses have been using information technology for many years in an effort to reduce their labor costs by automating many of their operations. Many businesses have used this technology to ensure that the right information goes to the right person so that employees can make better decisions. The most successful companies have found that their goal should be to use information technology to better serve their customers.

Using information technology to better serve customers will soon become the norm for grid-based economies as prices and profits continue to fall. Information Systems (IS) are systems that develop information, which managers and employees further combine with the knowledge to make decisions. So, we can say that such a system is simply the application of information technology in business. The development of the IT architecture of the enterprise has undergone major changes since its introduction. In the 60s we had the big centralized computing

machines. During the 90s, the computing architecture became more functional by connecting to computer telecommunication networks for the purpose of transmitting information (Ramaj, 2012).

In the new conditions, computers in enterprises are connected to a large number of other computers through computer networks, including the Internet. Today, computer systems have become integral, interactive remote tools enabling very fast and efficient decision-making operations (Berisha, 2004).

The computer system changes the way we work, how we communicate, and the way we do business. Therefore, the IT system and the enterprise have a mutual influence on each other. On the one hand, the computer system must provide necessary information for the various groups in the company, while the company on the other hand is interested in benefiting as much as possible from computer technology, knowing the importance and influence of computer systems on a successful business.

Information is what can make the difference in management and business. Information management is a growing feature of the information technology (IT) field. In short, this is a feature that helps companies acquire, process, and store useful information that they may come across. It also gives companies the necessary opportunities and tools to analyze the market and business performance. The particularly important function of computer systems lies in business and the automation of office business. Automation of office business (automated office) includes electronic mail, data exchange, time and activity planning, project management, document processing, graphics processing, data archiving, document search, preparation of decisions, preparation, and execution of business meetings.

The implemented system has a centralized database to keep all operational and existing data of Kosovo branches. The database is installed on a central database server and all users or employees will access a web server environment through the WEB, LAN, or WAN. This system and its component modules are fully integrated. All existing customer data, as well as new data, will be registered only once and will be used whenever necessary in the software (Laudonet *al.*, 2022).

The connection between the enterprise and the IT system is very complex. There is a large number of factors that influence the interaction between the enterprise and the IT system. Among these factors, we can mention the organizational structure of the enterprise, the business environment, business processes, and the managerial setting.

Therefore, within the organization, the IT system helps the process of information processing and data storage, facilitates the free movement of information inside and outside the company, enables quality control and management, and creates connections between parts of the company, external connections with partner's businessman, consumer, and supplier.

ICT-based computer systems improve human abilities to perform several jobs (Davis *et al.*, 2004):

- Increases the efficiency of managers through effective management,
- Business control and coordination,
- Making quality decisions, and

- Strategic planning based on information.

4.1. Types of information systems in enterprises

Each type of information system plays a certain role. If you look at functions and scope, information systems can be divided into six main categories, as we have presented below (Raineret *al.*, 2014).

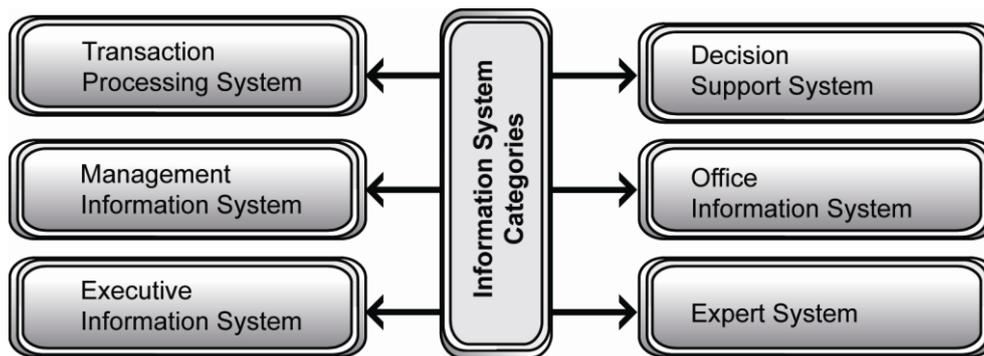


Figure 1. Categories of information systems (Raineret *al.*, 2014).

4.2. The role of the information system in the enterprise

With the development of business, the role of the IT system in the enterprise has become critical and IT technology has gained importance when it comes to the success and efficiency of the business, both in performing daily operations as well as in making strategic decisions (Freid, 1993).

The enterprise and its business are transforming very quickly as a result of the application of information technology and the digital economy (Freid, 1993).

Today, information systems directly affect how managers make decisions, how they plan, and in many cases how products are produced or services performed.

Thus, IT systems cannot be ignored by managers because it plays a strategic role in the life of the enterprise. They have become key tools that help managers understand changes in the environment, monitor, adapt, and influence the change in the environment themselves (Laudonet *al.*, 2022).

5. Project Management Information System (PMIS)

The evolution of competitive markets around the world has led to a conclusion that projects in a common business such as engineering, information technology, construction, etc. must be managed very professionally, in terms of planning, scheduling, organization, monitoring, and control (Liberatoreet *al.*,

2022). To achieve this, organizations must manage projects within the specified time, on budget, and with high performance while also managing project risk. Projects are most often used in information technology (IT), software development, business process reorganization, and research and development (R&D) (White *et al.*, 2022).

Project management is a process related to all project cycle activities such as planning, monitoring, controlling, and closing the project. It has been used for years as a discipline for planning; organizing, securing, and managing resources that helps an organization achieve its business results.

Work Breakdown Structure, Work Breakdown Structure (WBS), Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT), and Gantt Chart Chart) are technical solutions that help project managers in project planning, cost management, risk analysis, project control and monitoring. However, these techniques require high skills that can take time to build, as well as the need to restructure in step with technological and project advancement.

However, even Project Management Information Systems (PMIS) are the same as any other information system, which if not built properly can turn into "a monster of missed deadlines, spent budgets and defective products" (Brooks, 1986).

In today's insurance business, there is an increasing need for information. The need for information increases on a daily basis and thus becomes more complex in nature. And as the business continues and grows, management, staff, and other information users inside and outside the organization continue to depend on the demand for information to support management tasks and business projects. This required information must be accurate, timely, and useful for each stage of the life cycle that insurance industry projects go through.

In view of this, researchers have tried to decide what Information Systems are necessary and the important relationship between information systems and project cycle management in this industry. Management is also becoming increasingly aware that information systems can be used to produce meaningful information on all phases of the project cycle and on the basis of this information they can base their decisions in addition to performing functions detailed work within the organization (Mosud 2013).

Empirical studies of PMIS are mainly limited to the demographic description of the use of project management software and to the evaluation of specific applications of these systems or software modules to support project management tasks such as planning (Amamiet *et al.*, 1993), communication and reporting (Brackett *et al.*, 1993), risk management, scheduling (Herroelen, 2005), cost estimation, and document management.

6. Research sample and methodology

Through this paper, we have tried to identify the conceptual structure of the IT management system, analyze the management system of data, the operation and management of the phases of the project cycle that are carried out by these insurance companies, and the identification of the role and importance of the information system in the management of projects in the insurance industry in

Kosovo, always relying on the analysis of historical data from Department of Information Technology.

Therefore, in this section, we will present the companies selected as case studies, and continue further with an introduction of the research participants and a description of the interview setting. Then we will present the content of the interviews, analyzing the answers to each question posed.

In order to analyze the role and importance of the information system in insurance companies in Kosovo and their application in project management of these companies, we will use traditional research methods through questionnaires and relevant interviews in these companies. We distributed the questionnaires to the participants of this study through electronic communication and face-to-face meetings.

Considering the topic of the study, I have tried to select employees from different departments, but mainly from the Information Technology department and from the managerial staff within the companies since they are closely related to the achievement of the objectives of the work. By means of this research, we intend to get answers to the questionnaire from managers of different levels in this company, as well as employees of some departments.

The questionnaire is divided into two sections where the first section contains general questions to understand the general characteristics of insurance companies. In the second section that contains other questions, the questions will be related to the IT system in the company, such as The importance of IS in each type of insurance, the main objectives pursued by the company for controlling the IT system, the IT tools that the company uses for the information system, how many use the information system for the management of the company's projects, which information systems do they use for managing the phases of the project cycle, what are the advantages and disadvantages of using these systems in project management, etc.

We aimed to fill out the questionnaires by selecting people at analogous managerial levels, where, through transparency and open information, they are intended to help us obtain details of project management within these companies and the degree of application of information systems in project management so that the obtained results have a better comparative basis.

7. Data analysis and presentation of research results

The preparation of the questionnaires, respectively the formulation of the questions that will be part of the interview as part of the realization of the study, was the first phase that preceded the entire data collection process. In this context, the questionnaire was compiled in the form of certain questions where that surveyed managers had the opportunity to answer in an alternative form or even to other answers that they had within the questionnaire.

7.1. General characteristics of the company

In question number 1. In which year was your company licensed to operate in Kosovo? Which we submitted to understand more about the tradition of companies in the field of insurance in Kosovo and their experience in the Kosovar insurance market, we received these answers that we will reflect in tabular form.

Table 1. The year of establishment of the insurance companies carried out in the study

Insurance Company	K.S. Illyria	K.S. Dardania (Eurosig)	K.S. Sigal	K.S. Kosova e Re	K.S. Elsig	K.S. Sigma	K.S. Sigkos
Year of establishment	2002	2000	2003	2002	2008	2004	2006

From the table, we can see that the insurance companies in our country are developing companies at a young age compared to the traditions of insurance companies in other countries of the world. Among the first companies in Kosovo, the market is K.S. "Dardania" now with the name EuroSig, but with a very small difference of 2-3 years from the other companies participating in the research.

In question number 2. What is the number of workers in your company? Submitted to understand the size of the company through the number of employees, we received these answers that we will present in the table below.

Table 2. Number of employees of the insurance companies participating in the research

Insurance Company	K.S. Illyria	K.S. Dardania (Eurosig)	K.S. Sigal	K.S. Kosova e Re	K.S. Elsig	K.S. Sigma	K.S. Sigkos
Number of workers	193	150	135	140	100	96	88

From the table, we can see that the insurance companies in our country are companies with a relatively high number of employees, which leads us to believe that they have a complex organizational structure with all the necessary departments. Among the companies with the largest number of employees is K.S. "Illyria", with a total of 193 employees and then come other companies with an approximate number of employees. From the answer to this question and from the conversation we have had with the companies, we can assess that the insurance

companies in Kosovo are well consolidated, support, advance, educate and produce more and more rare and sought-after professionals in terms of the insurance market of Kosovo and beyond.

In question number 3. How many offices does your company have? Presented to understand the geographical extent of these companies that would clearly show us the seriousness and importance of these companies in the insurance market of Kosovo. We present the number of offices (branches) of the companies in the table below.

Table 3. Number of offices (branches) declared by Insurance Companies

Insurance Company	K.S. Illyria	K.S. Dardania (Eurosig)	K.S. Sigal	K.S. Kosova e Re	K.S. Elsig	K.S. Sigma	K.S. Sigkos
Number of offices	51	60	53	60	50	46	48

7.2. Information system in the company

When asked if there is an IT department in your company, all respondents gave positive response.

Table 4. Does your company have an IT department?

Does your company have an IT department?	Number	Percentage
YES	7	100%
NO	0	0%

From the responses of the respondents, we see that Information Technology is an important part of each of the companies since they have built an IT Department to manage this technology and to better manage information so that managerial decision-making is easier. The positive answer to this question, from all the companies participating in the research, made the research process easier for us in future questions since all these companies have well-integrated information technology in the work process, which means that they also apply in the management of the projects they have.

To the question, If yes, is the IT system included in all phases of project management of your company? We have presented the answers obtained from our respondents in a tabular form and we will discuss them further.

Table 5. Is the IT system involved in all project management phases of your company

Is the IT system involved in all project management phases of your company	Number	Percentage
YES	7	100%
NO	0	0%

Based on the answers given by the respondents where 100% of them or all 7 companies answered positively, we see that the IT system has also taken place in the insurance companies in Kosovo as a necessary system for collecting, storing, accessing, and processing information whenever be the need, as well as support during project management and business decision-making.

In the following question, From your point of view, does your company allocate significant parts of the budget for the IT system? The answer from our respondents was 58% for Yes, 28% for planning in the short/medium term, 14% for No specifically, and 0% for No.

Table 6. Your company allocates significant parts of the budget for the IT system

Your company allocates significant parts of the budget for the IT system	Number	Percentage
YES	4	58%
NO	0	0%
NO in a specific way	2	28%
NO at the moment but we plan for the short/medium term	1	14%

From the table above, we see that even though the information system is applicable in each of the insurance companies when it comes to the question of sufficient budget allocation for the maintenance and advancement of information systems, some of the companies do not allocate sufficient budget or its allocation they plan it in other terms, but from conversations with managers and IT officials within these companies, we learned that the management of these companies do not prioritize investment in technological advancement and in the advancement of information systems.

In the question, Is the information system part of the control of project management phases within your company? We will present the obtained data in tabular form and analyze them in the future.

Table 7. Is the information system part of the control of project management phases within the company

Is the information system part of the control of project management phases within the company	Number	Percentage
YES	4	58%
YES, only in projects related to information technology	3	42%
NO	0	0%
I don't know	0	0%

Is the information system part of the control of project management phases within your company.

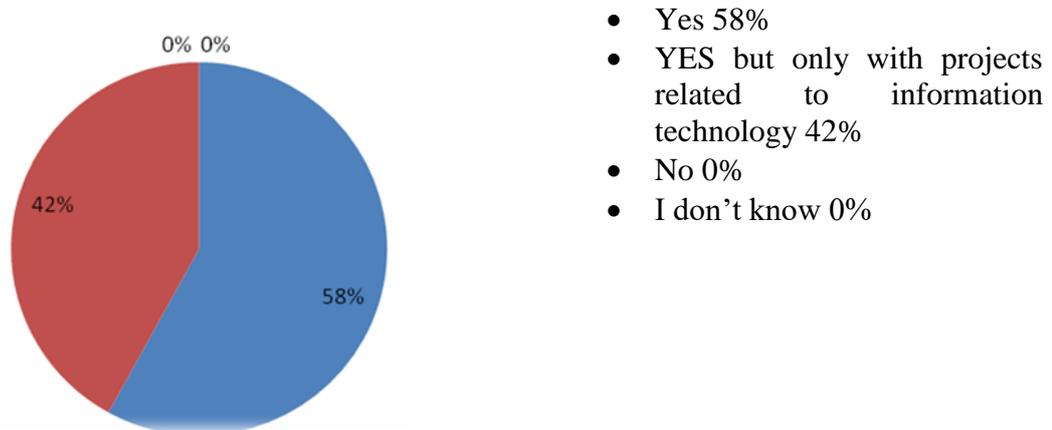


Chart 1. The information system as part of the control of project management phases

Source: Authors' own calculations based on the online Survey

From the data obtained and presented in the table and graphically, we see that information system are an integral part of project management within insurance companies, but that in 58% of cases it is used in all types of projects, while in 42% of companies it is used only in projects related to information technology and projects related to this field.

Having the answers from the 7 insurance companies that used information systems in project management, we were interested in what types of information systems for project management they were using and therefore we posed the following question, Which of the information systems for project management do you apply?. We will present the obtained data in a tabular, graphic manner and analyze it further.

Table 8. Which of the information systems for project management do you apply?

<i>Which of the information systems for project management do you apply?</i>	Number	Percentage
WBS - Work Breakdown Structure	0	0%
CPM - Critical Path Method	0	0%
PERT - Program Evaluation and Review Technique	2	29%
Gantt Chart	5	71%

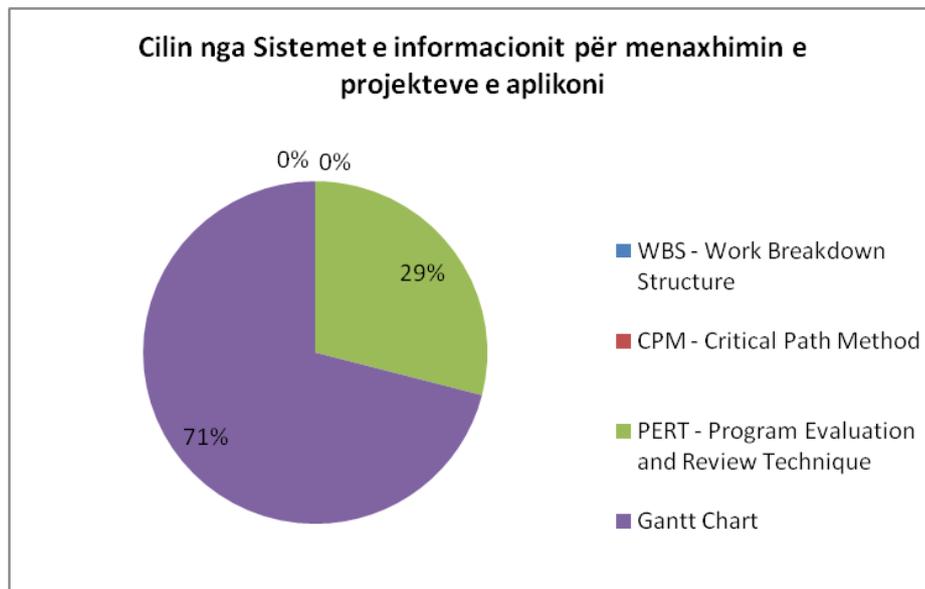


Chart 2. Which of the information systems companies apply for project management

Source: Authors' own calculations based on the online Survey

From the data collected, we see that in 29% of companies the PERT method is used, which has the potential to reduce the cost and time for the completion of a project. In 71% of companies, or in 5 of them, the method used is the Gantt chart, which was created as a management tool to keep under control the interrelationships of project activities. In the question, What impact does the use of information systems have on the successful management of your projects? (More than one possible answers). We will present the collected data in tabular and graphic form and analyze them further.

Table 9. What impact does the use of information systems have on the successful management of your projects

What impact does the use of information systems have on the successful management of your projects?	Number	Percentage
Quickly informing managers about the progress of projects	5	71%
Ease in time and budget management	6	86%
Providing information about the work of each worker engaged in the project	2	29%
Finding errors and delays so that lessons can be learned for other projects	3	43%
Other: the connection of different teams engaged in the project	2	29%

The benefits of insurance companies with the use of models or information systems during the management of the phases of the project cycle, either the Gantt Chart or the PERT network model, were numerous since in a very high percentage we had the answers for the facilitation of time and budget management (86 %) as a very important component of project management, quickly informing project managers and other interested managers about the progress of projects (71%), finding errors and delays so that lessons can be learned for other projects (43%), providing information about the work of each worker engaged in the project and connecting different teams engaged in the project with 29% both.

These data prove the necessity of the application and advancement of information systems within insurance companies or even in companies of other industries due to the multiple benefits and the facilitation of the management process of each phase of the project cycle that companies realize.

Knowing that the main focus of the topic is the role of information systems in managing the phases of the project cycle, and we have also built a hypothesis about this role, then we have posed question number 14. In which phase of project management is the most important the use of the information system? (1 - the most important to 6 - the least important) From the collected data we have built the following table and graph which we will analyze in the future.

Table 10. In which phase of project management is the use of the information system more important

In which phase of project management is the use of the information system more important	The order	Percentage
Planning	5	71%
Analysis	4	57%

Implementation	2	71%
Monitoring	3	43%
Assessment	1	71%
Closing the project	6	86%

From the above table we see that based on the responses of the majority of insurance companies (71%), information systems have the greatest impact during the project evaluation phase where all information, time spent on the project, the budget spent, errors or deviations occurred, etc., also 71% of the companies evaluated in second place the impact of the use of information systems in the project implementation phase where information systems are important for the processing and continuous evaluation of work plans and/or coordination of strategic decisions to be undertaken within management structures.

In the third place in terms of importance based on the responses of the companies (43) is the monitoring phase of the project where information systems have an impact because in this phase information is needed, on the basis of which the management can identify and solve implementation problem and analyze progress. Also at this stage, information systems are needed to link all project stages. From the responses of the respondents, we see that in the phase of analysis, planning, and closure of projects, information systems have smaller importance and impact.

One of the main hypotheses in this paper was the reduction of the failure rate of projects from the efficient use of information systems in project management, therefore, in order to prove or not the hypothesis raised at the beginning of the paper, we posed the question, the use of information systems in the management of these phases of the project cycle has it influenced the reduction of the failure rate of projects?. We will present the data collected from the seven insurance companies in tabular form and analyze them further.

Table 11. Has the use of information systems in the management of these phases of the project cycle affected the reduction of the failure rate of projects

Has the use of information systems in the management of these phases of the project cycle affected the reduction of the failure rate of projects	Number	Percentage
YES	4	57.1%
NO	1	14.3%
We don't know exactly	2	28.6%

For 57% of the surveyed companies, the use of information systems in the management of the phases of the project cycle has influenced the reduction of the project failure rate, and 28.6% of the companies did not know the exact impact, while 14.3% of them declared NO. has influenced the reduction of the project failure rate.

One of the advantages of the application of information systems in the management of the phases of the project cycle is the monitoring of the use of resources and time management during the realization of the projects, which is why we asked question number 16. Has the use of information systems made it easier? tracking the use of resources and managing the time of the realization of the projects?

Table 12. Has the use of information systems made it easier to track the use of resources and manage the time of projects?

Has the use of information systems made it easier to track the use of resources and manage the time of projects?	Number	Percentage
YES	3	42.9%
In some cases	1	14.3%
NO	1	14.3%
I don't know	2	28.5%

From the data collected through the questionnaire, we see that the project managers and IT managers in the interviewed insurance companies declared in 42.9% of cases that the use of information systems has helped them in managing the resources and time of the projects while answered that NO and in some cases, they were with the same percentage of 14.3%, while they did not know exactly the contribution of IS in the management of resources and the time of realization of projects.

In the question, Do you think that the information provided by information systems has an impact on increasing the ability of the project manager in efficient project management?

In this question, we had the agreement of the majority of managers that the information provided through the application of information systems during the management of the phases of the project cycle has an impact on increasing the skills of the project manager in the efficient management of projects since 6 out of 7 companies or 85.7 % declared YES and only one company or 14.3% said that in some cases this is true.

Table 13. Do you think that information provided by information systems has an impact on increasing the ability of the project manager in efficient project management?

Do you think that information provided by information systems has an impact on increasing the ability of the project manager in efficient project management?	Number	Percentage
YES	6	85.7%
In some cases	1	14.3%
NO	0	0%
I don't know	0	0%

In the question, What is the impact of project management information systems (PMIS) on the work of the project manager?

Table 14. What is the impact of project management information systems (PMIS) on the work of the project manager?

What is the impact of project management information systems (PMIS) on the work of the project manager	Number	Percentage
Very high	2	28.5%
High	4	57.2%
Low	1	14.3%
It has no impact at all	0	0%

In this question, we had the agreement of the majority of project managers that the impact of PMIS on their work was high in 57.2% of cases, the very high impact of PMIS on the work of project managers was in 28.5% of cases, while only in one company or 14.3% the impact of PMIS on the work of the project manager was low. This proves that a project management information system (PMIS) is a system that helps project managers in their tasks related to projects and that more should be done by insurance companies to advance their information systems. , to conduct staff training, etc.

In the question, Are you satisfied with the application of the information system in the management of the phases of the project cycle of your company? We have presented the answers to this question in tabular and graphic form and will analyze them further.

Table 15. Are you satisfied with the application of the information system in the management of the project cycle phases of your company

Are you satisfied with the application of the information system in the management of the project cycle phases of your company?	Number	Percentage
At all	0	0%
Little	1	14.2%
Average	3	42.9%
A lot	3	42.9%

Regarding the degree of satisfaction of the managers of the insurance companies participating in the research regarding the application of information systems in the management of the phases of the project cycle, the division between "Very satisfied" and "Average satisfied" was equal to 42.9% each while "A little satisfied" declared the manager of one of the companies or expressed in percentage 14.2%.

In the question, Do you consider investing more time and budget in the advancement of information systems to increase the success rate of projects? it was done recognizing that information systems have a very important role in the management of company projects and also of insurance companies. We will present the percentage in the following table and graph.

Table 16. Do you consider investing more time and budget in the advancement of information systems to increase the success rate of projects

Do you consider investing more time and budget in the advancement of information systems to increase the success rate of projects?	Number	Percentage
YES	2	28.4%
We continue with the current SI for project management	4	57.4%
NO	0	0%
I don't know	1	14.2%

From the table, we see that insurance companies in 57.4% of cases are acclimatized with the information systems they have in use and do not prefer to change since this also implies training for workers, practice and additional budget. 28.4% of respondents declared "YES" and 14.2% "I don't know".

7.3. Verification of hypotheses

H1: The use of information systems in project management affects the reduction of the failure rate of projects.

So, at the very end, based on the answers of seven insurance companies to question number 11 on "is the information system part of the project management process within the company" where 58% of them stated positively, to the answers to question number 13 where The respondents found that the benefits of insurance companies using models or information systems during the management of the phases of the project cycle, either the Gantt Chart or the PERT network model, were multiple, as a very high percentage answered for the facilitation of time management. and budget (86%) as a very important component of project management, quickly informing project managers and other managers interested in the progress of projects (71%), finding errors and delays so that lessons can be learned about projects others (43%) and answers to question number 15 "The use of information systems in the management of these phases of the business cycle project has influenced the reduction of project failure rate" where for 57% of surveyed companies, the use of information systems in the management of project cycle phases has influenced the reduction of project failure rate and 28.6% of companies they did not know the exact impact, while 14.3% of them declared NO, it did not affect the reduction of the project failure rate.

Thus, based on the answers given by the seven insurance companies and the analysis we did in this chapter, we can come to the conclusion that the first hypothesis: "The use of information systems in project management affects the reduction of the failure rate of projects" has been fully proven, however, we must have reservations due to the small number of the research sample and the almost equal market distributed among insurance companies, which does not allow for healthy competition and pressure for the realization of projects or risking the market in case of delay or failure of projects.

H2: "The use of information systems makes it easier to monitor the use of resources and time management during the realization of projects".

Based on the answers to question number 14 "In which phase of project management is the most important use of the information system" we see that based on the answers of the majority of insurance companies (71%), information systems have the greatest impact during the project evaluation phase, where all information can be recorded, the time spent on the project, the budget spent, the errors or deviations that occurred, etc., also 71% of the companies evaluated in second place the impact of the use of information systems in the phase of project implementation. Then, answers to question number 16 "Has the use of information systems made it easier to monitor the use of resources and manage the time of projects' implementation" where from the data collected through the questionnaire we see that project managers and IT managers in the interviewed insurance companies declared in 42.9% of cases that the use of information systems has helped you in managing resources and the time of project implementation and answers to question number 17 "Do you think that the information provided by information systems has an impact on increasing the ability of the project manager in the efficient management of the project" where in

this question we had the agreement of the majority of managers 85.7% that the information provided through the application of information systems during the management of the phases of the project cycle has an impact on the increase of project manager skills in efficient project management.

Thus, based on the answers given by the seven insurance companies and the analysis we did in this chapter, we can conclude that the second hypothesis: "The use of information systems makes it easier to monitor the use of resources and time management during the implementation of projects" has been fully proven to us and thus the role and importance of information systems in the management of the phases of the project cycle is fully proven not only in the insurance companies that were part of the research but also in other companies of this sector or even in other business sectors in Kosovo.

8. Conclusion and recommendations

At the very end of the paper, we can say a general definition for projects where: each project consists of a series of activities, is unique, is unrepeatable, has its own beginning and end - completion (time factor) and in advance has determined the volume of money (cost factor) and defined the required quality.

If we want the chosen project to be realized within the parameters and definitions laid out in the project proposal, it is necessary that the project be adequately managed by managers with good quality and skills. , relying on the latest technological developments, especially in information systems.

Project Cycle Management (PCM) is a term used to describe the management activities and decision-making procedures used during the project life cycle (including key tasks, roles and responsibilities, key documents, and decisions). The project management cycle is a method for identifying, formulating (evaluating), implementing, and evaluating projects and programs. The project cycle as elaborated in this paper consists of six phases: planning, analysis, implementation, monitoring, evaluation, and closure of the project.

In all these stages, the information system also has an important role in management, since based on the research we see that based on the responses of the majority of insurance companies (71%), information systems have the greatest impact during the stage of project evaluation, where all information can be recorded, the time spent on the project, the budget spent, the errors or deviations that occurred, etc., also 71% of the companies evaluated in second place the impact of the use of information systems in the implementation phase of the project where information systems are important for the continuous processing and evaluation of work plans and/or the coordination of strategic decisions to be undertaken within the management structures.

In the third place in terms of importance based on the responses of the companies (43) is the monitoring phase of the project where information systems have an impact because in this phase information is needed, on the basis of which the management can identify and solve implementation problem and analyze progress. Also at this stage, information systems are needed to link all project stages. From the responses of the respondents, we see that in the phase of

analysis, planning, and closure of projects, information systems have smaller importance and impact.

Regarding the degree of satisfaction of the managers of the insurance companies participating in the research regarding the application of information systems in the management of the phases of the project cycle, the division between "Very satisfied" and "Average satisfied" was equal to 42.9% each while "A little satisfied" declared the manager of one of the companies or expressed in percentage 14.2%.

Based on the results of the analysis of the role and impact of information systems in the management of project cycle phases in insurance companies, we can conclude that the state of application of information systems in project management, in general, and in particular in the insurance industry, it's not very good. Weaknesses have been identified in the application of information systems in all phases of project management from programming to closure. All this is expressed with negligence of companies to invest in the advancement of information systems and in the training of staff for a wider application of information systems during the realization of various projects.

The process of application of information systems during the implementation of the project, i.e. of its successful management, must begin before the resources of the organization are engaged, i.e. from the selection of the project, and must be present continuously until all work is completed activities related to the Project.

The primary role of the project manager is to satisfactorily fulfill the requirements of the financiers of the project or the buyer as well as all the main shareholders, realizing the promised time frame and at the same time, without spending more budget or other resources that are planned at the beginning and which have been allocated in the investment planning phase. In all this phase, the application of information systems and their advancement would be of great help.

In order for an organization to succeed in managing its projects, the right information systems must be applied by the right people. Companies with high success in project management are those that choose smart managers who apply the latest information technologies through which they do things efficiently and effectively. For starters, they can improve current processes that give each firm a better result. Then by adapting project management best practices they improve project results very quickly.

For successful project management, the project manager must regularly distribute information to suppliers, customers, subcontractors, senior management, and other project stakeholders. In this whole process, the use of information systems, which should be part of every company that realizes projects, has an important impact.

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CIRCULAR ECONOMY – BARRIERS AND CHALLENGES

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Abstract

Today, circular economy (CE) has great significance for businesses, consumers and the environment. The CE is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

Namely, moving towards a more circular economy could deliver benefits such as reducing pressure on the environment, improving the security of the supply of raw materials, increasing competitiveness, stimulating innovation, boosting economic growth and creating jobs. Consumers will also be provided with more durable and innovative products that will increase the quality of life and save them money in the long term.

The main purpose of the paper is to examine the awareness for CE concept and the need for applying CE principles in a way to ensure a better environment and life quality.

To achieve the aim, a survey was conducted and conclusions and recommendations will be presented based on data processing.

Key words: circular economy, barriers, challenges

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1. Introduction

Circular economy is currently a popular concept for future sustainable development. It's the biggest driver for business transformation, thanks to shifting consumer attitudes that are forcing businesses to change. The concept of circular economy is based on strategies, practices, policies and technologies to achieve principles related to reusing, recycling, redesigning, remanufacturing, refurbishing, and recovering water, waste and nutrients to preserve natural resources. Some of the major goals in operating a circular economy might be to address specific sustainability and environmental issues, with resource depletion, emissions, pollution, and environmental degradation being just a few examples.

The main purpose of the paper is to examine the awareness for CE concept meaning and the need for applying CE principles in a way to ensure a better environment and life quality. To achieve the aim, a survey was conducted electronically and the target group was managers of the companies in the Republic of North Macedonia.

The rest of the paper is organized as follows. Section 2 deals with some previous work on this topic. Section 3 gives theoretical overview and introduce briefly the readers with CE concept – benefits, challenges etc.. Section 4 provides insights into the data, methodology, and results of the analysis. The last section concludes.

2. Related research

Some studies have attempted to measure the implementation of the CE, but they have tended to focus on specific contexts and pockets of good practice. The exploratory survey (Masi et al, 2018) based study of 77 companies investigates the shift towards the CE using a comprehensive taxonomy of practices and barriers. The results show that firms favour practices related to resource and energy utilisation efficiency, while practices related to investment recovery, green purchasing and customer cooperation are less prevalent. Eco-design practices and internal environmental management practices have a medium level of implementation.

Jaeger & Upadhyay (2020) in their paper present barriers to CE adoption identified by a literature review. The literature review is followed by a case study identifying barriers to CE as seen by ten companies within manufacturing, including the GS1 global information standardisation agency used by all manufacturers. The manufacturers investigated focus mostly on recycling and waste reduction. These policies have low or very low CE effect. High CE effect policies like maintenance and reuse targeting the CE ideal of no waste, are nearly non-existent. The results identified seven main barriers to the CE: high start-up costs; complex supply chains; challenging business-to-business (B2B) cooperation; lack of information on product design and production; lack of technical skills, quality compromise and disassembly of products is time-consuming and expensive.

Cardoso et al (2002) in their research performed descriptive analysis of 416 documents using bibliometric techniques, in order to gather existing

knowledge in circular economy focusing on waste management (2007–2020). The results of this study indicate that annual scientific production increased 94% in the last 5 years, highlighting the countries of Italy, Spain, the UK, China, Brazil, and India. Between the most cited documents stand out those related to calorific value of municipal solid waste and waste to energy technologies for achieving circular economy systems. The conceptual analysis indicates strong linkage between circular economy and sustainable production, waste management, and recycling.

Shivarov (2020) in his paper explores the challenges to circularity and he states the following key challenges: physical limits to recycling and recovery; circular economy proponents view the concept as intrinsically sustainable, but it may not produce sustainable outcomes under various conditions; patterns of technological development pose two opposing challenges to circularity one challenge is overcoming path dependencies and lock-ins in order to realize the shift from a linear to a circular economic model and another challenge is the disruptive nature of technological innovation; fourth, intra-organizational (firm) and inter-organizational (industry) objectives and strategies lead to conflicting interests and sometimes will result in contradictory outcomes and fifth, the social and cultural dimensions of circular economy remain overlooked in the existing literature on the topic.

The conclusions of a study carried out by the Sonocom survey institute for hub.brussels, the Brussels Agency for Business Support (2019) are: of the 400 companies located in Brussels surveyed by the Sonocom institute as part of the circular economy awareness study the conclusions are as follow: 74.8% had never heard about the concept: 45.4% have however implemented at least one circular economy process, notably by reducing their water, energy or raw materials consumption or by purchasing sustainable resources (32%). The top five benefits of the circular economy are: a reduction in resource consumption (44%), a decrease in waste production (38%), customer retention (25%), reduced operating costs (24%) and the acquisition of new customers (23%).

Rizos et al (2016) have analyzed the barriers and enabling factors identified by SMEs during the implementation of their circular economy business model. For the analysis, the SMEs were selected from the GreenEcoNet platform, using a restrictive set of criteria in order to make the conclusions relevant for “circular economy” initiatives. This research indicates that despite the various policy instruments available to facilitate the “green” SME transition, several barriers to such a transition exist. Most SMEs in the case studies mention “lack of support from their supply and demand network” and “lack of capital” as barriers to “going green”. The paper also indicates several enabling factors that could provide additional information to policy-makers on how to support SMEs. Specifically, the results of this research demonstrate that the success of SMEs in transitioning to a circular business model depends on how well this process is supported by: a company culture with a “green” mindset on the part of the staff and manager; a local or regional network with other SMEs and supporting multipliers to enhance information sharing and awareness raising; and the benefits of having a “green” image and being recognized as a “green” supplier.

3. The concept of circular economy

Considering the fact that linear consumption reaches its goals the need to transition to circular economy is more than obvious. The changes are needed in designing of the products, business and market models, new conversion technologies of waste into a resource, improved consumer behavior, changes in innovation systems etc.

The 'Circular Economy' is a popular concept for future sustainable development promoted by the European Union and there is no one uniform definition. The World Economic Forum "define a circular economy as an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models". Also Ellen McArthur Foundation's gave the following definition: "an industrial system that is restorative by intention and design, which aims to use renewable energy, eliminates the use of toxic chemicals and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models. Another interpretation of the emerging concept views circular economy as an umbrella term covering all activities that reduce, reuse, and recycle materials in production, distribution and consumption processes (Blomsma & Brennan, 2017).

The principles of the circular economy in different scientific research are formulated differently depending on the area of interest. But usually the CE concept is based on three principles: reduce, repair -reuse, recycle (4R) .

Kirchherr et al. (2017) argue that circular economy aims to contribute to sustainable development and Suárez-Eiroa et al. (2019) add that circular economy operates under the banner of a sustainable development framework.

The scientific literature contains large number of best practice examples of CE. The majority of practices are useful models to recycle and reuse materials for the same or new products, reducing energy use and offering drastic reduction of waste.

There are a lot of benefits from circular economy. Measures such as waste prevention, ecodesign and re-use could save EU companies money while also reducing total annual greenhouse gas emissions. Currently, the production of materials we use every day account for 45% of the CO₂ emissions.

Moving towards a more circular economy could deliver benefits such as reducing pressure on the environment, improving the security of the supply of raw materials, increasing competitiveness, stimulating innovation, boosting economic growth (an additional 0.5% of gross domestic product), creating jobs (700,000 jobs in the EU alone by 2030). Consumers will also be provided with more durable and innovative products that will increase the quality of life and save them money in the long term. (News European Parliament, 2015).

In a world where only 9% of the economy is circular, it's calculated that the opportunity to profit from the conversion of the remaining 91% sits around \$4.5 trillion. This means the circular economy is the biggest wave of business transformation that companies are embarking on since the industrial revolution.

On the other hand, there are numerous barriers that prevent the implementation of the concept of circular economy, such as: environmental culture; financial barriers; lack of government support and effective legislation; lack of information; lack of technical skills; lack of support from the supply and demand network etc.

To support the transition towards a circular economy, businesses will have to change their business models. Business models should focus on developing existing ones or new products and processes who want to optimize it circularity. The models for optimum aim to increase the product value and use. These business models are often based on retained ownership of a product, for example through collateral of service instead of selling a product or taking responsibility for the product during its useful life. The return models of value focus of maximizing recovery and recycling of products and materials after use in new products or useful resources in order to reduce spending and to save the resources. The development of reverse logistics, ie. the return from the point of consumption to the point of production, is essential to this one model. The models to support the circular economy are focus on managing and coordinating circular value networks and resource flows and optimizing incentives and other support activities in a circular network. These support business models, also include the development or deployment of key enabling technologies support, enabling and facilitation of other business models. (Circular economy guide)

EU has taken a lot of measure to become a circular economy. In March 2020, the European Commission presented the circular economy action plan, which aims to promote more sustainable product design, reduce waste and empower consumers, for example by creating a right to repair). There is a focus on resource intensive sectors, such as electronics and ICT, plastics, textiles and construction.

In February 2021, the Parliament adopted a resolution on the new circular economy action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050, including tighter recycling rules and binding targets for materials use and consumption by 2030.

In March 2022, the Commission released the first package of measures to speed up the transition towards a circular economy, as part of the circular economy action plan. The proposals include boosting sustainable products, empowering consumers for the green transition, reviewing construction product regulation, and creating a strategy on sustainable textiles. (European Parliament, 2022)

Also European Commission prepared a "Green Plan for the Western Balkans", as one of the regions that is largely dependent on fossil fuels and the most severely affected by climate change.

4. Research methodology and results

In order to give new prospect to this issue, a survey was conducted in June 2022. The survey comprised 65 companies from North Macedonia. The businesses that were part of the research are usually from the manufacturing industry wholesale and retail trade and all respondents were managers responsible for day-to-day business processes – usually the entrepreneur, and otherwise a general manager.

The questions were divided into 3 groups. The first set of questions concerns general company data. The second group of questions refers to the awareness of managers about the concept of circular economy. The third group of questions are related to the implementation of the circular economy concept.

On the basis of data analysis from the first group of questions, the following results have been obtained: from the businesses-respondents, 48 were older than 10 years, 17 were older less than 10 years. Most of the respondents, i.e. 23 are small, 31 medium and 11 large companies. The most of the managers of the businesses that were part of the survey had more than 10 years of work experience.

The second group of questions refers to the awareness of managers about the concept of circular economy. On the question “How much do you know about the circular economy concept?” 5% of the respondents answered that is an expert for CE, 29% that are informed, 46% knows a little about it and 20% doesn’t heard about the CE.

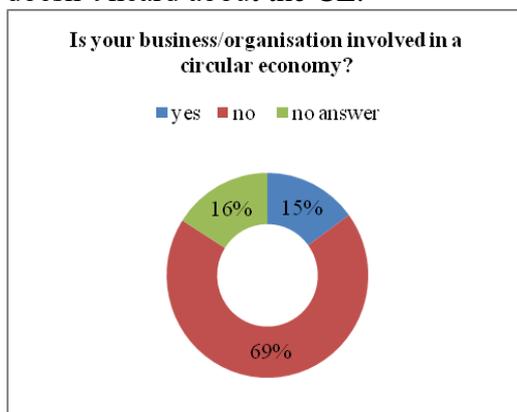


Figure 1: Results of the research

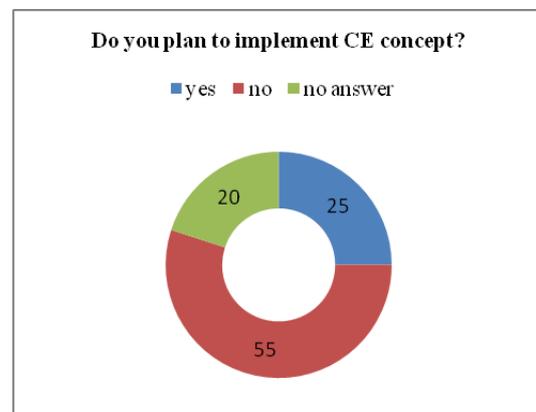


Figure 2: Results of the research

As can be seen from the data in “Fig. 1”, only 15% of the respondents answered that their company was involved in CE. Really it’s a very small number of companies that apply this concept and the results of the next question shows that there is not interest among investigated companies in applying the CE principles, only 25% plan to implement CE concept. On the next question ”Does the existing business model of your company allow for a shift towards a Circular Economy model? only 35% answered in the affirmative, 57 in the negative and 8 didn’t give an answer.

For applying the CE concept businesses have been faced with numerous challenges and according to the research results the biggest challenge is financial or economic barriers (See Fig. 3).

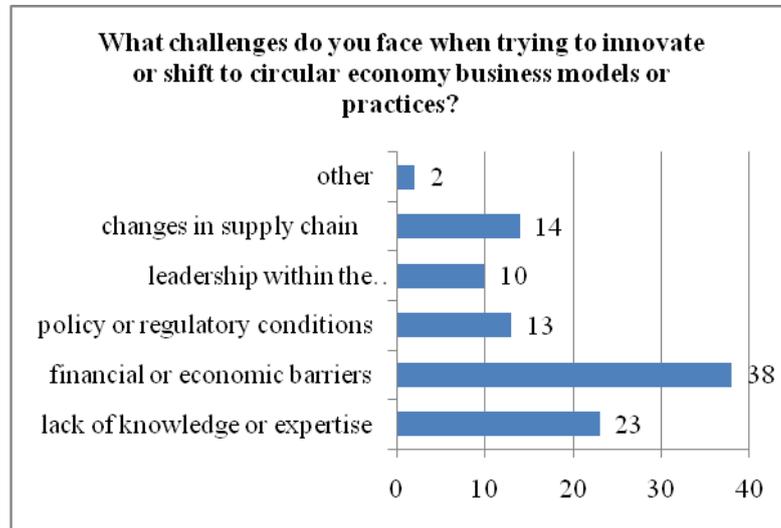


Figure 3: Results of the research

The results of the question “How can a circular economy benefit your business?” are as follows: 39% of the respondents thought that the benefit is revenue, 19% resource productivity, 8% brand, 5% customer relationship, 7% competitive advantage, 21% of the respondents answered reduce waste is a key benefit and 1% other.

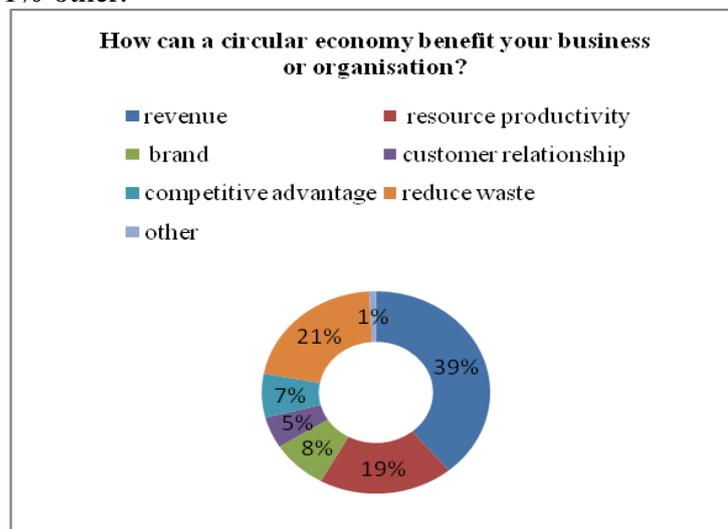


Figure 4: Results of the research

The results of the question “Have you attended seminars, trainings to better inform yourself about the meaning of CE concept and CE principles” present that only 21% of the respondents have attended a seminar, training in

order to better inform about the meaning of the circular economy concept and CE principles.

The next question is “Do you think that Government in North Macedonia have been taken enough measures for improving the implementation of CE concept? “ and 21% answered in the affirmative, 61% in the negative and 18% didn’t give an answer.

The results that emerged allow to formulate conclusion that a very small number of companies apply the concept of circular economy hence it’s necessary to encourage awareness among managers, employees and consumers about the benefits of the CE concept and the need for its implementation as soon as possible.

5. Conclusion

The circular economy is the biggest driver for business transformation, thanks to shifting consumer attitudes that are forcing businesses to change. In simple terms, the circular economy assumes the implementation of dynamic systems, where there’s no specific endpoint for the business processes across the supply chain or across all consumer touchpoints. A circular business model can spur growth, reduce costs, and build resilience. It should be recognized that the laws of nature do not allow a process without waste and energy loss, so circularity will always be limited by physical parameters.

The results of the research show that there is little implementation of CE concept among our companies, The companies are facing with numerous barriers and challenges such as: lack of knowledge or expertise, financial or economic barriers, policy or regulatory conditions, policy or regulatory conditions, leadership within the organisation not supportive, changes in supply chain etc.

In order to encourage and increase awareness of the importance of the circular economy, we propose the following measures: increasing the company environmental culture; networking; support from the demand network; increasing the personal knowledge; Government support.

Future studies may focus on exploring the ways for improving company competitiveness through circular solutions.

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CIRCULAR ECONOMY - CONCEPT FOR A
SUSTAINABLE FUTURE

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Abstract

The implementation of a circular economy has appeared as a response to the need to challenge the flaws of the current linear economic system. Contrary to linear production methods, circular economy systems retain added value from products for as long as possible with the aim of eliminating the generation of waste. The circular economy creates benefits and sustainability to meet economic, environmental and social challenges. The purpose of this paper is to raise awareness of the relevant stakeholders and especially young people, to encourage the rational use and increased efficiency of resources, as well as to change the mindset and habits of youngsters in order to ensure a high level of protection and improving the quality of the environment. The growing concern for the environment and raising awareness of the importance of the circular economy will contribute to improving the quality of life, a secure future for young people and the creation of new jobs.

Keywords: circular economy, sustainability, European Green Deal, youth

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1. Introduction

According to OECD, (OECD, 2021), population and economic growth are on track to double global material consumption by 2060.⁵ Trends towards urbanization and higher living standards will lead to particularly high levels of materials use in cities. By 2050, 55% of the global population is expected to live in urban areas (OECD/European Commission, 2020). Already, cities represent almost two-thirds of global energy demand, produce up to 50% of solid waste and are responsible for 70% of greenhouse gas emissions (World Bank, 2009). Globally, at urban level, material consumption is expected to grow from 40 billion tons in 2010 to 90 billion tons in 2050 (UNEP, 2018). The transition to a circular economy presents not only an opportunity to address the triple planetary crises of pollution, climate change, and biodiversity loss, it is also a necessity to ensure future wellbeing.

The circular economy is a regenerative economic model that has a positive impact on all types of capital: financial, human, social and natural. It aims to restore natural resources, keep raw materials in use and extend the life of products by applying appropriate design and turns them into raw materials instead of waste, so that they do not contribute to environmental pollution (Rizos, et al, 2017). Current world trends aim to replace the deeply rooted linear economy and waste management with a circular economy. The circular economy also supports the protection of human rights, by ensuring sustainable development, global security of natural resources, action on climate change, energy security and sufficient food for all. In addition, it reduces inequalities, offers more transparent public finances, increases the social security of citizens and preserves health, a clean environment and the right of future generations to use natural resources.

This paper aims to improve understanding of the circular economy concept as well as its various dimensions and expected impacts. Based on an extensive literature review, the paper first reviews the different available definitions of the circular economy. This is followed by a presentation of the main economic, environmental and social impacts at the EU and national level of the circular economy transition according to the existing evidence in the literature. The research team furthermore conducted Research study “Attitudes of young people regarding the rational use of resources, recycling and utilization of waste - insights into the EU's Green Agenda for the Western Balkans”. The research was conducted within the project "Youth Green Agenda" supported by the Agency for Youth and Sports, Government of the Republic of North Macedonia (RNM). Finally, we present main conclusions and policy recommendations and suggest that there is limited information especially of young people about the circular economy and its economic, environmental and social benefits.

⁵ In 1920, the average resident of Europe with his economic activity and livelihood created about 30 kg of waste per year. In 2020 it is estimated that the planet had between 1.8 and 2 billion inhabitants. In 2020, the average resident of Europe creates about 450 kg of waste per year, or 15 times more than a hundred years ago. And the number of inhabitants is almost 4 times higher (7.8 billion).

2. Concept, role and meaning of circular economy in modern conditions

The current and traditional linear extract-produce-use-dump material and energy flow model of the modern economic system is unsustainable (Frosch and Gallopoulos, 1989). Circular economy provides the economic system with an alternative flow model, one that is cyclical (CIRAIG, 2015). In a circular economy, waste generation is minimized through the careful design of new products and an industrial process in which materials constantly circulate in a “closed-loop system”. Waste has become extremely present across the whole planet, and raw materials are in demand more than ever. It is estimated that around 80% of all materials and consumer goods are disposed of and that upon entering the food supply chain, over 30% of processed food is thrown away. Applying the circular economy concept encourages environmental protection and social prosperity, while enabling economic growth in line with sustainable development. A circular economy can reduce environmental devastation in the whole system, as well as increase the generation of new added value (Grdic, et al., 2020).

The current concept of a circular economy (circular economy concept) initiates a movement from the current concept of a linear economy, based on systems with intensive consumption of natural resources, high emissions, waste generation and negative effects on the environment, towards circular, less wasteful systems that use resources more efficiently and sustainably, while providing job opportunities and a high quality of life (see “Fig. 1”).

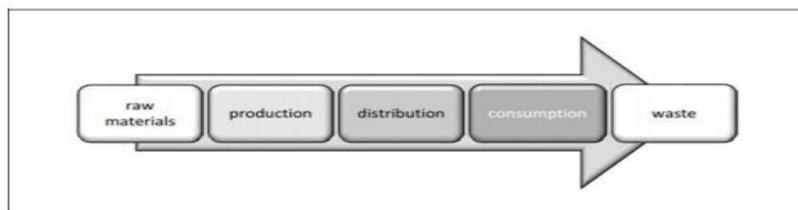


Figure 1. Phases of a linear economy model

Source: Kriško, 2015

In order to abandon the concept of a linear economy and transition to a circular economy, changes in the system are necessary in the area of:

- society organizations,
- education,
- innovations in technology and other activities,
- creation of appropriate material infrastructure,
- creation of an appropriate institutional framework,
- new design of products and business processes (production, procurement, management, etc.),
- design, implementation and development of new business and market models,
- waste management system development,

- changes in consumer priorities and habits and the development of new forms of behavior
- development of new methods for managing integrated systems,
- development of new financial instruments that support the concept of circular economy,
- defining and publishing new policies.

According to Murray et. al. 2015, “The circular economy is an economic model where planning, resource supply, procurement, production and processing are designed and managed, both as a process and as an outcome, to maximize ecosystem functioning and human well-being“.The circular economy is a new paradigm of sustainability (Bote et al. 2022). A shift to a circular economy could reduce each nation's greenhouse gas emissions by 70%, increase the workforce by 4%, and have a low-carbon economy (Masoumi, 2022) . Using waste resources by just 1% could save approximately 840 million tons of metals, fossil fuels, minerals and biomass per year, as well as saving 39.2 trillion liters of water (Rubel, Schmidt & Felde, 2017).

The concept of circular economy represents a key contribution to the 2030 Agenda for Sustainable Development (United Nations, 2015), its Sustainable Development Goals (UNDP, 2015) and other jointly agreed international goals, according to the Paris Agreement and the United Nations Conventions, related to priorities for climate changes. In 2015, the European Commission adopted a new legal framework for the introduction of a circular economy model in order to strengthen the economy through the sustainable use of resources and ensure sustainable economic growth (European Commission, 2015). The transition to a more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimized, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy. Such transition is the opportunity to transform our economy and generate new and sustainable competitive advantages for Europe.

Reducing the rate of consumption, together with increasing the rate for circular usage of the materials, is a special priority, in the context of the new EU Green Deal strategy (European Green Deal Strategy, 2019), as Europe's new agenda for sustainable growth and development (European Commission, 2022). The European Green Deal represents a roadmap towards transforming Europe into the first climate-neutral continent by 2050 and transforming the European Union into a modern, resource-efficient and competitive economy, with no net emissions of greenhouse gases by 2050, with economic growth based on pronounced circular use of the resources. The set goals will be realized by turning climate and environmental challenges into opportunities in all areas, making the transition fair and inclusive for all.

The circular economy model implies a change in the paradigm of resource management in an efficient and smart way. Such a concept is based on eco-innovation, eco-design, advanced technologies, energy efficiency and use of renewable energy sources. Circular economy is an economy that uses a system-focused approach and includes industrial processes and economic activities that

are regenerative by design, allows the resources used in such processes and activities to retain their highest value for as long as possible, and strives to eliminate waste through superior design of materials, products and systems (including business models).

There are two sets of business models that relate to a circular economy: 1) business models that integrate and encourage reuse, repair, remanufacturing and upgrading in their operations and 2) business models that turn old goods into new resources by recycling. In this way, consumers become users and creators, while the labor market creates more skilled jobs.

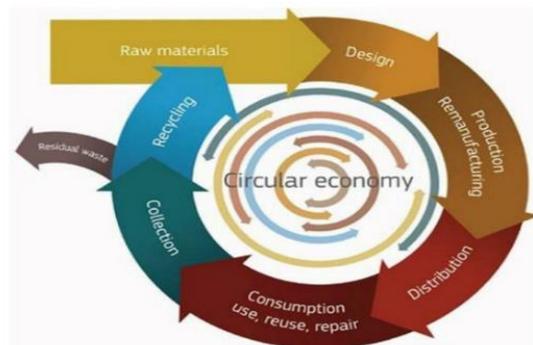


Figure 2. Circulation of resources in the concept of circular economy
Source: Manfredi, et al., 2015

“Fig. 2” shows the stages of the circular economy model, where in each stage of the circular cycle it is possible to reduce costs and dependence on natural resources and the accumulation of waste. The circular cycle starts with good product design, so that such products are easily refurbished or disassembled. All phases are interconnected, the phase of production and processing of products is based on the concept of exchange of by-products, a waste material from one production process enters as a resource in another process. In the transport phase, efforts are made to achieve the greatest possible energy savings and the least possible environmental pollution. The end of the cycle is marked by the collection and recycling phases, where the main goal is to reduce as much as possible the amount of resources that leave the system and end up as waste. The application of the concept of circular economy aims to enable sustainable management of resources. Although the circular economy is often presented only as a plan for the collection and recycling of waste, the concept is actually much more complex and goes in the direction of the development of new technologies, innovations, designs and modular products, produced in a way that they can be constantly supplemented and processed and represent a new way of organization in companies. For many companies it often means reorganization and a new way of managing, changing many processes where there are changes in organizational structures that turn into complex networks supported by modern communication systems and computer technology. The concept of a circular economy implies the success of companies that are better than their competitors in "adding value", but also for society and the environment, for consumers and for investors.

Through the transition to a circular economy, companies can have significant benefits, in the form of (WBCSD, 2017):

- Opening of new jobs;
- Innovations and competitive advantages;
- Cost reduction;
- Reduction of energy consumption and CO₂ emissions;
- Greater reliability of the supply chain and resources.

The absence of appropriate regulations, lack of environmental education, lack of environmental conservation culture and low market demand pressure are significant relevant challenges of the circular economy (Zhang, 2019).

Circular economy knowledge should be concentrated in large industries and small and medium-sized enterprises. This topic should increasingly be part of the professional and scientific research of the university academic community. It will allow companies to hire professionals who will be educated on how to reshape business models towards a circular economy. The government, through its regulations, can help the economy with appropriate green policies, taxation, promoting a circular economy and attracting green investments. Scientists have the opportunity to increase research and development on this topic and implement new methods with innovation and sustainability.

3. Circular economy in the Republic of North Macedonia - Legal and Institutional Framework

Having regard to the Republic of North Macedonia as a candidate country for EU membership, it needs to apply all European standards and best practices, as well as comply with EU legislation, and it is also necessary to manage waste, which is important segment of the environment. Waste management according to the prescribed standards will not only contribute to a better environment, but will also contribute to the protection of people's health and ensure the implementation of the circular economy in the country.

The main legal basis at national level is currently found in few documents, in the continuation of the paper there will be a brief review of these documents.

The Environmental Law (2005) contains the basic principles for environmental protection, which are the basis for defining environmental management procedures, which are common to all laws that regulate separate segments of the environment.

The Waste Management Law (2020) regulates in detail the collection, transport, selection, recycling of waste, as well as its treatment and utilization, which will enable the creation of an efficient regional system for waste management, which will reach and fulfill the requirements according to the EU legislation.

The Environment and Climate Change Strategy 2014-2020 of Ministry of Environment and Spatial Planning (2015) defined the priority actions aimed at a series of benefits for the environment and society. What is important is that the strategy upgrades the legal framework of the EU environment, in the direction of better preparation for the challenges of joining the EU. The Ministry of Environment and Spatial Planning, in cooperation with the Ministry of Economy

and the Ministry Finance is in charge of preparing regulations for extended producer responsibility (packaging, batteries). The Ministry of Finance is developing economic instruments and providing funds to encourage sustainable waste management, particularly with regard to fee collections, asset management and fee recovery mechanisms.

The Republic of North Macedonia for circular economy promotion, at home, but also in the region, in its industrial policy focuses on strategic goals related to the catalysis of green industry and green production, which is covered in the New Industrial Strategy 2018-2027 (Government of RNM, Ministry of Economy 2018).

In the National Program for Competitiveness, Innovation and Entrepreneurship (Ministry of Economy, 2020), supports companies to develop projects for company assessment and introduction of the concept of circular economy, looking at the entire life cycle of products, waste reduction and modern waste management and recycling.

With the National Energy and Climate Plan 2021-2030 (Government of RSM. Ministry of Economy, 2020a), the five dimensions of the circular economy of the Energy Union have been adopted, i.e. decarbonization, energy efficiency, security of energy supply, internal energy market and research, innovation and competitiveness. In this plan, around 63 specific policies and measures are proposed to achieve established goals for each of the five dimensions. Estimates for North Macedonia show that by 2030, the application of practices inherent to the circular economy in the selected waste streams expressed through three indicators can ensure (Ministry of Environment and Spatial Planning, 2020):

- Savings of 951 Gg CO₂eq/year of emitted greenhouse gases compared to 2016;
- 2740 new jobs;
- 47.17 million euros of economic benefit

North Macedonia has already ratified the Paris Climate Agreement (Law for Ratification of Paris Agreement, 2017), contributing to the global effort to reduce greenhouse gas emissions caused by the burning of fossil fuels by 30%, a trend of 36% higher, by 2030. At the Western Balkans Summit, the region adopted the Green Agenda Declaration (European Commission, 2020). With this, the region undertakes to follow a process of transition from a linear to a circular economy, fully aware of the need for a research and innovation system to support this transition, as part of the common regional market.⁶ An Action Plan has been prepared with roadmaps for the implementation of this Declaration on the Green Agenda and the establishment of an effective and efficient monitoring system" (Ministry of economy, 2020).

The competent authorities for inspection supervision and sanctioning are the State Environment Inspectorate (SEI) and the authorized environmental inspectors, as well as the local communal inspectors. Inspection control of

⁶ With the Green Agenda Action Plan, the way is opened for the realization of the Economic and Investment Plan for the Western Balkans, worth 30 billion euros. With this plan, it is foreseen that the countries of the region will receive nine billion euros in non-refundable aid and 20 billion euros

products that have been put on the market is the responsibility of the State Market Inspectorate (within the ME).

Significant stakeholders are also the Association of Local Self-Government Units (ALSGU), Chambers of Commerce, and Unions of public services, Unions of waste handlers, Associations of public service providers, NGOs and Scientific institutions at universities. The weakest feature is institutional practice and the lack of systematic communication and provisions related to training and guidance. More regular meetings and dialogue between the Ministry of Education and Culture and municipalities, industry and other stakeholders are needed.

4. Research results

The research was carried out within the framework of the "Youth Green Agenda" project supported by the Agency for Youth and Sports, Government of the Republic of North Macedonia, regarding recycling, rational use of resources and utilization of waste in the Republic of North Macedonia. The aim of the research was to obtain data on young people's knowledge of the EU's Green Agenda for the Western Balkans. The questionnaire that we conducted within the framework of this study contains 33 questions about the concept of the circular economy and green entrepreneurship. 299 young people participated in the research, 73.9% of them were female and 26.1% were male.

From the analysis of the answers we received, it can be concluded that the majority of respondents have not heard about the concept of circular economy (54.7%) and the EU Green Agenda for the Western Balkans (80.8%), which means that there is a need of trainings/workshops in relation to the benefits of the previously mentioned concept. In relation to the question to choosing the right materials to package the products, the largest number of participants answered that they sometimes pay attention (49.5%), which means that there is still interest among them.

From the analysis of the issue of waste sorting at home, 45% of respondents said that they mostly sort plastic, despite the fact that 53.3% of them believe that there are no conditions for sorting.

In a large part of the answers among the respondents, it is stated that there is a positive attitude towards environmental protection (45.7%) despite the fact that not enough activities are undertaken, mostly by the citizens (31.7%), then by local self-government (25.3%), central government (17.7%), educational institutions (15%), families (14%), non-governmental organizations (9.7%) and business entities (6.3%).

Interesting opinions were received on the issue of innovative ideas for reuse of materials and utilization of waste. Namely, some of the responders propose to make functional objects from old furniture; to make organizers from cardboard, to create electricity through fuel obtained from plastic, to create natural fertilizer by burying vegetable and fruit peels, to sew bags from old jeans etc.

The questions indicate the fact that among the responders there is an awareness of recycling, rational use of resources and utilization of waste in RNM. Also, a significant part of the responders show interest in starting their own

business, participating in recycling and waste processing activities with the aim of a cleaner environment in our country.

Education and training must respond to the challenges of the 21st century, including the green transition. To accelerate circular solutions, businesses and governments must unlock the passion and creativity of young people by centering their voices in circularity decision-making in boardrooms, waste plants, and communities. Such intergenerational partnerships are key to scaling up ambition from recycling towards strategies higher on the waste hierarchy such as redesigning, repairing, and remanufacturing. Oftentimes, youth are engaged in the circular transition as volunteers but lack the resources to have a positive impact on a bigger scale. By funding youth-led circular economy research and entrepreneurial projects, creating circular economy jobs and training programs, and providing learning and networking opportunities, the old economy can make way for the new economy with young people at the helm.

5. Conclusion and recommendations

The circular economy affects the reduction of the load and the use of natural resources, while at the same time it stimulates economic growth and employment. In order for the concept of a circular economy to come to life, it is first necessary to make a drastic change in the production process and the life cycle of the products, from the very design, the type of raw materials and the energy that will be used, to the consumption. At the same time, everyone should strive to generate as little waste as possible, and even if there is, it should be used as a resource in some other production. Therefore, in order to achieve the circular economy, a long way to go is to use as many raw and recyclable materials as possible, to create circular industrial sites, new and sustainable business models, and when the product will eventually become waste, to ensure efficient recycling, the result of which will be a high-quality secondary raw material. The consistent and timely application of the principles of the circular economy at the moment is from being exceptionally important for our country to being the most serious problem of the whole country. This is precisely the destruction of the environment due to improper treatment of the fallout. North Macedonia needs to fully align its legislation with EU legislation on waste, including recycling and landfill reduction. In other words, it is necessary to make great efforts to develop a sustainable way of life, not only production, but also to direct all factors in society, from consumers to the government, to sustainable solutions in all areas, and not only when it comes to production. It is necessary to ensure efficient collection and management of waste, as well as to build recycling facilities, so that countries can in the future use the resources that currently end up in landfills.

Institutional cooperation is needed, and even more education and information of all stakeholders, who will implement all measures and activities towards the establishment of stem for the selection of the waste. And finally, it will be more necessary to change the way in which we function and that all of us, as end consumers, have the power to attribute to socio-economic changes and to protect our health. Partnerships between businesses, governments, and international organizations are the foundation for the success. Similarly,

partnership and collaboration are necessary for changing the game to drive the circular transformation of our socio-economic systems.

Nobody can achieve a circular economy alone, and taking action together can foster hope and joy needed to build resilience to overcome the social and environmental crises we face today. With so many already taking action at the grass-roots level, policymakers, business leaders, and decision-makers need to listen to communities to learn from their progress, pursue culturally-appropriate solutions, and scale up local efforts for a wider impact. Our main conclusions are the following:

- Uplift indigenous leadership to promote indigenous participation in the circular economy on their own terms, including through traditional, land-based circularity practices;
- Provide capital, safe jobs, training, and leadership opportunities for youth, rural and remote communities, and others already contributing to the circular transition;
- Implement circular procurement, taxation, investment, and trade policies to support circular innovation at all levels, from SMEs to international partnerships;
- Integrate circular, low-carbon, and naturebased solutions through policy-making, business operations, and across society to help tackle the triple planetary crises of pollution and waste, climate, and biodiversity; and
- Build symbiotic partnerships and networks to share circularity stories, lessons learned, and resources across borders, sectors, and generations.

With more and more businesses, policymakers, decision-makers, and civil society leaders recognizing the social, economic, and environmental benefits of a circular future, now is the time for bold leadership and global solidarity to achieve it.

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FUTURISTIC TOOLS FOR HUMAN RESOURCES THAT
WILL DOMINATE IN THE FUTURE

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Abstract

Human resources are a driving force that creates numerous changes, but they are also the key to the company's competitiveness. Human resources moved from the backend administration role to a frontline strategic function. The pandemic has implied development of many learning platforms and it is evident that virtual learning, training and employee development are the dominant aspect of a company's competitiveness. Human Resources tools are the wide range of technological solutions that help organizations manage their day-to-day HR activities effectively. The purpose of this paper is to explain and present the futuristic tools for human resources that will dominate in 2023: Bonusly, Zenefits, Recrutee. The tools and their use will be explained, and a comparative analysis will be made between them, their advantages and disadvantages. Also, secondary statistics on the use of these tools by companies will be displayed.

Keywords: Human resources, futuristic tools, competitiveness

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1. Introduction

Human resources management emerged in 1980 in the USA as a response to the increased pressure on firms because of the globalization and technological development. Working people were starting to be considered in a different perspective. (Armstrong and Taylor, 2015) underpin several goals, regarding the Human resources management:

- Support the organization in achieving its objectives by developing and implementing HR strategies that are integrated with business strategy;
- Contribute to the development of high performance culture;
- Ensure that the organization has the talented, skilled and engaged people it needs;
- Create positive employment relationship between management and employees and climate for mutual trust;

Human resources are so important because they sustain such a workforce for a long period of time and avoid high labor turnover, provide training and development, etc. Regarding (J.Coyle- Shapiro, K.Hoque, I. Kesler and others 2013) the effective management of organizations employees is arguably the single most difficult, most complex, most ambiguous, yet most important task those managers face. This is true at least for four reasons: HR policies refer to human behavior which is complex, often conflictive, and culturally dependent. There are many different HR policy instruments and practices, many managers believe that people management is just common sense.

2. Human resources management in Covid -19 pandemic

The Covid 19 pandemic threw managers and employees into very uncertain position with no clear end on sight. Human resources operated in this crisis position 2020 and the first half of 2021, thinking how to find some solutions for employees to work from home in order to keep their organization functioning. Regarding (Kutieshat, Farmanesh 2022), the conventional set of human resource management practices as an important source should create a flexible and innovative view to maintain the significant effects in unique organizational strategies that distinguish committed employees, wherever continuous innovation is essential for gaining organizational sustainability. The competitive and unpredictable situation requires new human resources practices (NHRM) to deal with problems in the organizations, to enhance their climate, contribute and increase innovation performance.

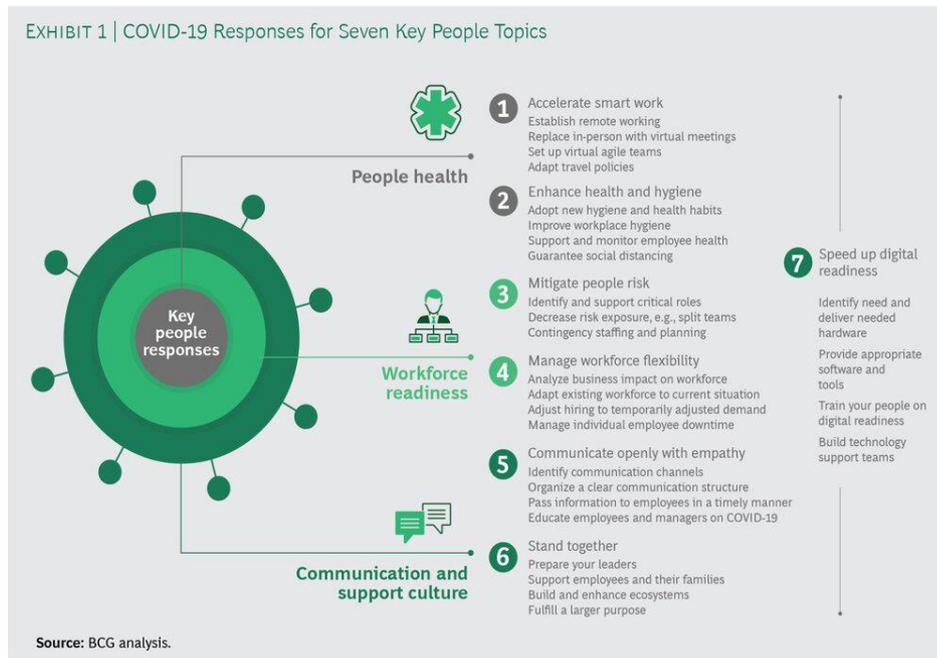
Accountor Group and Haaga-Helia University of Applied Science started a joint research program about the impact of international, social, economic and business changes on organizations, as well as the role of Human resources managers in different companies. The project included a survey of 176 HR professionals who were interviewed about their opinions on the current conditions of their companies and about how things could change in the next three years. Here are five trends expected to intensify in the coming years:

- Responsibility and sustainable development are not new phenomena, but, according to the survey they will become even more important in the coming years (79% of respondents believe that the role of responsibility/accountability as a business value will be growing, and this is 9% more than last year).
- Remote work has been implemented in many companies due to the COVID 19 exceptional situation. (84 out of 108 respondents who answered the open – ended question noted that the role of remote work has been increasing, and they believe that this trend will continue in the future and also will increase labor productivity within 2-3 years.
- Independence is the most important trend in the labor process. In practice, it looks like more responsibility will be shifted to individuals and teams (The survey results show that the opportunities for employees to influence business processes at their companies will be increasing in the near future, For example the staff will be able to make more impact on work systematization, on system development and organizational changes)
- Digitalization. The pandemic has accelerated the process of digital transformation in many companies. The development of digitalization, automation and robotics will have a significant impact on the work of HR managers in the next 2-3 years. The trend is going to give the HR sphere more opportunities for such processes as planning, coaching and development, while simultaneously changing the role of HR managers.
- The most important information in organizations is moving to digital platforms. According to respondents, it's no longer a person, but digital platforms in the organizations. According to a new survey, 86% of respondents now believe that the most important information about the company is stored in digital platforms.

As we can observe 2020 was exceptional in many ways and it changed the way humans live, it has changed human's minds; it has changed business and organizations. But this crisis has also positive boost in digitalization, change as a daily routine and the importance of Human resources managers. Regarding (Ebiasuode Awe 2021) the pandemic situation may force many organizations to innovate work methods to keep the organization on and lead to adapt to technology as better as possible.

Covid-19 is essentially a people crisis, so, as this BCG penned article outlines people priorities need to be front and centre. Seven core priorities are illustrated below in FIG and described thereafter. *"The lessons of the COVID-19 crisis can generate a steep learning curve and sustainably improve corporate resilience as a result—introducing smart work, establishing a culture of trust, upskilling, exploring new avenues."*

Image 1



Resources:<https://www.bcg.com/publications/2020/people-solutions-response-covid>

As we can observe the image 1 according to Stark, Baier, Dyrchs and others these are the seven key points:

- Accelerate Smart Work – Flexible working models are a significant part of the fight against COVID 19 infections because they reduce workplace contact, including for those employees who have to stay onsite. The company must establish remote working and replace in person meetings with virtual ones. Meeting in office are to be convened only when there is no alternative. Also a company must set up virtual agile teams. With the right technical support and the few simple rules teams can keep their agile working models without being in the same room..
- Enhance health and hygiene. Companies adopted new preventive hygiene measures and health habits. Maintaining the proper social distance can prevent infection.
- Mitigate people risk. Companies were at risk when more employees become ill and absent that normal operations could not be sustained. So, good organizations are prepared for these problematic situations. For example Goodyear has identified employees in all operating units who are essential to business and has analyzed whether and how those positions could be filled in a worst case scenario. The company must identify and support such critical roles, in other words everybody whose absence would jeopardize business continuity.
- Manage Workforce Flexibility. Many companies already use strategic workforce planning in a long term. But strategic workforce planning tools need to incorporate short term plans in this highly dynamic crisis. The

workforce can be adapted by employing short, medium or long term measures. Also companies are adjusting hiring to temporarily adjusted demand.

- Communicate Openly with Empathy. Companies are identifying communication channels, organize a clear communication structure and educate employees and managers on COVID 19. Companies should provide regular updates, in emails or virtual meetings on new announcements by the health authorities or the WHO.
- Stand together. Companies should prepare the leaders to face all the crises with showing empathy to employees, understanding their problems and fears. Leaders should support the families and communicate all the time about finding the solutions for their uncertainties.
- Speed up digital readiness. This last point is the most important for such pandemic crises. The company should identify need and deliver needed hardware, provide appropriate software and tools (videoconferencing tools and apps for virtual teaming to facilitate remote collaboration, and network stability. People should be trained on digital readiness, basic or advanced. Very important for the company is to create rapid- response team for people priorities. These teams will be proactive in order to act before being overtaken by events. These measures will avoid being worn out by the crisis and to instead draw strength from it- turning the people response team into a competent partner for business and employees during and after the COVID 19 crisis.

3. Futuristic tools for Human Recourses management

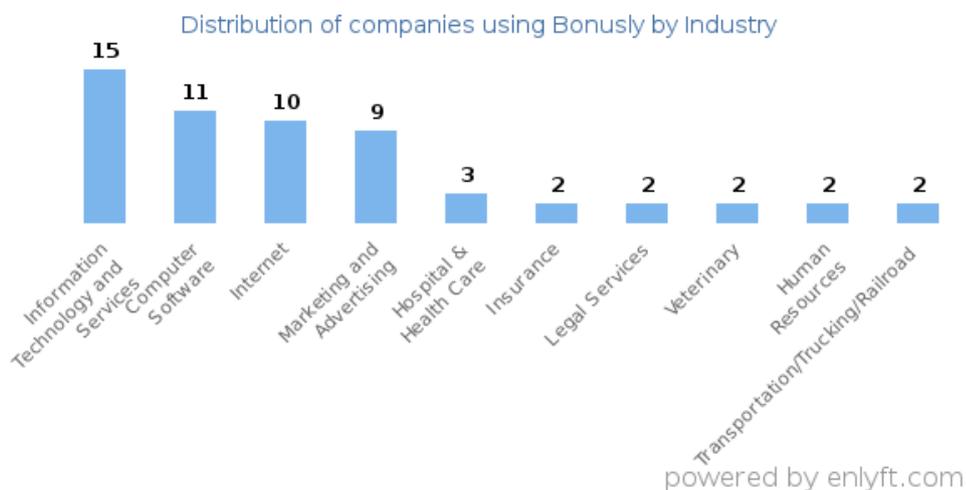
As the (Johnson , Guetal, 2020) emphasizes that the face of HR is often a portal, rather than person. Recent research shows that organizations that successfully adopt sophisticated HR technology tools outperform those that do not. The term e-HR describes the transformation of HR service delivery using web-based technology. Now HR professionals must not only master traditional HR skills and knowledge, but also have ability to apply that knowledge via technology. And HRIS means *Human recourses information systems* or the integration of hardware, software and business processes used to implement an e-HR approach.

This is a complete new perspective on Human Resources Management as we are facing deeply in the digital transformation of the general way of business. The object of this paper is to explain new way of approaching the HRManagemet. There are so many platforms and apps for e-HR, but I select some of them, just to show how they are approaching employees.

3. a. Bonusly System

The headquarter is in Colorado, but some teams can also be found in Seattle and NYC. They are founded in 2012 which of the household names in the employee rewards and recognition software space. Bonusly is an easy to use employee recognition and reward system that boosts employee morale, engagement and productivity. Bonusly helps employees feel that their work is valued and

appreciated.. By implementing Bonusly into employee’s workflows, the company can maximize tool adoption. Bonusly is set up as the company want it, from the custom currency name and company awards to the HRIS and chat integrations. Meaningful and attainable rewards are the major component of the Bonusly program. When choosing the reward, the manager can choose the country from a drop down menu, and pick something suitable from Amazon, Uber, Home Depot even local services. Managers can also do team – wide rewards or set up recurring events like birthdays and anniversaries.



<https://enlyft.com/tech/products/bonusly>

Image 2

As we can see Bonusly customers by industry: Information technology and services (16%) Computer software (12%), Internet (10%) and Marketing and advertising (9%) are the larger segments.

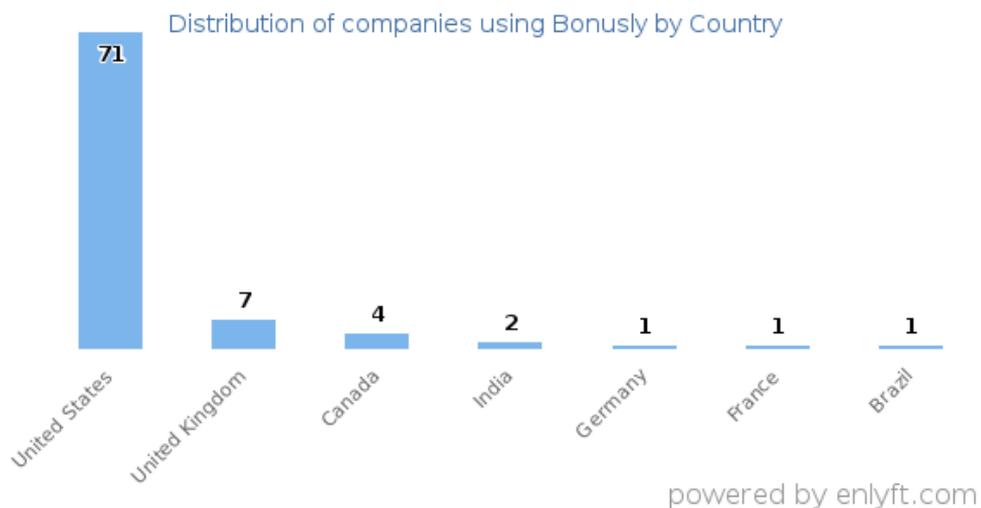


Image 3

<https://enlyft.com/tech/products/bonusly>

The image 3 shows us that United States are using Bonusly 81%, than United Kingdom are using 7%, Canada 4% and other countries are starting to use this platform, like India, Germany, France, Brazil.

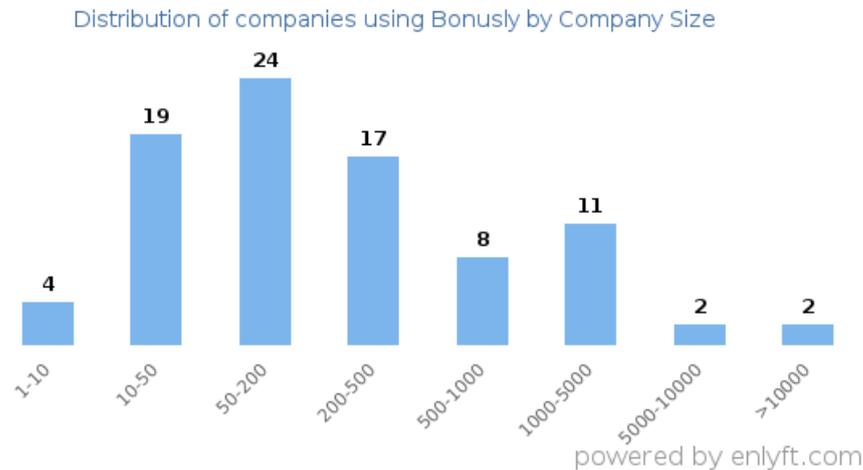


Image 4

<https://enlyft.com/tech/products/bonusly>

Image 4 shows us distribution of companies using Bonusly by company size. Majority 54% are medium-sized, 14% are large companies (with more than 1000 employees) and 25 % are small companies (less than 50 employees).

3.b. Zenefits platform

Tri Net Zenefits is a technology company based in San Francisco that offers cloud-based software as a service to companies for managing their human resources. The company was founded in 2013. Since then, more than 12 000 businesses have been using this cloud-based software. Zenefits is a platform that is automatically connecting HR, Benefits, Payroll and Scheduling together. This means that less time is spent on low priority tasks so that the team can focus on more important things. Entrepreneurs and employees in small and mid-sized businesses influence the American economy, so they are facing challenges disproportionate to their size and resources. Zenefits focuses on the small business because they are a fuel for the American economy. Zenefits offers an employee self service portal which can integrate with their benefits, payroll, health insurance, retirement plans and much more. This platform offers:

- Hiring and onboarding
- Employee Directory
- HR Record Management

- Company ORG Chart
- Customize Employee on boarding
- HR, Benefits, and Payroll Reports
- Data visualization
- Custom Reporting
- Time off tracking
- Compliance Assistance

Zenefits is also a partner with Google Hangouts, Microsoft Teams, Slack and Zapier among others and allowing all these systems to share information and work seamlessly with the software.

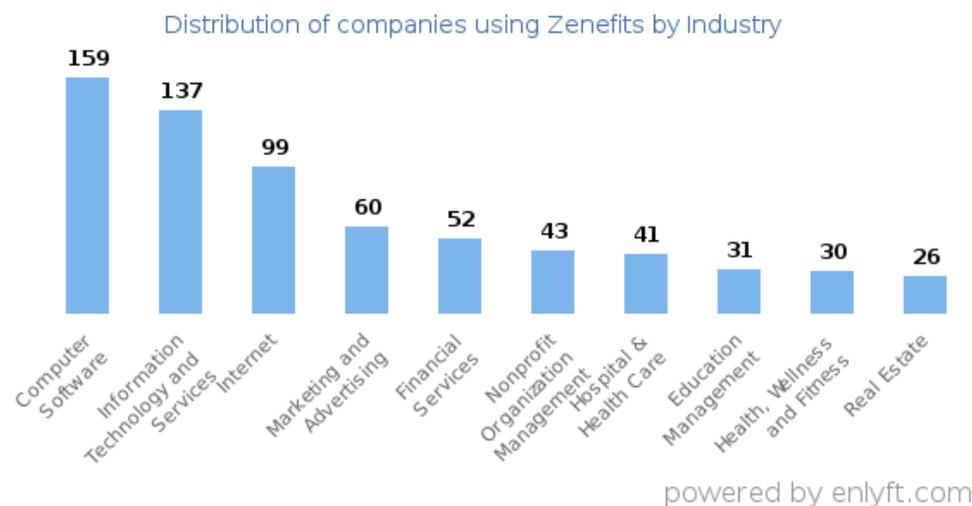


Image 5

<https://enlyft.com/tech/products/zenefits>

Image 5 shows us the users of Zenefits by industry. Computer Software (12%), Information technology and services (10%), Internet (8%) are the larger segments. Also this cloud – based software are used by other industries like Marketing and advertising, Financial Services, Non profit organizational management, Hospital and Health care, Education, Real Estate and others.

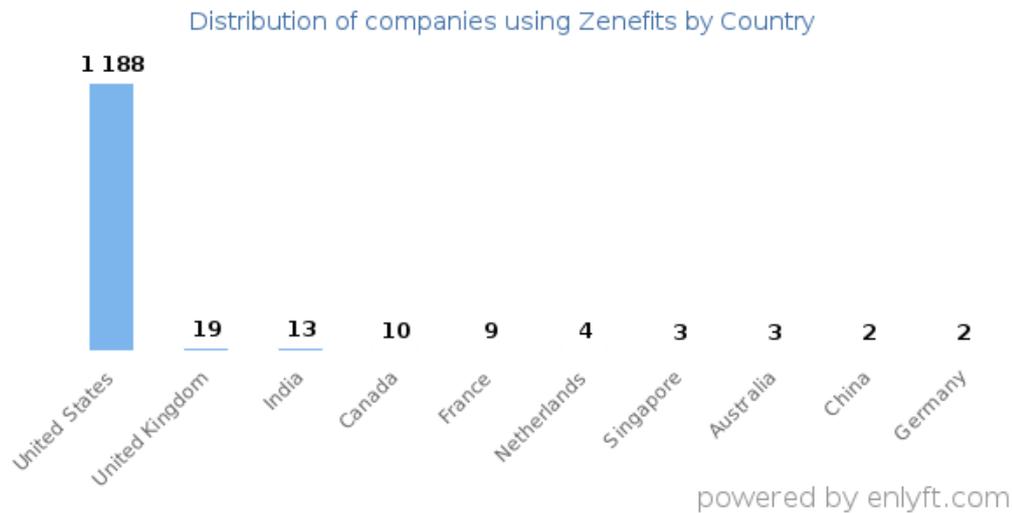


Image 6

<https://enlyft.com/tech/products/zenefits>

United States are larger users of this platform with 91%, but also other countries are starting to use this platform like United Kingdom, India, Canada, France, Germany, Australia, China and other countries.

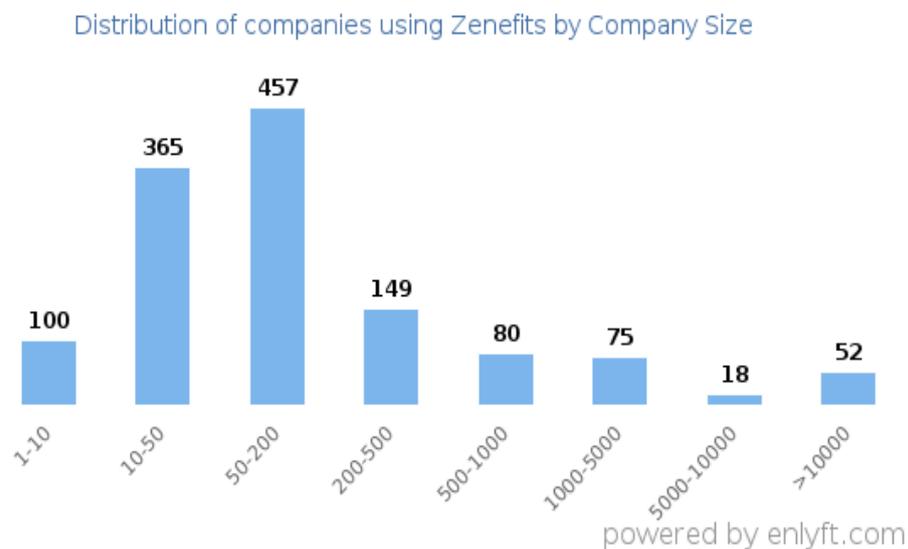


Image 7

<https://enlyft.com/tech/products/zenefits>

Of all of the customers that are using this cloud based software, a majority (52%) are medium sized companies, 11% are large companies with more than 1000 employees and 36% are small companies with less than 50 employees.

3.c. Recrutee app

Recrutee is an award-winning collaborative hiring application which offers an intuitive design and can help to streamline the hiring activities and manage employees more efficiently. This app is used by more than 600 companies including Vodafone, Red Bull, Evbox and others. This app offers drag and drop user interface that is fully brandable and customizable and it enables users to create custom page for each job opening. Also this app integrates job promoting, talent sourcing and applicant tracking. This software is quickly becoming the industry standard for fast growing SMBs around the world. Recrutee allows users to create career sites, with an easy to use employer branding editor, and allows you to find best places to promote your job with free or paid options.

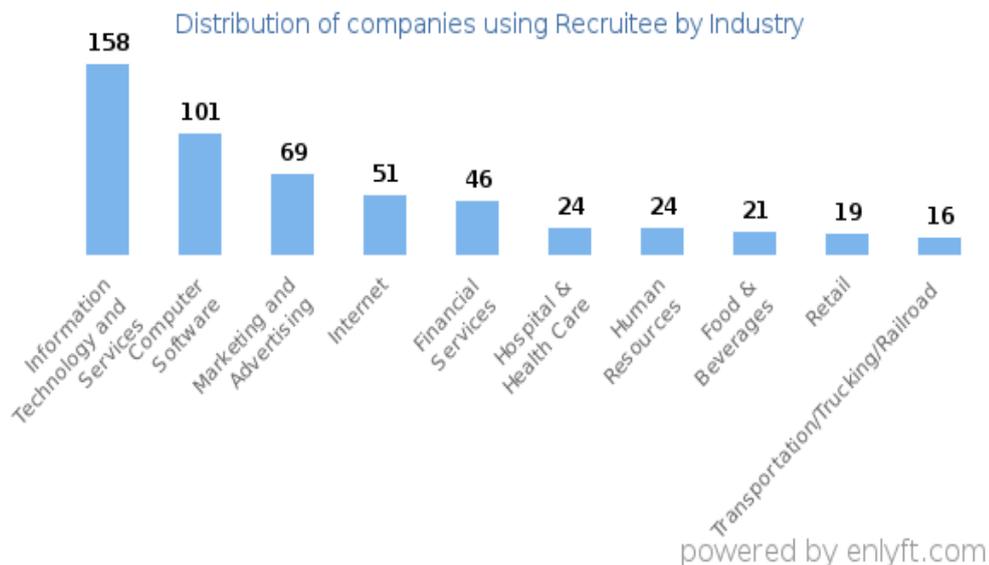


Image 8

<https://enlyft.com/tech/products/recrutee>

This software, as is shown on the image 8, is used by Information Technology and Services with 16%, Computer software 10%, Marketing and advertising 7 %, Internet 5% and other industries with a small percentage as Financial Services, Hospital and Health care, NR, Retail, Food and other industries.

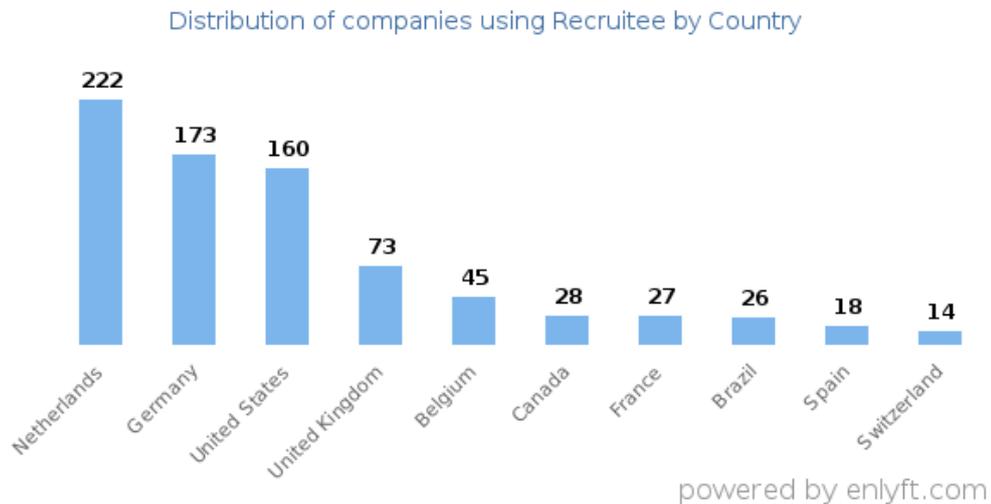


Image 9
<https://enlyft.com/tech/products/recrutee>

22% of Recrutee customers are in Netherlands, 17% are in Germany, 16% are in the United States, 7% are in the United Kingdom, and with minor percentage from Canada, Belgium, France, Brazil, Spain, Switzerland and much more.

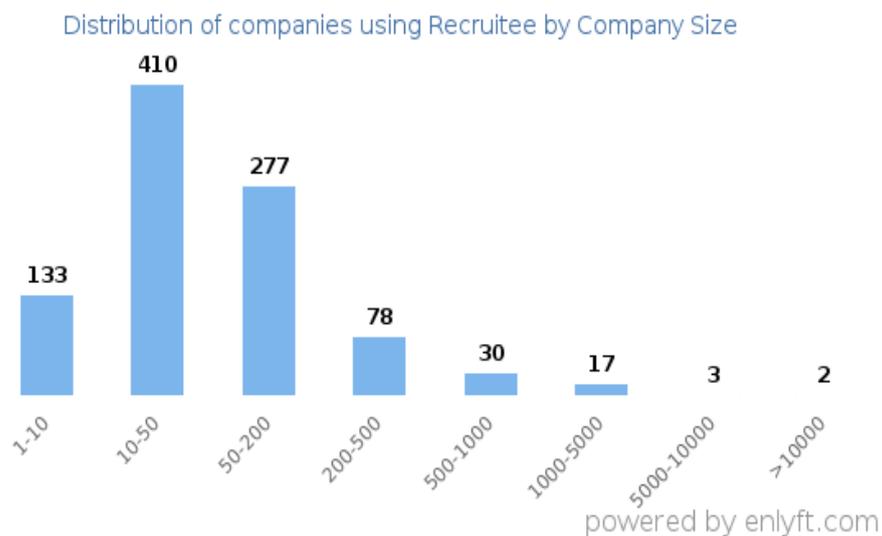


Image 10
<https://enlyft.com/tech/products/recrutee>

Of all the customers that are using Recrutee, a majority (56%) are small sized companies with less than 50 employees, 4% are large companies with more than 1000 employees and 39% are medium sized companies.

When under the threat, our first reaction is generally to call upon the flight mechanism. Successfully dealing with the threat requires rapid movement and

often agility and resilience. An agile management system consists of a proactive management style that deploys human resources efficiently to adapt quickly to positive changes in order to meet customer needs, (Crocitto and Youssef 2003;). Organizations, even as they deal with the challenges of the here and now, are putting into place plans for their post-COVID recovery. Transforming their talent models and digitizing their talent value chains will be a big focus area. (Jeanne Meister, 2020)

4. Conclusion

We are a generation of an advanced postmodern society where virtuality is a particularly current segment, an era of transformation in all segments of society, namely: socioeconomic, cultural, and political or in general the overall existence of humanity, whereby it receives a completely different essence. As we approach deeply in the era of technology and digitalization, the whole human living has changed. We are the witnesses of the era of futurism where all of our living is and will be on the level of imagination. If something was Science Fiction 3 decades ago, well we are in that matrix now. Technology has brought about the beneficial transformation that is required in the HR department. HR management has been changed so far, and it will be changed as I clarify in this paper, with such new applications, platforms and systems. Moving forward in this e – HRManagement level is a profound essence of new paradigm of how the management of things are functioning. However, we should keep in mind that technological revolutions can't compete with humans. Some roles and tasks are better off done by humans. While this is true, technology is still important to businesses and all aspects of living, because like it or not, we are part of it.

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MODELING AND SIMULATION OF THE BUSINESS
PROCESS

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Zoran Vasileski⁴

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Abstract

In this paper we have addressed the impact that modeling and simulation has on business processes on the productivity of service and manufacturing enterprises.

The main objective of this paper is to provide a general understanding of all the analytical tools that can be stored to model, simulate and analyze, as well as ultimately design business processes. We believe that the most flexible and secure of these tools, though not always the most convenient, is the simulation of controversial events.

The wide range of approaches covered in this paper includes graphical flow chart tools, defining models for cycle time analysis and capacity decisions, and sequential analytical methods as well as data extraction. The focus of the paper is on business processes as opposed to production processes or general operations management problems, and its emphasis on simulation modeling using condition. - software for commercial art simulation. Essentially, Business Process Modeling, Simulation, and Design can be thought of as a hybrid between traditional concepts on process management, operations management, and simulation. In our experience, the simulation particularly tends to be pushed aside simply because it is perceived to be very technical.

The rapid development of user-friendly simulation software with graphical user interface has made the use of simulation accessible even to those without computer programming skills and provides an excellent tool for illustrating and understanding the implications of capacity constraints and random changes for process performance.

Key words: Modeling, Simulation, Business Processes, Enterprises Software

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1. Introduction

The flourishing of competition in an increasingly global market leaves no room for successful companies to harbor internal inefficiencies. Most importantly, that customers are becoming more demanding and if a product or service does not meet their expectations, there are many more to choose from. Shares are high, and so is the penalty for unsatisfied customers with the right products and services. The pursuit of internal efficiency and external effectiveness means that organizations need to align their internal activities and resources with external requirements, or in other words, business processes need to be appropriately designed. To this end, the main objective of this paper is to provide a full understanding of the wide range of analytical tools that can be used to model, analyze and ultimately design business processes. Special attention is paid to the simulation of discrete events, as it represents one of the most flexible and powerful tools available for these purposes. However, an important message is to choose tools that are appropriate for the situation in question and simulation is not always the best solution.

Before we talk about the different analytical tools, we need to understand what business processes and process design are all about. For this purpose, we at the beginning of the paper provide a general discussion and definition of business processes and business process design as well as simulations. Important concepts include process hierarchies, process architecture, and incremental process improvement versus process design. Furthermore, an important distinction is made between the activities of designing a process and implementing design and simulation of business processes.

The importance of business process design to the overall business performance and business strategy of the organization. An interesting question is why in the first place there are inefficient and inefficient business processes.

Important issues of process management and improvement, including the challenges of implementing and managing change, are then addressed, followed by the structuring of business process design projects. This can be interpreted as a guide to business processes that focus on tools and modeling.

1.1 What is a business process?

From a pragmatic point of view, a business process describes how something is done in an organization.

Let's start by splitting the words business and process. Most people would probably say that they have a clear idea of what a business is. In broad terms, we will define a business as "an organizational entity that distributes resources to provide customers with the desired products or services."

This definition serves our purposes because it includes firms and supply chains that maximize profit, as well as non-profit organizations and government agencies.

Transformation can be of many different forms, but a broad classification into four different types is commonly used:

- Physical, for example, the transformation of raw materials into a finished product location, for example, transport service provided by an airline,
- Transactional, for example, banking and the transformation of cash into shares by a brokerage firm,
- Informative, for example, the transformation of financial data into information in the form of financial statements.

The simple transformation model of a process presented in Figure 1. is a powerful starting point for understanding the importance of business processes. However, for the purposes of detailed analysis and design of the transformation process itself, we need to go further and look behind the scenes, inside the "black box", the types of processes, the process hierarchies, and process architecture determinants.

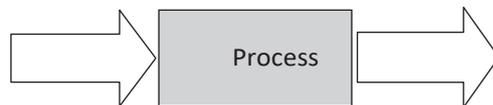


Figure 1. Transformation model of a process.

In terms of process design, cross-functional business processes that are essential to the organization and involve a significant amount of non-productivity activities often offer the greatest potential for improvement. Essential processes are defined (Cross et al. 1994) like all the functions and sequence of activities (regardless of where they reside in the organization), policies and procedures and support systems needed to meet a market need through a specific strategy. A core process includes all the functions involved in developing, producing and delivering specific products or services to specific customers. A fundamental reason why cross-functional processes often offer high potential for improvement over functional processes in general, and production / production processes in particular, is that they are more difficult to coordinate and often suffer from under-optimization. One reason, important for this tendency towards sub optimization is the strong interests of the departments inherent in the functional management structure of the organization.

Additional explanations for the high potential for improving business cross-functional processes:

- Improvements in cross-functional business processes have not continued with improvements in production processes over the years. In other words, the current margin for improvement is greater in non-productivity business processes,
- Residues and inefficiencies are more difficult to detect in inter functional processes than in functional processes due to increasing complexity,
- Cross-functional business processes often devote only 5 percent or less of available process time to activities that add value to customers,

- Customers are five times more likely to take their business elsewhere because of poor service-related business processes than because of poor products.

1.2 The essence of business process design

The essence of business process design can be described as the way we do things in a good way. Good in this context refers to process efficiency and process effectiveness. The last statement is important; process design is about meeting customer requirements in an efficient manner. An efficient process that does not give value to the client is useless. A well-designed process does the right thing in the right way.

From a more formal point of view, business process design is concerned with configuring the process architecture (i.e., inputs and outputs, flow units, network of activities and buffers, sources and structure of information; see Figure 2), so that customer requirements are met efficiently. It should be noted that process clients can be internal or external to the organization. However, it is important that the requirements of internal customers align with the overall business goals, which ultimately means meeting the wishes of the external clients targeted in the business strategy.

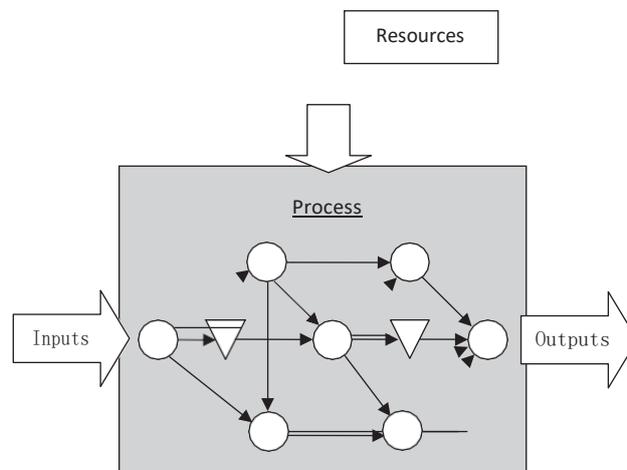


Figure 2. A process defined as a network of activities and buffers with well-defined boundaries transforming inputs to customer-required outputs using a collection of resources.

2 Basic tools for process design

Modeling business processes with the goal of creating effective designs requires more than word processors and spreadsheets. Electronic spreadsheets are useful for mathematical models, but they are less practical in the context of modeling business processes. The tools that are introduced in this chapter help designers check for feasibility, completeness, and effectiveness of a proposed

design. These tools facilitate a better understanding of the processes under consideration and the design issues associated with them. The tools are associated with specific design principles.

Most of the tools presented here assume the availability of key data, such as processing times and the steps required to complete a process.⁵ Therefore, we will first address the issue of collecting relevant data that are needed for the application of the basic tools described here. In manufacturing, tagging of parts is a method that often is used to collect data associated with a process. Tagging is the process of documenting every activity that occurs during a process. The main data collected by tagging methods are processing times. Tagging is done with two data collection instruments, known in the context of business processes as a job tagging sheet and a workstation log sheet.

A job tagging sheet is a document that is used to gather activity information. If performed correctly, tagging gives an accurate snapshot of how a process is completed within an organization. The information that is gathered can give the company many insights to what is happening in a process, including the steps necessary to complete a job as well as the processing and delay times associated with each activity.

2.1 Service System Maps

Service system mapping (SSM) is an extension of traditional flowcharting. It documents how a business process interacts with its customers and the role they play in the delivery of service. The technique was created by Gray Judson Howard in Cambridge, Massachusetts, with the purpose of viewing activities in the context of how they add value to the customers. SSM has the following goals:

- To build shared and consistent perceptions of the customers' experience with the entire core process
- To identify all points of contact between the business process and its customers
- To provide the basis for developing an economic model of the business
- To identify opportunities for improving the effectiveness of the business process
- To provide a framework for designing business processes
- To aid in pinpointing control points and strategic performance measures

Benefits of using SSM for process design include the following:

- *Improved communication:* By providing a graphic representation of the day-to-day processing, a map is usually a significant improvement over written descriptions (one picture is worth a thousand words). A map

⁵ Ami, T. and R. Sommer (2007). "Comparison and Evaluation of Business Process Modelling and Management Tools", International Journal of Services and Standards (3).

reduces the risk of varied and inaccurate representations of current operations and establishes a foundation for effective company-wide collaboration on business process improvements. In other words, SSM helps employees move from the current to the desired state of operations.

Market research focus: By providing an accurate, step-by-step portrayal of points of customer contact from the customer's perspective, a map enhances management's ability to target and focus on areas critical to customer satisfaction. The need to improve understanding of certain aspects of customer contact may suggest further targeted market research.

- *Operations design and process management:* Upstream and downstream effects are easier to identify when additions, deletions, or alterations are made up on a map. A map also allows operations or backroom activity to be viewed in a broader context in relation to the customer.
- *Application of information technology:* Information systems (IS) can be designed from a more strategic perspective using SSM. Not only are the customer contact points, materials flows, and specific activities depicted, but the information flows required to perform key activities also are included. New IS (or enhancements to existing systems) can be designed to link value-added activities in the core process.
- *Critical performance measures focus:* Mapping facilitates the collection of key measures necessary in process redesign. SSM also fosters the development of effective policies, procedures, guidelines, and training programs that help set the context for performance management systems. With a map, a design team can pinpoint the critical measurement points. A broad pictorial perspective facilitates the design of measures to meet the best strategic balance between service quality, product quality, and profitability. Performance measures are most effective when controlling the horizontal flow of work as depicted by the map and when unconstrained by the vertical structure of the organization. The map provides this perspective by depicting all activities in a continuous flow rather than compartmentalizing them by their organizational function.

Although the particular characteristics of a map, including the level of detail, are specific to each application, a general template for SSM exists. This template consists of two main elements: horizontal bands and process segments.

3 Introduction to simulation

From what we saw above we showed how sequential analytical models provide powerful tools for understanding and evaluating sequential processes. However, the use of these analytical models is somewhat limited by their basic assumptions. Constraints relate to the structure of the sequence system, how

variability can be incorporated into models, and the focus on steady state analysis. Because many business processes are cross-functional and characterized by complex structures and variability models, a more flexible modeling tool is needed. Simulation offers this flexibility and represents a powerful approach to the analysis and quantitative evaluation of business processes.

In general, to simulate means to imitate reality in some way. Simulation can be done, for example, through physical models such as wind tunnels, through simulators where pilots or astronauts are trained to interact with a computer in a virtual or artificial reality, or through computer-based models for evaluating a particular technical system. or process design. In the latter case, the simulation software is used to create a computer model that mimics the behavior of the real-world process.

The rapid development of computer hardware and software in recent years has made computer simulation an effective tool for process modeling and an attractive technique for predicting the performance of alternative process models. It also helps optimize their efficiency. Simulation is useful in this context because business process design is a decision-making problem for which the following is true:⁶

- Developing mathematical analytical models in many cases can be very difficult or perhaps even impossible.
- The performance of a process design usually depends heavily on the ability to cope with variability in shredding and processing times (implying the need for a modeling tool that may include some random variables).
- Dynamics is often extremely complex.
- Behavior over a period of time must be observed to validate the design.
- The ability to show an operation animation is often an important way to stimulate the creativity of design teams.

Despite its many virtues, simulation is sometimes met with skepticism by practitioners and managers. Much of the reluctance to use simulation stems from the misconception that simulation is extremely costly and time consuming. This is despite numerous success stories showing that the savings from using simulation to improve process designs have far outweighed its costs. In fact, with the advanced modeling tools currently available, the model development and experimentation phase can last only a few days or weeks, representing only a small fraction of the total project development time. One of the most consuming resource efforts that goes into building a valid simulation model is understanding how the process works.

3.1 Simulation models

Simulation models in general and computer-based models in particular can be classified in three different ways according to their attributes:

⁶ J.A. Sokolovski, C.M. Bank, (2009). *Principles of a Modeling and Simulation: A Multidisciplinary Approach*, Wiley.

- Static or dynamic,
- Determinant or stochastic,
- Discrete or continuous.

A static model is used when time does not play a role in the current system. For example, the model of a bridge does not depend on time. A determinant model is such that the results are fully determined once the inputs are known. Take as an example a computer model for calculating the water pressure of a network of pipes. The pressure is known as the designer chooses the pipe diameters for all pipe segments. A discrete model considers that individual units (i.e., transient entities of the system) are important. Most production, service and business processes are discrete. Business processes are generally represented as computer-based dynamic, stochastic, and discrete simulation models.

A computer-based simulation model is an abstraction of the current business process, represented on the computer as a network of connected activities and buffers (or equivalently, a network of sequential base systems) through which jobs or clients flow. To provide an accurate representation of the process, the model must also capture the various resources and inputs needed to carry out the activities.

Modern simulation software in a sense combines the descriptive power of symbolic models with the quantitative power of analytical models. It provides graphical representation of the model through graphical interfaces as well as graphical illustration of system dynamics through graphs of output data and animation of process operations. At the same time, it enables the evaluation of quantitative performance measurements through statistical analysis of output data. The main disadvantage of simulation is the time spent learning how to use the simulation software and how to interpret the results.

To summarize, the following are some of the key attributes that make simulation powerful:

- Simulation, like analytical modeling, provides a quantitative measure of performance (e.g., resource usage or average waiting time),
- Simulation, unlike analytical and symbolic models, is able to take into account any complex system variation and statistical interdependence,
- The simulation is able to detect inefficiencies that are not usually detected until the system is up and running.

An interesting difference between a simulation model and an optimization model is that simulation is a tool to evaluate a particular design, and an optimization model is a tool used to look for an optimal solution to a decision problem. That is, a simulation model is descriptive in nature, and an optimization model is descriptive in nature because it provides an optimal solution, describing a course of action for users.

3.1 Monte Carlo simulation

A model is an abstraction whose simplifying assumptions help us understand the complexity of a real system. Within the large spectrum of modeling paradigms, mathematical models are the most commonly used for

decision making in business. For instance, decisions regarding new products or services are often made based on profitability. The mathematical model to calculate profit is relatively simple:

$$\text{Profit} = \text{Revenue} - \text{Cost}$$

Both revenue and cost could be treated as known quantities if it is assumed that good predictive models are available to estimate their values. Basing decisions on expected values has some severe limitations. The most important one is that it ignores risk, which is typically defined as *the likelihood of an undesirable outcome*. Assessing risk entails evaluating both the probability that an undesirable outcome will occur as well as its severity. The uncertainty of an outcome on its own does not mean that a decision is particularly risky. For example, purchasing a drink from a machine carries the risk that the machine will not deliver the product. However, most people would not consider the decision of inserting money into a soft-drink machine to carry great risk. First, past experiences indicate that it is likely that the machine will deliver. Second, the loss if the machine does not deliver is relatively small for most people. This indicates that the risk involved is a function of both the probability of what is undesirable and the loss associated with it.

3.2. Discrete-Event Simulation

Business processes usually are modeled as computer-based, dynamic, stochastic, and discrete simulation models. The most common way to represent these models in a computer is using discrete-event simulation. In simple terms, discrete-event simulation describes how a system with discrete flow units or jobs evolves over time. Technically, this means that a computer program tracks how and when state variables such as queue lengths and resource availabilities change over time. The state variables change as a result of an event (or discrete event) occurring in the system. An important characteristic is that discrete-event models focus only on the time instances when these discrete events occur. Therefore, in a short period of time, a computer can simulate a large number of events corresponding to a long real-time span.

To illustrate the mechanics of a discrete-event simulation model, consider an information desk with a single server. Assume that the objective of the simulation is to estimate the average delay of a customer. The simulation then must have the following state variables:

- Status of the server (busy or idle),
- Number of customers in the queue,
- Time of arrival of each person in the queue.

As the simulation runs, two events can change the value of these state variables: the arrival of a customer or the completion of service.

The arrival of a customer either changes the status of the server from idle to busy or increases the number of customers in the queue. The completion of service, on the other hand, either changes the status of the server from busy to

idle or decreases the number of customers in the queue.

3.3 Developing a Simulation Model-Principles and Concepts

Apart from exploring process modeling in Extend Sim, this chapter also discusses important general concepts and principles for modeling and simulating of business processes.

Turning to the Extend Sim software, a first observation is that it is not industry specific. Thus, it can be used to model and simulate discrete-event or continuous systems in a wide variety of settings ranging from production processes to population growth models. For the modeling and simulation of business processes, it is the discrete-event library `Item.lib` that contains most of the needed functionality. However, the libraries `Value.lib` and `Plotter.lib` also contain features that are needed to build realistic models. The former contains tools for data processing and statistics, and the latter contains tools for displaying results graphically. Functionality from these three Extend Sim libraries will be used throughout.

The best way to learn the material discussed in this chapter is in front of a computer. Students should install Extend Sim and open the application to either create the models shown in this chapter or review the models that are available on the website.

The development of a simulation model entails the following steps, which may be more or less accentuated and challenging depending on the context:⁷

1. Determine the goals of the model,
2. Understand the process to be modeled through the use of basic analysis and design tools, such as flowcharting,
3. Draw a block diagram using the appropriate blocks in the available libraries to represent each element of the model accurately,
4. Specify appropriate parameter values for each block,
5. Define the logic of the model and the appropriate connections between blocks,
6. Perform careful model verification and validation,
7. Add data collection and graphical analysis capabilities,
8. Analyze the output data and draw conclusions.

A simulation model in Extend Sim is an interconnected set of blocks. A block performs a specific function, such as simulating an activity, a queue, or a pool of resources. An item is a process element that is being tracked or used. For example, items being tracked (transient entities) could be jobs, telephone calls, patients, or data packets. Items being used (resident entities) could be workers, fax machines, or computers. Items are individual entities and can have unique properties (for example, a rush order versus a normal order) that are specified by

⁷ M. Laguna, J. Marklund (2019), *Business Process Modeling, Simulation and Design*, Third edition, Chapman and Hall.

their attributes and priorities. An item can only be in one place at a time within the simulation model. Items flow in a process and change states when events occur. For example, a server could change from idle to busy when a customer arrives.

Conclusions

Business processes describe how things are done in a business and encompass all activities taking place in an organization, including manufacturing processes as well as service and administrative processes. A more precise definition, useful for purposes of modeling and analysis, is that a business process is “*a network of connected activities with well-defined boundaries and precedence relationships that uses resources to transform inputs to outputs with the purpose of satisfying customer requirements.*” Depending on the organizational scope, a business process can be categorized hierarchically as cross functional, functional, or individual; typically, cross-functional processes offer the greatest potential for improvement.

The essence of business process design is to determine how to do the right things in the right ways. More formally, business process design can be described as a configuration of the process architecture (i.e., the inputs and outputs, the flow units, the network of activities and buffers, the resources, and the information structure) so as to satisfy external and internal customer requirements in an efficient way. In this context, it is important that the requirements of the internal customers are aligned with the overall business goals, which ultimately boils down to satisfying the desires of the external customers targeted in the business strategy.

A linkage between overall business performance and business process design can be made through the fundamental need for any business, profit maximizing or not, to satisfy and attract customers while maintaining an efficient use of resources. For a nonprofit organization, this is a necessity for survival, because it enables the company to continue fulfilling its purpose. For profit-maximizing organizations, the ability to reach the overarching objective of generating long-term profits and returns above the cost of capital is contingent on the firm’s long-term ability to maximize revenues and minimize costs. In the long run, this requires well-designed business processes. Similarly, in developing a business strategy, business process design is an important vehicle for linking the internal capabilities with the external opportunities. This allows the company to achieve a strategic fit between the firm’s desired competitive position in the external market and the internal capabilities necessary to reach and sustain this position.

Finally, we discussed the fact that the emergence of inefficient and ineffective processes is inherent in most organizations simply because they must adjust to changes in their internal and external environments. These incremental adjustments, which usually make good sense when they are introduced, at least locally, tend to accumulate with time and create inefficient structures. On the other hand, another common reason for inefficiencies is the inability to take

advantage of new design enablers such as IT, and automating old work processes instead of using the new technology to do things in new ways. This is why we have emphasized that inefficient and ineffective processes usually are not designed; they emerge as a consequence of uncoordinated incremental change or inability to take advantage of new design enablers.

We also have described the basis for Six Sigma and BPR, two of the most influential improvement programs developed in recent years. Both have a process orientation and to various degrees, center on the principles for process management. The importance of distinguishing between process design and implementation, as well as between evolutionary and revolutionary change tactics as means to carry out the implementation, has also been explored. We have also noted that modern BPM is characterized by a consolidation and synthesis of all these principles, programs, and tools combined with an IT perspective.

The importance and power of adopting a process view point directly to the weaknesses of the functional organization in terms of coordination and transparency across functional areas. The lack of coordination and the tendency to focus on internal functional goals, in less than perfect alignment with the overall organizational objectives, makes the functional organization prone to suboptimization. As a remedy, the process view, with its focus on horizontal workflows, emphasizes coordination and customer needs. In terms of people management, adopting a process view means that the process structure needs to be made clear to everyone involved. Creating a better understanding of how each individual's contribution fits into the big picture encourages involvement and participation, which are cornerstones in modern quality management and stepping-stones for successfully empowering the workforce.

Variability in the time that it takes to perform certain activities as well as in the demand for these activities is an important concern when designing business processes. This variability causes unbalanced capacity use over time. This in turn manifests itself through queues and their associated non-value-adding waiting times. The economic implication is that the process design team is faced with the problem of balancing the cost of acquiring additional capacity against the cost of poor service.

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BRAND PERSONALITY AS A MARKETING CONCEPT

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Abstract

Today, as business becomes more and more challenging, brands have turned out to be the main assets of many companies. Fierce competition in the market forces companies to differentiate their products from those of competitors. Since it is extremely difficult to create this differentiation based on the functionality attribute of products, companies are beginning to create personas for their brands in order to be more attractive to consumers. Brand personality is defined as "the set of human characteristics with which consumers describe brands" and it is argued that a well-designed brand personality can lead to market differentiation.

The main aim of the paper is to present the brand personality through elaborate literature in this field, to show that the brand personality has become an integral part of the theories and practices of marketing. Methodological shortcomings from previous studies are also highlighted. Through the analysis of various researches conducted, it is shown that brand personality research is significant and useful in practice because it gives a very precise picture of the current state of individual brand characteristics, unlike classic brand research.

Keywords: Brand Personality, Marketing, Customers' perception.

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1. Introduction

Increasing globalization, fierce competition and smart consumers significantly complicate marketing practices and create challenges for brand managers. In today's markets it is becoming more difficult to create new products with different features, and there is brand proliferation as the number of brands for the same product category increases. In such an environment, brand management, through the affective use of brand image and brand positioning, becomes extremely important. As a major component of brand image, brand personality is the most valuable way to create brand differentiation and thus consumer preference and loyalty.

The concept of brand personality has attracted much attention among marketing theorists and practitioners. Because of the many discussions on this topic, many characterize it as a "hot topic" in marketing. Brand personality research has significantly enriched the knowledge of the relationship between consumers and brands, pointing out the importance of knowing this concept, as well as the effect in practice of using the obtained results of brand personality research. But despite the fact that there are many studies on this topic, they do not make a distinction between what is a brand personality and what is not. The view in this paper is that the reason lies in the fact that this topic requires researchers with a good knowledge of marketing and psychology. Much of the research in the articles is based on studies by Plummer and Jennifer Aaker who have made significant contributions to this area of marketing. Some of them went further by noticing and highlighting certain methodological flaws, especially in Aaker's study resulting in frequent methodological errors and in more recent studies on the subject.

This paper clarifies the meaning of the term "brand personality" and shows how brand personality has become an integral part of marketing theory and practice.

2. Origin and definition of the term brand personality

Brand personality theory is important element of branding theory, and an extensive body of literature has been devoted to the examination of the concept. The first mention of brands having personalities dates back to the 1950s (Gardner and Levy, 1955), as a novel metaphor for intangible brand attributes. Aaker (1997) and Fournier (1998) were the first to explicitly introduce animism and anthropomorphism theory as an explanation for the humanlike brand. In addition, Aaker and Fournier also imported theory and methodology from human psychology, with the implication that the animism and anthropomorphism of brands explained the relevance of the importation (Avis et al, 2012, pp.311-331). According to the theory of animism, consumers anthropomorphize objects to facilitate communication with the environment (Puzakova, Kwak and Rocereto, 2009, p.413). Wells et al are the first among researchers made a list of adjectives that describe products (Wells, et al., 1957, p.317). Consumers buy specific brands in order to use them to express their own identity or image (Fournier, 1998, p.343). Such observations introduced the concept of brand personality into

marketing. Marketing practitioners and advertisers were the first to "coin" the term brand personality, long before theorists began to be engaged in its study. As early as 1958, Martineau used this term to denote the intangible the symbolic dimension that makes up the point of sale special - his character. The importance of brand personality in advertising was highlighted by David Ogilvy back in 1953, arguing that marketers must decide what kind the image they want their brand to have. "Image means personality", he said. "Products, just like people, have their own personality", which makes them the market can make or break it completely. Name, packaging, price, advertising method, as well as the nature of the product - all together contribute to the creation of the brand's personality. (Ogilvy, 1985, p.14; cited in: Stein D., 2004, p.1-2). Biel (1993) notes that the emotional characteristics of brand image, such as brand personality, are often far more differentiated because they are less constrained by the physical attributes of the products. In relation, brand personality has longevity, possessing more enduring value. He suggests that brand personality requires consumers to process the brand's image more actively in a personally meaningful way. Both practitioners and researchers have long recognized that brands, like humans, have distinct personalities that may differentiate them in the minds of consumers (Plummer, 1984, pp.27-31). Brand personality may also influence consumers' preference (Sirgy, 1982, pp.287-300).

Batra, Lehmann and Singh (1993) define brand personality as how a consumer understands the brand in dimensions that typically capture a person's personality. According to these authors, there are many concepts of brand personality, as is the case with the construct of a human personality. Brand personality is conceived and operationalized in this study as per Aaker who describes brand personality as "the human characteristics associated with a brand" (1997:347). Aaker developed a scale to measure brand personality. The scale has been used widely in research on brands and the method and theory has also been a foundation for the development of new measures of brand personality (Bosnjak et al., 2007). The term "characteristics", however, makes this definition too broad and vague. It could potentially lead, at the time of measurement step, to include specific items, not appearing in any measurement scale of the human personality (Ferrandi et al., 2003). Very similar definitions were given by Azoulay and Kapferer, according to which "brand personality represents a set of human traits that are meaningful and applicable to brands" (Azoulay&Kapferer, 2003, pp.143-155). Ambroise et al. (2003) therefore propose to define the brand personality as "all human personality traits associated with a brand". It is relevant to consider Aaker developed this theoretical framework taking into account the Big Five human personality dimensions. As known Aaker proposes a measurement scale of brand personality based on 5 dimensions (Sincerity, Excitement, Competence, Sophistication, and Ruggedness), and 42 traits.

In practice, the creation of brand personalities has come to life since when created characters and celebrities started to be used as brand promoters. We can say that marketing practitioners have been using this construct for decades, although not so much was said about the term "brand personality". The famous Michelin Man was also introduced in 1894 at the exhibition in Lyon. Marlboro Men, like the most successful example of creating a brand personality, in 1954

was created by the Leo Burnett agency, and at that time the concept of "brand personality" did not yet exist in theory. The same case is the Hathaway man (man with a blindfold on the eye), which was created in 1951 by David Ogilvy for manufacturer of men's shirts (Starcevic, pp.149-172).

Although the idea of brand personality has been presented for decades earlier, it did not become popular until the early eighties years of the 20th century, and there is a great wave of research launched at the end of the nineties, when Jennifer Aaker published its study, which will be talked about in this paper. According to American Marketing Association (AMA), brand personality is the "psychological nature of a particular brand as intended by its sellers, though persons in the marketplace may see the brand otherwise (called brand image). These two perspectives compare to the personalities of individual humans: what we intend or desire, and what others see or believe".

3. Effects of Brand Personality

From the moment it first appears on the market, the brand acquires a character and the personality of the brand and can be identified if there is a desire to make a comparison between the brand and the personality. J. Aaker (1997) argues that the symbolic use of brands is possible because consumers generally complement it the brand with human personality traits. D. Aaker (1998) describes product-related features (category, packaging, price and functional attributes) and lists a range of non-product-related features (image of a typical user, age, country of origin, company image, advertising style) as sources of product personality development. Research in the field of consumer behavior shows how brand personality allows the consumer to express the image he has of himself (Ferrandi, Merunka, Valette-Florence&De Barnier, 2002).

Vazifehdost's (2017) study focuses on the impact of two antecedents of five personality traits of retailer on trust and attitude toward the private brand, as well as on one major consequence of these three concepts, loyalty to the retailer in Iranian industry of food. The results of the collected data indicate that private brand trust has a significant influence on the retailer personality traits as "conscientiousness" and "sophistication". Trust and attitude toward the private brand have a significant influence loyalty to the retailer while retailer personality traits have no influence on this variable.

Shank and Langmeier (1994) showed that perceived brand personality can go beyond and be independent of the consumer's personality. Research shows that when there is a congruence between a brand's perceived personality and a consumer's self-concept, there is a more favorable attitude toward the brand, trust, and affection toward it. According to Fournier (1998), a brand's personality is visible through its behavior (marketing actions and decisions), suggests a kind of commitment to the consumer, which according to Brakus, Schmidt and Zarantonalo, (2009) the social and self-expressive characteristic of the brand personality can consider its participation as a precursor to satisfaction and loyalty. In some more recent studies, a scale for measuring brand experience and brand testing is proposed where, through the application of a structural equation, the

direct effect between the experience and perception of the brand and the strength of the brand personality can be indicated, which in turn has a direct effect on customer satisfaction and loyalty (Muniz&Marchetti, 2012). At the same time the attribution of human characteristics to inanimate objects appears to be an universal phenomenon (Brown, 1991). This process is very interesting both for marketing academics and managers because the comprehension on how human perceive products, brands, stores in terms of human features impacts on the planning and execution of marketing operations.

4. Measuring Brand Personality

In consumer behavior research since the eighties and nineties of the 20. century, considerable attention has been devoted to the study of brand personality. While researchers have primarily focused on which brands enable consumers to express their image (Belk, 1988; Sirgy et al., 1991; Kleine et al., 1993), practitioners have seen brand personality as something that creates a key difference in relation to other brands in the category (Geuens, Weijters and de Wolfe, 2008, p.2). But despite the great interest in this topic, there was no agreement on what exactly a brand personality is. Because of the abstractness of the concept, several measures based on different techniques have emerged. Even today there is no universally accepted measure of brand personality.

4.1 The first techniques for measuring brand personality

Several attempts have been made to measure brand personality associations through qualitative and quantitative techniques. Qualitative methods and techniques are used in them, primarily association tests and projective techniques, mainly associated with the brand image, and in it the brand personality. Advertising agency Young and Rubicam started using projective techniques several decades ago, in order to create a so-called brand profile that consisted of essential elements of the brand's personality. According to Plummer (1984, p.27) the respondents were asked to associate the brands with objects, occupations, animals and were suggested to imagine as if they were inside the skin of the brand, thus obtaining a rich description of the brands. Quantitative techniques, on the other hand, compensate for some of the shortcomings of qualitative techniques, such as the impossibility of statistical analysis. Researchers have "borrowed" certain quantitative techniques from psychology, primarily the Likert scale, to measure brand personality. Qualitative techniques have never been abandoned, because their combination with quantitative techniques is often needed. In order to sort out the numerous personality theories that are created during the last century, six general ones were singled out approaches in the study of personality: 1) psychoanalytical approach, 2) trait approach, 3) biological and genetic approach, 4) humanistic or phenomenological approach, 5) approach behavioral or behaviorist approach and 6) cognitive approach (Hogan R., 1997, p.12). Researchers who first tried to measure personality brand used two types of scales: Ad hoc and Psychological scales (Thomas, Sekar, 2008, p.50).

4.2 A brief description of the development methodology

brand personality model Jennifer Aaker

J. Aaker (1997)'s research established a theoretical framework for the construct of brand personality, operationalizing the concept and determining a number of dimensions that make up brand personality, describing the nature of these dimensions as a set of personality traits. To construct a scale to measure brand personality, J. Aaker (1997) made use of the psycholexical approach. This approach states that the numerous attributes used to describe human personality can be described by a limited number of classes or latent dimensions, using factor analysis measurements that reveal, in the case of human personality, a structure that is generally composed of five major factors (a model known as the Big Five human personality dimensions).

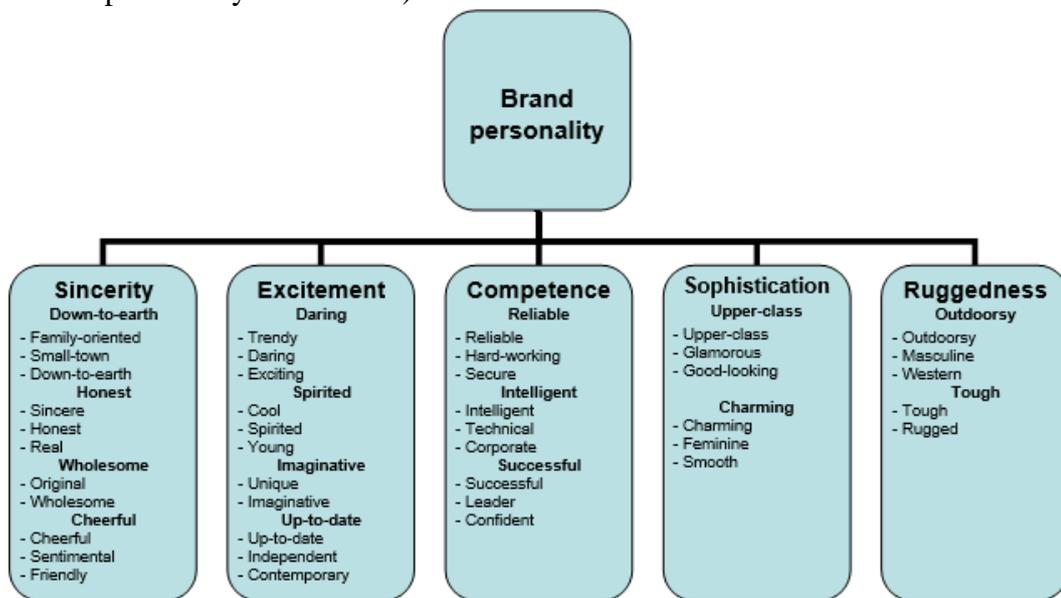


Figure 1. Brand Personality Scale.

Source: Aaker, J. (1997). Dimensions of brand personality (p.352). Journal of Marketing Research, 34(3), 347-356

J. Aaker (1997), as a result of her study, identified five large brand personality dimensions: sincerity, excitement, competence, sophistication and ruggedness. Thus, a reliable, valid and generalizable measuring scale was created in the American context, facilitating further study of other matters concerning brand personality. Figure 1 describes the five dimensions, fifteen facets and forty-two traits that make up the brand personality scale in the American context. J. Aaker (1997) also states the need to test and/or develop scales for understanding the symbolic use of brands in other contexts in different cultures. Although human personality dimensions show ruggedness when applied to other cultures, the same cannot be said for brand personality because of the differences between the antecedents of the two constructs (J. Aaker, 1997).

The Brand Personality five-factor model has not been without criticism. An article by Azoulay and Kapferer (2003) criticized the definition of J. Aaker

(1997), mentioning that her very global scale and operational definition are erroneous, going beyond personality in itself and mixing other dimensions of brand identity that should be kept separate in the theoretical context and practical use; such as skills, gender and adjectives that involve social class, for instance. Avis (2012) presents a broad critique on factor models in which he argues that: "Despite the ongoing evolution of BP factor models there remain three key problems in the current research: the category confusion problem, the domain adjustment problem, and the descriptor selection problem".

5. The important of brand personality creation in marketing

Today, it is very difficult to achieve brand differentiation in the eyes of consumers. Brand personality is considered one of the most important dimensions of brand identity, differentiating brands from each other and positioning them in the market in an appropriate way. She is unique and as Starcevic says, she cannot be copied just like another person cannot be copied (2012). Upshaw says that, "brand personality allows the consumer to relate to the brand more easily because it is much clearer than positioning, more alive than the physical attributes of the product, and more meaningful than what the brand name means" (Upshaw, 1995, p.151). On the other hand, Stein says that building a unique brand personality is a long-term investment that increases brand equity (Stein, 2004, p.24). Many researchers have addressed the impact of brand personality on consumer behavior and marketing outcomes, and their research has shown that brand personality has a strong influence on brand preference, purchase intentions, brand loyalty, and strong consumer-brand association (Oklevik, 2007; Mengxia, 2007), as well as the creation of emotions among consumers, which are the basis of encouraging purchase intentions (Miller, 2008; Chiu et al., 2007). Mengxia points out that different dimensions of brand personalities exert different degrees of influence on the effects of brand personality (Menxia, 2007, p.33). It also depends on the category to which the brand belongs, because the existence or absence of certain personal characteristics can have a positive or negative impact on consumers. It has been shown that consumers often use brands as a means of self-expression so that the brand personality, as a means of differentiation, can "guard" the position in the market (Aaker J. et al., 2004, p.4).

Most research on brand personality has been done on general product categories, such as mobile phones, wine, beer, perfumes, cars, etc. With her research, Starcevic showed that the perception of the personality of mobile operators in Serbia is strongly influenced by the way they are advertised. In the case of Telenor and Vip, it is clearly perceived that the way of advertising is almost mirrored to the experienced personality of the brand and that there is a clearly defined communication platform, than in the case of mt:s. Perhaps the most significant conclusion of the research is that the tool for measuring the personality of the brand, with additional measurement of the other components, is an exceptional diagnostic tool that can have a significant application in practice (Starcevic, 2012, p.168). Donvito et al. in their researches present the validation of the personality congruence measurement scale proposed by the authors; furthermore the research highlights the existence of a correlation between

personality congruence and brand attachment discovering at the same time specific country peculiarities Donvito, 2013).

The topic of employer brand personality has recently been addressed by Slaughter et al. (2004), who first define employer brand personality as a set of symbolic attributes related to a particular employer, following Aaker's they define the brand's personality. Brand personality refers to an individual's perception of an employer's subjective characteristics and signals to job candidates how it would seem to work for that employer (Carpentier et al., 2019). Slaughter et al. (2004) state that the personality of the employer brand is the way in which the organization presents itself to the public with the aim of differentiating itself from the competition.

Akin did research on the Turkish mobile phone market and showed that brand personality has a strong influence on preferences and willingness to pay more for certain brands (Akin, 2011, p.193). Both dimensions (competence and arousal) were shown to have a greater impact on these outcomes. However, research has shown that when evaluating brands, consumers give the most importance to the competence dimension, but this does not necessarily translate to purchase intentions.

Oklevik shows with his research that the personality of the brand affects the formation of attitudes in the functional category of products, which is explained by the fact that most products have multiple roles for the consumer (Oklevik, 2007). Sung and Kim in their study showed that, depending on the product category, different dimensions of brand personalities affect brand trust and induced affective reactions, which subsequently affect the level of loyalty (Sung&Kim, 2007, p.4). Bourdeux and Palmer conducted research on the wine market and found that brand personality explained close to half of the variance in purchase intentions and that certain brand personality traits (in this case success, charm and modernity) have the highest correlation with purchase intentions (Boudreaux&Palmer, 2007, p.170). Miller has shown significant influence with her study of brand personality and brand-evoked feelings (Miller, 2008). Researchers agreed that feelings can be described as positive, warm or negative. Valette-Florence and colleagues separately compared the impact of brand personality dimensions and marketing activities on elements that make up brand equity (Valette-Florence et al, 2009). At the aggregate level, the impact of brand personality dimensions, especially those with positive valence, has been shown to have a greater impact on brand equity than traditional marketing communications. It leads to the conclusion that brand personality is an important psychographic variable in market segmentation and that it is necessary to adapt a performance strategy for each individual segment.

Although a number of studies have focused on the match between consumers' self-concept and general brand image, recent studies suggest that it is better to compare the consumer's self-concept with observed personal characteristics of the brand, rather than image, for more accurate results of the brand in general (Starcevic, 2011). The personality of the brand has a greater connection with the personality of the consumer than the functional characteristics of the brand itself as shown by numerous studies on this topic. The higher the

personal expressive value, the more attractive the product is for the consumer and the easier it is to identify with it (Govers P.C.M. & Mugge R., 2004).

Using brands with similar or desired personal characteristics allows the consumer to show others who they are or want to be. This, on the other hand, gives marketing the opportunity to take advantage of the "uniqueness" of consumers and reach them faster. Brand managers have long recognized the strategic benefit of anthropomorphizing brands and are doing everything to make a better relationship with consumers. But despite the fact that there are many studies on this topic, they do not make a distinction between what is a brand personality and what is not. The view in this paper is that the reason lies in the fact that this topic requires researchers with a good knowledge of marketing and psychology.

6. Conclusion

The main objective of the paper was to present brand personality through elaborate literature in this field, to show that brand personality has become an integral part of marketing theories and practices. The paper also highlighted the methodological shortcomings of previous studies. Through the analysis of various conducted research, it has been shown that brand personality research is significant and useful in practice because it gives a very precise picture of the current state of individual brand characteristics, unlike classical brand research.

In the end, we can say that the personality of the brand is today, rightly, a current topic. Brand personality has long been widely used in practice as a sustainable means of differentiation. A lot of research has been done which led to the emergence of special areas in marketing. However, the general view is that despite the great practical application of brand personality for market differentiation, due to the uneven attitude among researchers and the imprecise definition, not all the benefits of this marketing concept are used.

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STRATEGIC APPROACH FOR DEVELOPMENT OF
INNOVATIONS IN THE COMPANIES

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Abstract

Nowadays, the role and importance of innovation has increased significantly. Modern businesses grow and succeed in today's corporate environment for a number of different reasons. Some are known for their products, others for their services, and still others for less easily defined factors such as strong brand loyalty or captivating advertising campaigns. But it is especially important to say that all companies that achieve greater positive results, implement different types of strategies and are ahead of the competition have one common feature: they all embrace innovation.

To achieve the goal of the paper, a survey of respondents from the Republic of North Macedonia was conducted. The data obtained from the research are descriptively analyzed in order to obtain guidelines for the creation of the innovation process. The research in this paper is based on a scientific approach in order to produce qualitative and quantitative data. Statistical methods were also used to analyze the answers to the questions and create graphic displays in order to obtain relevant data on the conditions in the business environment in the Republic of North Macedonia.

Innovation is about creating new value for the companies and people who are willing to use it and pay to make the process happen. The amount of time, money and effort directed towards innovation and management in both academic and commercial environment has increased significantly. As part of the formalization of innovation as a core business process, the role and importance of innovation strategy comes to the fore in today's dynamic environment. As with all business processes, decisions made and the way processes are implemented are regulated by strategy.

The purpose of this paper is to emphasize the need for innovation in companies. The dynamic market in which companies operate is constantly changing, for this purpose it is necessary for companies to focus their attention on the innovation process.

Keywords: strategy, innovation, company, development, process.

JEL Classification: M21, O31.

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1. Introduction

Innovations are one of the key factors for companies that want to compete more and more in the international and global market. In order to qualify for that capacity, companies must invest in knowledge, structure, research and good strategy to enable them to decide from the start what they want to become.

This paper aims to highlight the importance of the innovation creation process in companies. Innovation is the production, assimilation and successful exploitation of something new in the economic and social environment.

A strategic approach to innovation is a company's process of reinventing or redesigning its corporate strategy in order to incite business growth, generate value for the company and its customers, and create a competitive advantage. This type of innovation is essential for companies to adapt to the speed of technological change. Innovation strategies include the following issues (Sales, 2016):

- ∇ Which products or services should be better developed?
- ∇ Is it necessary to create new products or services in certain markets?
- ∇ Which business models should be developed depending on the needs of the markets?
- ∇ In which markets does the company need to compete?
- ∇ How to optimize business processes?
- ∇ How to expand customer base?
- ∇ How to position the company brand in relation to target customers?
- ∇ How to create a new supply chain?
- ∇ How to make the value chain more efficient?
- ∇ How to choose the right strategy?

The answers to all these questions are found in the creation of innovation. That is, innovation should be at the "core" of how a company should manage the changes that are constantly occurring in the dynamic environment. With the process of innovation, the company achieves a competitive position on the market, and at the same time, it enables a superior experience for employees and managers in companies, as well as increasing the company's profit and achieving positive results (Perry & Montgomery, 2022).

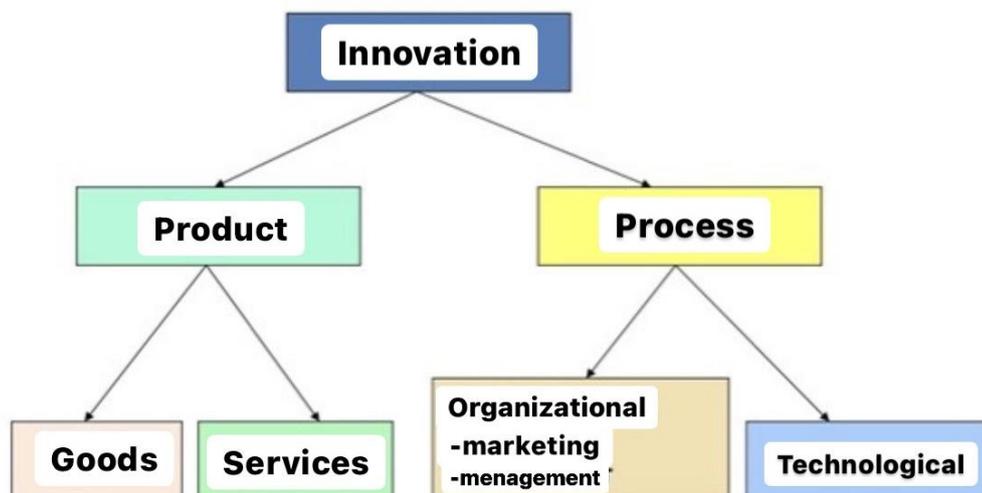
It is also important to mention that the goals that will be achieved with the innovation should not be separated from the overall goals of the company, so that if the measures are observed, the company will gain greater operational efficiency. Innovation is the development of new, unique concepts that support the financial sustainability of the organization, including its mission and the processes for realizing those concepts. The primary goal of innovation is to realize new sources of revenue by improving product value and the way products are delivered to customers. The goal of innovation is to resolve target segment selection, product or service offerings and the revenue model. At the operating model level, the focus is on driving profitability, competitive advantage and value creation (Kylliäinen, 2018).

2.Literature review

An innovation strategy represents a commitment to a common innovation mission and a structured set of activities aimed at supporting the future growth of the organization. If all employees have the same map (and can and do know how to read it), everyone can follow the direction of the destination without arguing about the directions (Innovation, 2019). Thomas Edison is famous for inventing the light bulb, when in reality he just bought a patent, hired someone else to design a better product design, and popularized the use of light bulbs. In other words, he connected some things that already existed and figured out how to make the idea work. Henry Ford is famous for creating the assembly line. Ford had a strategic goal of reducing costs by standardizing its auto parts assembly process. He took many ideas from the gun industry, but when he visited a meat processing plant and saw animal meat being moved along an "assembly" line, he realized he could do the same in reverse to further streamline the assembly of parts on the cars. It represents an idea, built on top of other ideas and is a type of innovation (Perry & Montgomery, 2019).

The examples of Thomas Edison and Henry Ford exemplify incremental innovation, product or process improvement. Innovations have two basic divisions, incremental and radical. Radical innovations represent a total change in the ways in which products are thought of and used, or new products are produced compared to previous series. Therefore, radical innovation involves the innovation of a new product or service or process system. So obviously, improving small changes in existing assumptions can also increase the impact on the organization. Innovation creates a significant change in products or services that transforms an existing market or creates new products or services.

Figure 2.1. Types of innovations



Source: Adjusted by the author,
<http://www.utms.cc/estudent/images/Prezentacii/Fakultet%20za%20menadzment/II%20godina/III%20semestar/Inovaciski%20menadzment/T1.pdf>, accessed 11.01.2021

As we can see in the figure 2.1. products refer to the goods and services offered by companies on the market, while process innovation refers to organizational processes such as marketing, management, accounting, research and development, etc. and the technology available to the company. Every process is characterized by advantages and disadvantages, and so is innovation. Advantages of the innovation process are (Riley, 2021):

- ❖ Improved productivity and reduced costs
- ❖ Better quality of products or services
- ❖ Greater product range
- ❖ Easier solving of environmental issues
- ❖ Higher company value

The risks that may appear in the innovation process are the following (Sherman, 2019):

- ⊗ Competition
- ⊗ Dynamic environment
- ⊗ Higher financial costs
- ⊗ Variable policies
- ⊗ Lack of creativity
- ⊗ An expensive process

Every organization innovates and usually has great enthusiasm for it. There are individuals who truly believe that innovation is important to get their job done. And so they launch well intentioned but very ad hoc innovation initiatives.

Companies such as “Shell” and “Vittelpool”, which were helped to build their innovation capability, started their innovation programs in the 1990s and early this century. They have created a sustainable capability from world-class innovation by staying the course whether the economy is booming or not. For these companies, innovation was not just a project, but a long-term commitment to change the way innovation was practiced. [Smith, A., Voß, J.-P., & Grin, J. (2010). Innovation studies and sustainability transitions: The allure of the multi-level perspective and its challenges. *Research Policy*, 39(4), 435–448. <https://doi.org/10.1016/j.respol.2010.01.023>.]

Simply stated, companies can't afford to stay alive if they don't embrace innovation and change. Technology is constantly proving to be a driving factor in the need for change. Although the natural success that comes with the innovation process can be reward enough for many companies, it would be a mistake to overlook another key advantage: innovation helps an organization differentiate itself and its products from the competition, which can be especially powerful in an over-saturated industry or market.

3. Methodology

In order to achieve the goal of the paper, a survey of respondents from the Republic of North Macedonia was conducted. The data obtained from the research are descriptively analyzed in order to obtain guidelines for the creation of the innovation process. Data collection is an instrument that helps to complete the

research work of information and data, and in this paper the data is obtained based on a structured research survey questionnaire. The research in this paper is based on a scientific approach in order to produce qualitative and quantitative data. The survey questionnaire was conducted in the month of January 2022, while the preparation started in December 2021. The research method by means of a survey questionnaire, with structured questions of randomly selected respondents is a one-time descriptive research and the number of respondents is 178. The survey questionnaire is composed of 24 questions, it is divided into two parts: demographic characteristics and of which the first four questions refer to the demographic characteristics of the respondents, and the other part consists of questions from the field of strategic approach to creating innovations. At the same time, several scientific methods were used, such as: analysis, synthesis and examination method. Statistical methods were also used to analyze the answers to the questions and create graphic displays in order to obtain relevant data about the conditions in the business environment in the Republic of North Macedonia.

4. Strategic development of innovations - research results

The world is progressing at a high speed, and companies should do their best to manage to keep up with the progress. In conditions of constant improvement and development of companies, the process of innovation is something that has become a daily necessity. From that need, employees are hired in companies or teams are formed for easier cooperation for advancement in operations, whose creativity is possible and desirable. The answers from the survey questionnaire aim to contribute to the research of innovations and their impact in the business environment in the Republic of North Macedonia. The main goal of the research is to examine the companies' approach to pushing and accepting changes, that is, how strategic is the approach in encouraging changes and ideas i.e. the development of innovations in companies. The insights obtained through the analysis of the received answers will be useful both for science and for the improvement of business practices applied by business entities. According to the survey conducted in January 2022, the first four questions refer to the demographic characteristics of the respondents, and the remaining questions to the attitudes towards innovations. Data were obtained from 178 respondents, of which 97 respondents or 54.5% are female, and 81 respondents are male or 45.5.

The second question refers to the place of residence of the respondents. The following data have been determined and will be displayed graphically.

According to the data shown, the largest number of respondents is from the municipality of Prilep and the percentage is 37%, in second place according to the number of respondents is the municipality of Bitola and the percentage is 17% and in third place according to the number of respondents is the municipality of Skopje and the percentage is 16%. The percentage is lower from other municipalities and for each one it is from 1% to 3%.

The third question in the survey questionnaire refers to the age of the respondents and the following data were determined and will be displayed graphically.

According to the answers of 178 respondents, the largest number of respondents between the ages of 20 and 30 is 47%, in second place are respondents who are 31

to 40 years old or 30%, in third place are respondents who are from 41 to 50 years old or 14%, in the fourth place are the respondents who are 51 to 60 years old or 6% and in the last or fifth place are the respondents who are over 61 years old or that is only 3%.

The fourth question in the survey questionnaire refers to the level of education of the respondents. In the survey, the following answers were offered: primary, secondary, higher, master's degree, PhD and other.

The highest percentage of respondents have a higher education or 56.2% of 100 respondents. Then there are 40 respondents with secondary education or 22.5%, in third place are masters or 16.9%, that is, 30 respondents and finally 8 respondents declared that they are doctors of science or this percentage is 4.5%.

The fifth and sixth questions are related to each other and refer to the job position in the organization in which the respondents work and the sector in which the organization works. A total of 127 respondents (71.3%) declared that they are employed, 16.3% or 29 respondents declared that they work in the position of managers, the option other was chosen by 10 respondents or that represents 5.6%, 5.1% or 9 respondents declared that they work in the position of director and 3 respondents are currently interns or that represents 1.7%.

Different answers were obtained in question number six because the respondents had to write themselves the sector in which they work, since each organization works in a different sector, the answers are as follows: manufacturing, education, services, health, textiles, food industry, tourism, mining, insurance, agriculture, security, construction, tobacco industry, hospitality, finance, private sector, automotive industry, outsourcing, legal sector, IT sector, artificial intelligence, education, manufacturing industry, public sector, Health and wellness, automation and robotics, investments, mining of decorative stone and stone for construction limestone raw gypsum chalk and slate, Marketing Consulting, development, IT Gaming, sales, educational institution and culture. The respondents work in different sectors and activities and interesting data and information were obtained. From the obtained data it can be concluded that the most represented sectors in the research are: production sector, public sector and education.

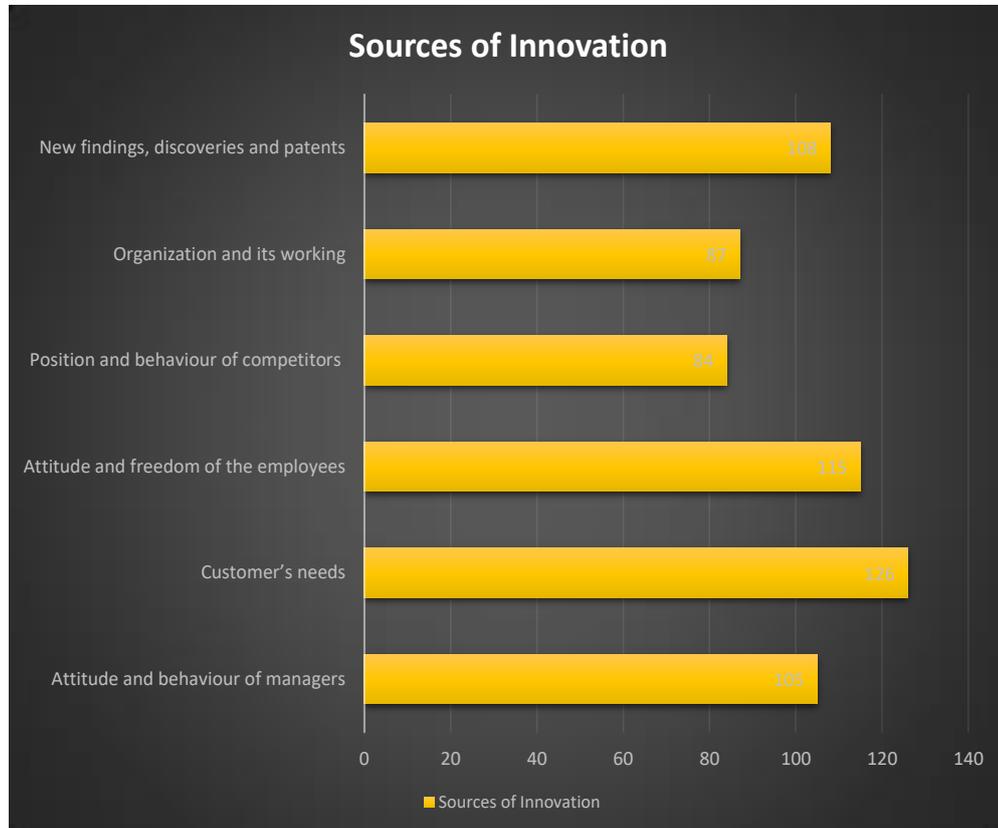
An analysis of the research data shows that the largest number of respondents understand innovation as: generating new ideas, that is, 68% or 121 respondents expressed themselves in this way.

The next option, the production of new products or services, is the percentage of 66.9% or 119 respondents, the third option, the introduction of new processes in the operation, is the percentage of 61.8% or 110 respondents, the option something that will differentiate the organization on the market is 36, 5% or 65 respondents said so and the option other 4.5% or 8 respondents.

From the number of respondents in the Republic of North Macedonia, 67.4% believe that attracting customers is one of the most important opportunities in the innovation process. Next, 53.9% believe that the demands of existing customers should also be met, 47.8% of the respondents believe that the process of innovation will facilitate the process of working in the organization, 46.1% of the respondents believe that the innovation will achieve a greater competitive advantage, 43.8% of the respondents believe that innovation creates a recognizable brand, 40.4% believe that only with a free working atmosphere can

success be achieved in the creation of innovation, 38.2% believe that greater efficiency and effectiveness is achieved and 35.4% believe that the innovation process makes more profit.

Graph diagram no. 5 – Sources of innovation



The highest percentage of the respondents or 70.8% of the respondents believe that the needs of customers are the most important sources for innovation, 64.6% believe that the attitude and freedom of employees influence innovation, 60.7% believe that innovation is hidden in new technical- technological and other business knowledge and/or discoveries and patents, 59% of the respondents believe that the attitude and behavior of managers is of particular importance for the innovation process, 48.9% of the respondents believe that the organization and its operation, i.e. culture and opportunities are of great importance in the innovation process and 47.2% consider that the position and behavior of the competition is also important.

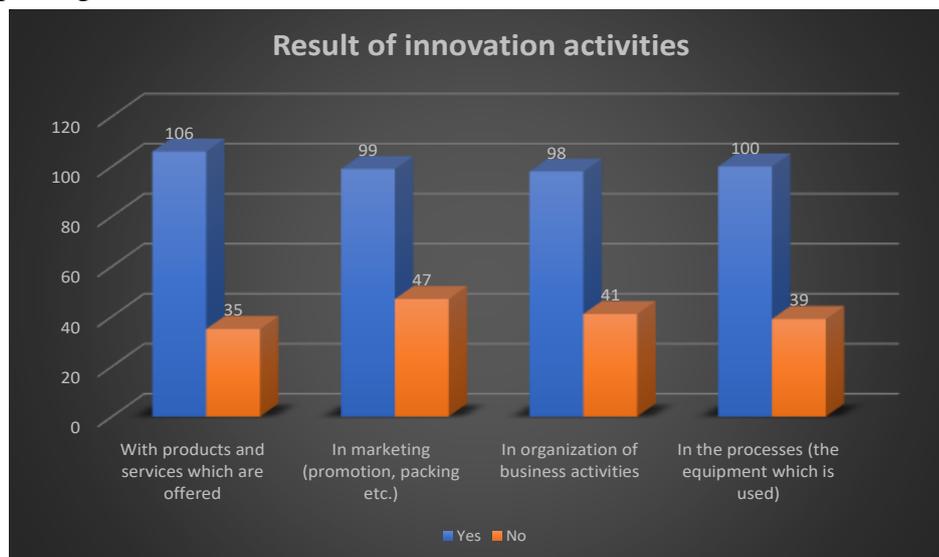
About 83% or 148 respondents believe that any company needs innovation in the products, services or processes it offers. Only 6.7% or 12 respondents believe that innovation is not needed in the organization in which they work. 10.6% or 19 respondents do not know if innovation is needed in the organization in which they work.

Similarly as before, 82.1% of the respondents believe that companies need innovation in organizational structures and way of functioning, only 11.7% are not familiar with the company's operations, so they expressed that they do not know if innovation is needed in the structures and way of functioning.

of the company, and the lowest percentage or 6.1% of the respondents clearly expressed that there is no need for innovation in the organizational structures and way of functioning of the company.

About 67% of respondents expressed that the company they work for was involved in the innovation process in the last two years of operation. 20.7% of respondents expressed that they do not know if the company they work for was involved in the innovation process and only 12.8% believe that the company was not involved in the innovation process in the last two years of its work.

Graph diagram no.6 – Result of innovation activities



The highest number of respondents who expressed themselves with the answer "Yes" for innovation activities refers to the products or services offered on the market, and the lowest number expressed themselves in the organization of business activities, while the highest number of respondents expressed themselves with "No" for innovation activities in marketing, and at least for the products or services offered on the market.

Some of the companies in the market cooperate with other entities to create innovations, but some may not. 53.6% of the respondents believe that the company they work for cooperates with other foreign companies, 45.8% believe that the company they work for cooperates with other higher education institutions, i.e. that carry out scientific and research activities, 40.2% believe that the company cooperates with other Macedonian enterprises in a form of support, 36.9% of the respondents believe that the company cooperates with consultants and commercial institutions or institutes for research and development, 11.7% believe that the company did not cooperate with any institution for the innovation process and 5% of respondents expressed themselves with the option 'other'.

Part of the respondents who expressed themselves with the 'other' option stated the following: European Commission, European Innovation Council, HEIs across the world, Fund for Innovation and Technological Development, foreign companies and consulting companies.

Almost 59% of the respondents expressed that the employees of the companies responsible for research and development attend innovation training, 22.3% are not familiar with whether the employees of the company they work for attend seminars or training and only 19% of the respondents expressed that the employees in the company work for do not attend seminars or training related to innovations.

A very important piece of information is whether the company's employees have freedom and can propose ideas to their superior. The conducted research confirms that 80.4% of respondents have the freedom and can propose a new idea to their superior, which is a high percentage and an excellent result, only 19.6% expressed that they do not have the freedom to propose a new idea to their superior in the company where they work?

Only 67% of companies offered their employees participation in training related to creativity and innovation, and only 33% of companies did not offer their employees participation in training related to innovation and creativity.

Accordingly, 81.6% of respondents expressed that there is freedom to share ideas, discussion and debate about them in the company they work in, which is an excellent percentage, and only 18.4% expressed that they do not have freedom to share ideas and opinions related to the innovation process.

Considering that, 46.4% believe that there are certain efforts that the organization encourages in order to develop greater creativity among employees, while 40.2% believe that the company undertakes key activities in encouraging the process of creativity and innovation, 30, 2% believe that there is no interest among employees in creativity and innovation, 8.9% of respondents believe that the process of creativity and innovation is not encouraged at all and only 1.7% chose 'the other' option.

Almost 75% of respondents expressed that they are familiar with the goals and strategy of the company they work for, 20.7% chose the option that they are partially familiar with the goals and strategy, and only 4.5% chose the option 'no'.

The analysis showed that three key advantages of the innovation process are the following: gaining new customers for the company would bring the company positive results (77.7%), followed by an increase in the company's profit (48.6%). and while the retention of regular customers is also of particular importance (40.8%), the analysis shows that also important advantages of the innovation process are: the innovation process can create or reaffirm the company's brand (33%) and only 3.4% of respondents believe that the innovation process can have a negative result, i.e. they do not expect any benefit from its implementation.

A large percentage i.e. 84.4% of respondents would accept to be part of an innovation development team and only 15.6% of respondents would not accept to be part of an innovation development team.

The analysis confirms that 58.7% of the respondents believe that the innovation process achieves more efficient working of the company, 53.6% believe that by applying the innovation process the company's profit would increase, 48% believe that the employees would be happier if the innovation process is applied, 40.2% believe that by innovating, the company would maintain long-term viability on the

market and only 6.7% of respondents believe that there is no benefit from implementing the innovation process.

The respondents answered that the most influential reason for the lack of an innovation process is: the lack of funds to start such a process (52.5%), followed by the lack of employees who would be in charge of such a process (48.6%), the lack of ideas (46.4%) and the indifference of the management and/or ownership structure (35.8%).

Conclusion

With the results obtained from the research where the innovation was the subject of examination, it is expected that the innovation process has a positive impact on the actions of the companies in the dynamic environment.

Also, increased market competition, decentralization and globalization of work processes and advances in information and communication technologies, organizations require flexibility and agility in their delivery of products and services.

In order to better understand and accept the changes that are constantly occurring in the dynamic environment and the need for adaptation, companies should take actions through the innovation process.

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BOOST YOUR BRAND IMAGE WITH DIGITAL
MARKETING

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Abstract

No different from the traditional marketing, digital marketing aims at building a programme to express organizational purposes, to keep in touch with customers, and meet and exceed their need, but with the use of technology tools. The continuous use of technology worldwide and digital marketing by organizations encourages constant analysis of them too. Given the continuous growing number of people present online, marketers are analysing each tool an organization can use in order to compete, grow and sustain in the competitive markets. As a result, the number of objectives of the digital marketing rises too. Organizations use digital marketing for many reasons among which to increase their sales and revenue, build their brand, improve their SEO, stream new leads, increase qualified traffic, manage online reputation, become an influencer, and so on. The scope of this research paper is to present the main objectives of digital marketing and focus on the different ways it can help organizations boost their brand image. Organizations can build their brand offline and online, but in order to sustain on the competitive market, they must implement digital marketing strategies to construct a brand. Digital marketing helps organizations boost their brand and make it well-known, credible, trusted, strong. Furthermore, when used properly, digital marketing tools and activities help create brand awareness, build community, and increase brand equity.

Keywords: brand image, digital marketing, customer awareness, brand recognition, strategy

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1. Introduction

Internet has been part of this world for more than 60 years, but the communication started with the introduction of World Wide Web, and the evolution of the digital era began. According to the DataReportal, by today 63.1% of the world population is online, and 59% of them are social media users. During this progression, many disciplines have developed, and new ones established. This applies to marketing too. According to the researchers and literature review the digital marketing as a discipline derives from the traditional marketing, serving the same purpose of reaching and engaging customers for a certain product, service, or idea. Differently from the traditional marketing, the digital marketing uses the digital technology to fulfill its purposes, that is to target the audience, to build the preference database, to engage, and finally to increase sales. At the beginning, digital marketing was mostly used when referring to the online sale of products and services, or the well-known e-commerce. However, today digital marketing is a term that indicates how entire organizations operate, and how they adapt to the changes brought by the digital era.

Some of the main objectives of the digital marketing today are to increase sales and revenue, build a brand, improve SEO, stream new leads, increase traffic, manage online reputation, and become an influencer. Building a brand with digital marketing today is even easier since it offers many tools to do so, such as e-mail, websites, social media platforms, etc. Digital marketing helps organizations build and boost their brand so that it can be well-known, credible, trusted, and strong. With the use of digital marketing strategies, organizations create brand awareness, build community, and increase brand equity.

2. Building a brand

Building a brand is one highly important process for every organization. Creating a brand includes decisions about the name, design, sign, term, and/or symbol that will distinguish one seller from another. The main reason of creating a brand is to get recognized more often. But the brand is more than just a logo or name. In today's competitive market, the brand stands for the organization's identity and personality. It serves as an identifier on the market, and a promise for the ones that interact with it. Moreover, the brand is a set of perceptions about a product, service, or organization, and a customers' mind share based on experience and future expectation. The process of branding is vital for every organization since it can help build trust, and creates value, experience, and loyal customers.

The focus of organizations today is building a strong brand that will last even for decades. A strong brand means building a brand that will stand out in customers' minds. The one that sends a clear message, has solid identity, and visual synergy. Strong brands are easy on the eye and relevant to its industry, and as a result are easily recognizable.

Reaching all these branding goals in today's digital era is possible, but it has its drawbacks too. With all the technological tools and Internet in hand, brands are partly less durable today given that the customers have evolved too.

Nowadays, customer's needs, and interests change continuously given that they have more information available leading to more choices and hence comparison of offers. Assumed all this, the key to success is to create an adaptable brand that will use everything the digital era offers, in their advantage.

3. Boost a brand with digital marketing

Digital marketing as a discipline has numerous advantages when it comes to building and boosting brands. Given its nature, it offers organizations a global reach, meaning entering new markets, operating globally, and still having the possibility to track and measure results. Additionally, digital marketing is highly customizable and offers tailoring campaigns so that it can reach specific target audience. It is very important for an organization to target customers who are the "right fit" for their offers given that today 63.1% of the population are Internet users, 66.9% are unique mobile phone users, and 59% are active social media users³. Digital marketing tools help organizations with the analysis of their online marketing campaigns, giving them data about where the budget is spent, what is the return on investment (ROI) and return on advertising spend (ROAS), so that further decisions can be made. Another advantage of digital marketing is the possibility for personalization, including personalized offers, messages, ads etc., depending on the marketing funnel stage. With all the digital tools under its umbrella, digital marketing is great for customers relationship management too, giving the opportunity for direct communication.

Digital marketing is a dynamic discipline that offers numerous opportunities for the organizations striving for strong brands and tools to boost their brands, and some of them are content marketing, social media, website, search engine optimization (SEO), and pay per click (PPC).

3.1. Content marketing

By definition, "content marketing is a marketing technique of creating and distributing relevant and valuable content to attract, acquire and engage a clearly defined and understood target audience – with the objective of driving profitable customer action". (Charlesworth 2018) The concept of content marketing is not new, but its popularity is increasing tremendously with the increase of digital tools. The content marketing means understanding all that brand creates, including the purpose of it and to whom it is intended. When creating content organizations must make decisions about *who* they are trying to reach and *why*. Furthermore, they must decide about the structure of the content including where it is, how people can find it, and how it is organized. During the process of content creation, organizations must be aware of laws and regulations, guidelines, standards, etc. As a result, the purpose of content marketing is creating a content that will increase brand awareness, brand loyalty, web traffic, customer retention and acquisition, lead generation and increase sales. It is of great importance to note that the main objective of the content marketing is not immediate sale.

³ <https://datareportal.com/global-digital-overview>

Organizations use content marketing to boost their brand by focusing on customers' values and interests and supplying information that will suit their needs. By doing this, organizations with the use of content marketing practice a storytelling, spread a customer-generated content building strong customer relationships, and enjoy unified brand experience.

3.2. Social media

By just typing the social media term, several sites pop out such as Twitter, Facebook, LinkedIn, YouTube, WhatsApp, Instagram, TikTok, and many more. The definition of social media is still open to debate, but basically it understood as a group of various social networks and community sites with user-generated content. It is imperative to note that users do not have social media sites under their control. For organizations to get the most of social media as a tool for boosting their brand, it is vital to understand how they work too. One clear presentation offers the social media matrix by Zhu and Chen shown in Table 1. (Zhu and Chen 2015)

Table 1. Social media matrix

	<i>Customized message</i>	<i>Broadcast message</i>
<i>Profile-based</i>	<p>Relationship Allows users to connect, reconnect, communicate and build relationships (e.g. Facebook).</p>	<p>Self-media Allows users to broadcast their updates and others to follow (e.g. Twitter).</p>
<i>Content-based</i>	<p>Collaboration Allows users to collaboratively find answers, advice and help (e.g. Reddit).</p>	<p>Creative outlet Allows users to share their interest, creativity and hobbies with each other (e.g. Pinterest).</p>

As show on the matrix, social media can present customized and broadcasted messages which can be either profile or content based. When it comes to using social media as a digital marketing tool it is essential to know that social media and social media marketing are different things, it is not a solution to all the problems, and it is not free of charge. However, social media marketing advantages are numerous, including targeting very specific audience segment, opportunity for presence on existing social media and therefore quick and easy connection with customers. Social media marketing is inter-related with the content marketing because the content is in the core of any social media used. Therefore, social media marketing includes content creation such as blogging, video sharing, and microblogging.

The importance of social media marketing can be backed up with the latest statistics. According to the Datareportal, there are 4.70 billion (or 59% of the population) active social media users spending an average daily time of 2 hours and 29 minutes. Facebook is placed to number 1 most active social media platform with almost 3 billion monthly active users as of April 2022. Furthermore, the total potential reach of ads on Facebook is 2.14 billion. Second most active platform is YouTube with 2.562 billion users that can be reached with ads, followed by WhatsApp with 2 billion active users. Forth on the list of 2022 is

Instagram with potential advertising reach of 1.45 billion. Analyzing users' reasons, 23% use it for seeing content from their favorite brands and 27.9% for finding inspiration for things to do and buy. (Global social media statistics, 2022) These percentages offer high opportunities for organizations to boost their brands using social media.

3.3. Website

Differently from the social media, websites are owned and controlled by the organizations. At the beginning of the web introduction, organizations designed websites for themselves rather than the customer, and offered only information that they wanted visitors to know. As time passes, organizations vastly using websites into their digital marketing strategy, shift the focus to the visitors or their customers. Organizations today put customers in focus when creating their website, focusing more on web presence, meeting customers' needs, and achieving organizational goals. When developing a website for a stronger presence and brand awareness, organizations must put emphasis on several elements, including aesthetic design, processing speed, security, ease of use, structure, content readability, corporate credibility, business functionality, adequacy and quality of information, appearance, availability, usability, service interaction, playfulness, attractiveness, usefulness, etc. Each of these elements are intangible and differ from customers and developers' perspective. If any of the elements are not easily met, customers would leave the site before even finding the information they need. All these design elements are important when creating a professional and user-friendly website. However, when using the website as a digital marketing tool more accent should be put on the web presence since today people, hence potential customers, have more choice than ever. As Charlesworth in his book states, when developing a website, organizations must answer the www questions – what the site's objectives are, who are the visitors, and why are they visiting the site. (Charlesworth 2018) The successful websites are the once that put customers' needs in focus when designing one, and continue during the process of presence, providing all the information needed and valuable content. Websites are vital part of the digital marketing, and organizations use them to boost their brands since they go hand in hand with SEO, social media, and e-mail marketing. Besides all other online tools used by customers, organization's website is the one that is always visited for more information, allowing customers to find the organization, connect, and engage. Websites are perfect place for showing off the brand using multimedia, fonts, and colors, for powerful first impression. To get most of it and boost the brand, organizations pair websites with SEO and other analytical tools. By doing so, they get relevant data about the website traffic and engagement metrics which is used to create impact, drive more traffic, attract more visitors, convert visitors to customers, etc.

3.4. SEO

Search engine optimization, or widely known as SEO, is considered Internet's front door. The process of SEO implies ranking websites and webpages

on Internet. Any organization seeking to sell anything on Internet is concerned about the SEO since it gives the insight of what affects their website position in search results pages. According to the world Internet statistics, there are 63.1% Internet users and an average daily time spent by each Internet user is 6 hours and 49 minutes.⁴ Looking further at the Internet usage statistics connected to the SEO it is important to note that already 68% of the online experiences begin with search engines, 63% of all shopping begins online, and 66% of the people engage in some kind of online research before making an online purchase.⁵ The statistics related to SEO go deeper and provide organizations with helpful data for website optimization so that they can achieve even higher ranking on the search engine results page. Here comes the focus on customers helpful again, since the SEO process is used for website optimization intended for better user experience and tries to ensure that users can find what they are looking for. The algorithms for SEO are changing constantly, so it is vital that organizations follow them so that they can keep or/and improve their online ranking. The SEO process helps organizations boost their brands with the optimization of website's critical elements, identifying relevant keywords, and targeting core audience.

3.5. PPC

Pay-per-click, or PPC, is paid online advertising intended to drive more traffic to certain websites. To use the PPC organizations link their advertisements with specific keywords, and each time a search is made regarding a certain product or service, the information is linked, and a solution offered. The organization is charged for every click on its ad, so the whole PPC system works on bidding, meaning the more competitive the keyword is, the more it will cost. PPC is effective digital marketing tool to boost brands because it offers the opportunity to beat competitors' website and helps organizations to place their brand in front of a certain target audience. Furthermore, PPC can be used through different platforms including search engines, video platforms, social media platforms, and other related websites. According to the latest statistics an average Internet user is exposed to 4 000 to 10 000 ads daily, paid advertisements have 200% ROI, and 65% of customers click on PPC ads. When it comes to brand awareness it is vital to know that according to the statistics the ads can increase brand awareness by 80%.⁶ Looking at the market share of search engines, Google holds around 78% of it with 8 billion searches per day and almost 105 000 searches in 1 second.⁷ Placing a PPC ad on such a highly visited search engine enormously increases the chances of being seen, increase influence and boost brand.

⁴ <https://datareportal.com/global-digital-overview>

⁵ <https://inter-growth.co/seo-stats/>

⁶ <https://techjury.net/blog/ppc-stats/#gref>

⁷ <https://www.internetlivestats.com/one-second/#google-band>

4. Companies that boost their brands with digital marketing

As mentioned in the previous sections, research and literature review give clear bases of definitions for what marketing is, what are the processes and tactics imposed by it, what are the different disciplines arising from it with the changes and challenges everyone is facing. However, the market is where everything happens in practice. Looking at the world market, there are numerous companies that outline the pros of digital marketing. The most outstanding ones that boost their brands with digital marketing according to many researchers are: ASOS, Netflix, Nike, Airbnb, Tesco, Starbucks, Zappos, Yelp, and Tesla. They aren't all in the same industry. Some of them are in apparel industry such as ASOS, Nike, and Zappos, others in retail like Tesco and Starbucks. There are representatives from automotive and energy industry, like Tesla, from hospitality industry like Airbnb from internet entertainment such as Netflix and local search like Yelp. Still, they all have outstanding digital marketing strategies that helped their brands. To do so, these companies focused their digital marketing strategies on their customers and creating valuable content, real communication, personalization, usable information, and experience. Furthermore, they are present on social media which is of great importance for today's "digitalized" customers. The success of these digital marketing strategies lays in the focus of sharing content and making connections and engagement. Instead of selling a product, service or idea, these brands share knowledge and experience. This creates loyal and satisfied customers who trust and are confident about the brand. Of course, the end result is profitability for the companies, but with boosted, trustworthy, and influential brands. (Gilliland, N.; *How 5 Emerging Tech Brands Use Digital Marketing to Grow Their Customer Base*; Raehsler, L.; Summer; Siu, E.; Barraclough, D.)

5. Conclusion

Digital marketing is a vital part of any organization today operating on the market, so it is of great importance to establish a clear digital marketing strategy and be able to implement it. Digital marketing offers many tools to be used in order to compete in today's digital world. Organizations seeking to succeed and flourish, focus on building a strong brand that will stand out in every customer's mind. Strong brands have customers in the focus, are recognizable, promising, loyal, and consistent. All these objectives of a strong brand are very likely to be achieved and organizations boost their brands with the use of digital marketing tools such as content marketing, social media, website, SEO, and PPC. All these tools are interconnected and to be used together in order to get the most of it.

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CONSUMER PROTECTION IN CONCLUDING
ELECTRONIC CONTRACTS IN TERMS OF COVID-19
PANDEMIC

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Abstract

The world community is facing changing circumstances as a result of a health crisis that has profound economic, socio-political and legal implications. The process of globalization and modernization has structured the digitalization of society, but the health crisis caused by the Covid-19 pandemic has imposed its most exploited form to date. As a result, many of the social and economic forms of existence of individuals have been reduced to the use of digital media as a means of social functioning. The possibilities provided by digitalization require legal regulation in order to achieve legal certainty and predictability and to enable protection of its users. The paper puts its primary focus on consumer protection in the context of the emerging pandemic conditions in concluding electronic contracts. The paper analyzes the Macedonian legal framework that ensures consumer protection, comparing and determining the degree of harmonization with European Union legislation governing this issue. Pandemic conditions have imposed a new stage in the use of e-commerce and in that direction the paper assesses the intensity of this stage by noting the main features, while evaluating the need for consumer protection in their use of the opportunities offered by e-commerce. The paper comparatively analyzes the national, European and international experiences in this field in order to present the global picture that caused the Covid-19 pandemic without leaving out any country. Synthesizing the legislative solutions and the experiences from the applied practices, the paper gives directions on how to use the positive experiences from the e-commerce and on how the protection of the consumers should take place in changed and intensified digital conditions.

Keywords: Electronic Contracts, Consumer Protection, Covid-19 Pandemic, E-Commerce, Republic of North Macedonia.

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1. Introduction

Consumer protection is of particular importance for the normal course and development of any national economy. Effective consumer protection is an indicator of the degree of concurrency, opportunities for fair market competition and the overall economic climate. (Sinha, 2017, p. 14) The construction of a quality system of consumer protection is the main goal of every country, and especially a developing country such as the Republic of North Macedonia.

The current Covid-19 period, which dictates the socio-economic conditions, has a deep impact in all spheres of human activity, and in that sense it actively affects the consumer category as well. The Covid-19 period, analyzed from the point of view of consumers, first caused the popularization of digital media. It caused limited access to basic goods and services, and put the category of vulnerable consumers in an unenviable position. (Consumers International, 2020) The health and economic well-being of consumers experienced a negative trend, as a result of the unpredictable circumstances caused by the pandemic.

Entering the most exposed period of the digital economy has opened up unlimited opportunities for consumers. Electronic commerce of goods and services in the conditions of Covid-19 was used by consumers in large intervals not limited to online purchases, but also in terms of virtual fulfillment of work tasks and educational purposes. The Internet has become the fastest and most efficient way of information and the only open window for social interaction. (UNCTAD, 2020)

The increased intensity of utilization of information technology achievements and increased electronic commerce require increased commitment to the protection of users' rights. Therefore, if the interest of consumer protection in the pre-Covid-19 period was at a satisfactory level, currently the focus on the consumer must be doubled, bearing in mind the fact that a large part of consumer activities were reduced to electronic commerce.

Our primary focus is providing an overview of the legal possibilities that go in the direction of protecting the Macedonian consumer, compared to those of the European Union. However, before approaching that analysis, it is necessary to refer to the situation with electronic commerce in the country and the affinities of the Macedonian consumer in the conditions of the Covid-19 pandemic.

2. The Use of e-Commerce in the Republic of North Macedonia in the Conditions of Covid-19 pandemic

The last decades have been characterized by an exceptional development of information and communication technology that has greatly changed the economic activities of businesses and consumers. As a result of such structural changes in economic activities, a new and popular category has developed - electronic commerce (e-commerce). The development of e-commerce is known to take advantage of opportunities that contribute to facilitating economic development and growth based on new network technologies, primarily through computers, mobile phones and connected devices that promote the well-being of users. (UNCTAD, 2017, p. 2)

The acceleration of digitization and the ever-increasing reliance on digital technologies in everyday life have become particularly noticeable in the pandemic period, where there has been an increased affirmation of information and communication technology in global trade. Digitization in principle has had a great impact in the world of commerce, through a growing increase in the sale of goods and services, and this is especially significant during the period of the Covid-19 pandemic due to the imposed restrictions on movement. All technological revolutions create enormous benefits, but these benefits require active regulation through appropriate policies and legal acts at the national and international level in order to ensure that countries have the necessary capacities to take advantage of the benefits of technological advances. (UNCTAD, 2022, p. 10)

The regulation of e-commerce is a challenge at the international level, but it is also a challenge for national legislators who strive to achieve a high level of harmonization in this area. E-commerce in the Republic of North Macedonia is regulated by a special law, i.e. the Law on Electronic Commerce (LEC). The LEC was adopted in 2007 and this Law was developed according to international standards, that is, in compliance with the UNICITRAL Model Law and according to European standards, that is, EU Directive 2000/13. (Gjorgjioska, 2020, p. 57) The Law has undergone four amendments so far, of which the last amendment was in 2020. Although 2020 is a pandemic year, the amendments and additions were not related to the newly emerging Covid-19 circumstances, but rather to comply with the Law on Misdemeanors and the amount of the misdemeanors was changed. (Angelovska & Angelovska, 2020, p. 45)

The trend of increased use of e-commerce, i.e. the realization of business transactions via Internet during the period of the Covid-19 pandemic, is also characteristic for the Republic of North Macedonia. If in the past e-commerce was mostly limited to buying products outside the country's borders, buying tickets (airline, sports or concerts) as well as hotel reservations, the current Covid 19 period has imposed conditions in which the online purchase of necessary items has become widespread. This is primarily a result of the fact that the pandemic period is a period of isolation and social distancing. That is why Macedonian companies started introducing new practices in their operations in order to satisfy the needs of consumers and the market by creating websites intended for online shopping. (Pterushevska *et al.*, 2022, p. 8)

The analysis of the use of e-commerce in the Republic of North Macedonia implies an assessment of the prerequisites for its development. As prerequisites for the development of electronic commerce, in addition to the undoubted fact that there must be legal regulation, are access to information and communication technology, the existence of a system for online shopping and developed delivery. Information and communication technology is the first prerequisite that enables digitization. Access to the Internet by consumers and businesses is important for the development of e-commerce. Although these technologies are involved everywhere, the speed of implementation is different. (Angelovska & Angelovska, 2018, p. 21) In 2019, 82% of households in the Republic of North Macedonia had access to the internet. This positions the country ahead of the rest of the Balkan countries. (Angelovska & Angelovska,

2020, p. 55) The second prerequisite for the development of electronic commerce is the functioning of a payment system that enables the realization of the transaction through the acceptance of electronic payment. In the Republic of North Macedonia, an account-based payment system is mostly used for online transactions that include online payments. However, outdated forms such as payment with payment slips or during delivery, which do not represent electronic payments, still exist. (Angelovska & Angelovska, 2018, p. 29) A key prerequisite for the development of e-commerce is the provision of timely delivery to the final consumer. According to the Register of Postal Service Providers of the Postal Agency, there are 45 postal service providers. (Post Agency, 2022)

The quantitative analysis of the use of e-commerce in the Republic of North Macedonia can be performed by reviewing the activity of payment cards in virtual (internet) stores. According to the Annual Payment Information of the National Bank of the Republic of North Macedonia for 2021, as a result of the change in the payment habits and culture of citizens and companies, the use of payment cards at domestic virtual (internet) points of sale has recorded a high annual growth of 32.4%. (National Bank of North Macedonia, 2022, p. 8) While in 2020, a growth of 36.5% compared to 2019 was recorded. (Angelovska & Angelovska, 2021, p. 17) What distinguishes the Covid-19 period is that there is an increase in the use of domestic cards when making purchases in domestic online stores. During this period, a change was made in the structure of online transactions in favor of domestic virtual stores. 74% of the total value of online transactions in 2020 was realized towards domestic internet stores. The pandemic period (2020-2021) caused a continuous growth in the value of realized transactions to domestic online stores, a growth of 160% in the second quarter of 2020 compared to the same period in 2019 (Angelovska & Angelovska, 2021, p. 19) and a growth of 77% in the first half of 2021 compared to the first half of 2020. (Angelovska & Angelovska, 2021, p. 31)

3. Characteristics of the Macedonian Consumer and the Impact of the Covid-19 Pandemic

According to the definition of the Proposal-Law on Consumer Protection, "consumer" means any natural person who acquires goods or uses services for purposes that do not fall within the scope of his trade, business, craft or professional activity. The definition is in accordance with Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts. The definition also does not significantly differ from the definition of consumers from the current Law on Consumer Protection (LCP), although in the basic text of the law from 2004 until 2007, when it was amended, the definition of consumers included legal entities. In the Proposal-Law, for the first time, "consumer contract" is defined as a contractual consumer relationship concluded between a consumer and a merchant.

E-commerce, distance buying and selling using the Internet, especially during Covid-19, are becoming more and more relevant in our country. According to the data of Eurostat and the State Statistical Office presented by the Association for Electronic Commerce of Macedonia (AETM) in its analysis of the state of e-

commerce in the country, online commerce is dominated by individuals. Through the analysis of e-commerce data in the period before Covid-19 and during Covid-19, certain changes in the use of e-commerce by Macedonian buyers can be observed.

Thus, in the total transactions in 2017 made through e-commerce, natural persons mostly participate with as much as 79% of the total transactions. In the first quarter of 2018, 316,499 people aged 15-74 shopped online, of which 67.6% made one to two orders online for private purposes, and only 3.9% of them made orders more than 10 times. 59.8% of online orders have a value of up to 50 euros, and only 1.1% of online purchases have an estimated value of over 500 euros. Also, a maximum of 54.9% of the products or services ordered via the Internet refer to clothing and sports equipment. (State Statistical Office, 2019, p. 49)

In the first quarter of 2019, 367,385 people aged 15-74 shopped online, of which 64.7% made 1-2 orders during this period, while 26.9% made 3-5 orders, 8.4% made 6 or more orders. Most often (35.8% of orders) consumers bought clothes and sports equipment online, and 54.7% of online purchases were worth up to 50 euros, and 32% of online purchases were worth 50 to 99 euros. (State Statistical Office, 2020, p. 49)

In 2020, as many as 348,551 people aged 15 to 74 shopped online in the first quarter of 2020, of which 46% made 1-2 orders during this period, while 12.7% made 3-5 orders, 5% made 6 or more orders. Most often (36.4% of orders) consumers bought clothes and sports equipment online, and 32.6% of online purchases were worth up to 50 euros, and 19.1% of online purchases were worth 50 to 100 euros. (State Statistical Office, 2021, p. 57)

When comparing the characteristics of the Macedonian consumer in relation to consumers from the European Union (EU) in terms of the frequency of online purchases, it can be noted that Macedonian consumers are in first place for the least frequent online shopping, while in second place for the lowest values of orders from online shopping. (Angelovska & Angelovska, 2021, p. 52-53)

From the statistical data from 2017 until 2021, it can be noted that the number of online purchases is increasing year by year. If in 2006 about 2% of the population ordered or bought a product or service online, in 2018 this number is over 30%. (State Statistical Office, 2019, p. 51) In North Macedonia, according to the data for 2021, over 14 million e-transactions were made, there are about 1700 online stores and the value of e-transactions is over 437 million euros. (Macedonian Association of e-commerce, 2021) Buyers who made 1 to 2 orders have the largest share of online purchases according to frequency, but this trend is declining, and on the other hand, the number of buyers who made more than 2 orders is increasing. In terms of the ordered goods, there is no big change, most of the time the Macedonian consumer buys clothes and sports equipment, and the orders are usually worth up to 50 euros.

Based on that, the conclusion can be drawn that the average Macedonian consumer usually buys clothes and sports equipment through e-commerce (once or twice in three months), with most of the orders having a value of up to 50 euros.

4. Legislative Framework for Consumer Protection in Concluding Electronic Contracts of the European Union and the Degree of Harmonization of the Macedonian Legislation

The legal regime of the EU regarding the regulation of consumer protection in conclusion of contracts that enter the field of e-commerce is composed of a wide range of directives and various national legal instruments. (Sinha, 2017, p. 27) However, in general two main directives can be identified which are the backbone of the regulation of electronic contracts and the protection of consumers. These are Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights and Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market known as the Directive on electronic commerce. In 2019, Directive 2011/83/EU on consumer rights was amended by Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernization of Union consumer protection rules.

The main objective of Directive 2011/83/EU is to increase consumer protection by harmonizing several key aspects of national laws regarding contracts between consumers and traders and to encourage trade between the member states of the EU, especially in situations where consumers buy online. The changes made by Directive (EU) 2019/2161 increase EU consumer protection in precisely defined areas such as online shopping, transparency in pricing and ranking of online offers and consumer rights when using "free" online services.

Directive 2011/83/EU on consumer rights is specifically aimed at protecting consumers in their interaction with traders. In this way, it allows consumers to buy at a distance, i.e. to conclude contracts at a distance. According to Directive 2011/83/EU "distance contract" means any contract concluded between the trader and the consumer under an organized distance sales or service-provision scheme without the simultaneous physical presence of the trader and the consumer, with the exclusive use of one or more means of distance communication up to and including the time at which the contract is concluded. (Directive 2011/83/EU, art. 2, para. 1, p.7) In connection with distance contracts in this Directive, it is possible for consumers to withdraw from the distance contract within 14 days from the receipt of the goods or from the conclusion in the existence of the service contract, without any explanation or additional costs. In case consumers are not aware of their rights, the period for possible withdrawal is extended by 12 months. (Directive 2011/83/EU, art. 9)

The second relevant directive in the area of consumer protection in concluding electronic contracts is the Directive on electronic commerce. This directive has a wider scope, as it also covers contracts concluded between traders and those between traders and consumers. (Riefa, 2009, p. 4) It ensures that there is a possibility that contracts can be concluded electronically and defines the minimum standards needed to obtain clear information about the transactions carried out. In that direction, the Directive guarantees that each EU member state

gives electronic contracts an equivalent legal status as usual paper contract. These contracts have additional terms that insist on clearly and comprehensibly prescribing the technical steps that consumers must follow to conclude the contract, specifying whether or not the contract is archived by the service provider and whether consumers can access the contract at a later stage, the way consumers can identify and correct errors before placing their order and the languages in which the contract can be signed. (Directive 2000/31/EU, art. 10) Consumers must in any case be able to save and print the contract and general conditions.

The perception of the European Commission is relevant in the evaluation of the degree of compliance of the Macedonian legislation with the European one from the point of view of consumer protection. According to the latest North Macedonia 2021 Report, in the area of consumer protection, North Macedonia remains moderately prepared. Of particular concern is the assessment that no progress was made in the reporting period.

For the next year, it is recommended harmonizing the legal framework with the EU law on consumer protection, especially in relation to the LCP, and to strengthening the operational structures that serve to protect consumers. What the European Commission notes in detail is the lack of progress in the adoption of the LCP and the harmonization of national product safety rules with EU law. In addition, further development of the web platform that provides consumer protection information is required. Critic point is that mediation remains expensive and difficult for consumers to access. Finally, the Commission realizes that additional efforts are needed to define the guidelines and procedure for consumer complaints and means of compensation. (EU, European Commission, 2021, p. 76)

5. The situation in the Republic of North Macedonia – legislative and implementation aspects

The legal framework of consumer protection in concluding contracts electronically, similar to the European legislative framework, is based on two basic laws, the LCP and the LEC. Both laws have been amended and supplemented several times over the years, but none of them were subject to amendments and additions that would be directly related to the status and condition of consumers during the pandemic caused by Covid-19.

Generally analyzed, consumer protection during the conclusion of electronic contracts should take place in three phases, that is, the phase of pre-purchase, purchase and post-purchase. The pre-purchase phase is characterized by the existence of information asymmetry. This is especially pronounced in the field of e-commerce, due to the lack of timely access of consumers as well as the very nature of the Internet circumstances. From this point of view, consumers are a vulnerable category and are easily exposed to wrong and fraudulent behavior. (Fibrianti, 2017, p. 68) Accurate and relevant information about goods and services should always be available to them when engaging in e-commerce activities. The purchase phase exposes consumers to new challenges, such as unfair contract terms, online payment security, and protection of personal data and privacy. The third phase, the post-purchase phase, diagnoses potential hazards

such as the possibility of returning the goods and the responsibility for refunds when the goods are not delivered, or are delivered in an unsatisfactory condition, or are materially different from the ordered goods. Often at this stage, consumers may have difficulty contacting suppliers or getting in touch with merchants. For the protection of online consumers in the post-purchase phase, the right of withdrawal is particularly important, as well as the limitation of the responsibility of consumers in the digital market. (UNCTAD, 2017, p. 5-10)

The Macedonian legislative framework in the LEC has defined the term consumer and the term contract in electronic form. According to the glossary of this Law, a consumer is any natural person who uses information society services for purposes outside of his commercial activity or profession. Whereas contracts in electronic form are contracts that legal or natural persons, in whole or in part, conclude, send, receive, terminate, cancel, access and display electronically, using electronic, optical or similar means, including, but not limited to transmission over the Internet. (LEC, 2007 & rev. 2020, art. 1, para. 1) The general provision is that contracts can be concluded electronically, i.e. in electronic form. As a result of this provision the offer and the acceptance of the offer can also be realized in this way. The validity of a contract concluded in electronic form can never be questioned due to the fact that it was made by electronic message. Additionally, when a person's signature is required for the validity and conclusion of the contract, this condition is considered fulfilled if the contract is signed with an electronic signature in accordance with the regulations governing the electronic signature. However, the application of contracts concluded in electronic form is excluded for legally taxatively enumerated contracts. (LEC, 2007 & rev. 2020, art. 10) Contracts concluded electronically are subject to subsidiary application of the Law on Obligation Relations, which gives it the role of *lex generalis* in relation to this type of contract.

The LEC clearly defines the amount of information that should be provided for the conclusion of the contract. In this way, the obligation from the point of view of the consumer to reduce the asymmetry in information in the pre-purchase phase is satisfied. The information society service provider (merchant) is obliged to provide the recipient of the service (consumer), before concluding a contract, in a clear, understandable and unambiguous way, with information about: a) the various technical procedures that must be followed in order to conclude the contract, b) the content of the contract, c) the general operating conditions if they are an integral part of the contract, d) whether the concluded contract will be archived by the service provider and whether it will be available, e) the technical means for recognizing and correcting wrongly entered data before placing the order and f) the languages offered for concluding a contract. The provisions contained in the contracts in electronic form concluded by the service providers of the information society must be made available by the providers (traders) to the users of the services (consumers) in a way that allows their storage and reproduction. (LEC, 2007 & rev. 2020, art. 12, para. 1, 3) This provision is in full compliance with the conditions provided in the EU legislation.

The position of consumers when placing orders is also legally regulated. The recipient of the service (consumer) when placing an order electronically, is obliged to request the service provider (merchant) to deliver a confirmation of

receipt of the order to the recipient with a separate electronic message without delay and electronically. On the other hand, an obligation is introduced for the service provider (merchant) to make available to the recipient of the services (consumer) appropriate, efficient and accessible technical means that enable him to recognize and correct erroneously entered data before making the the order. The moment when the order and the confirmation of receipt are considered received is the moment when they are available to the parties to whom they are addressed. (LEC, 2007 & rev. 2020, art. 13) The second important moment for the contract in electronic form is the moment when it is considered concluded. It is legally determined that this is the moment when the offerer (merchant) will receive the electronic message containing the statement of the recipient (consumer) that he/she accepts the content of the contract. The offer and the acceptance of the offer are considered received when they are available to the parties to whom they are addressed. (LEC, 2007 & rev. 2020, art. 14)

From a consumer point of view, the ways in which commercial and unsolicited commercial communication takes place in the field of e-commerce are important. These types of communication with e-commerce users, i.e. with consumers, are subject to regulation by the LEC. In the case of commercial communication, the service provider (merchant) is obliged to ensure that the data from the commercial communication complies with at least three legally defined conditions. Firstly, it is insisted that the commercial communication can be clearly identified as such at the moment when the user (consumer) receives it, secondly, that the natural or legal person on whose behalf the commercial communication is made can be clearly identified and thirdly, any promotional offer from the commercial communication (including discounts and gifts), can be clearly identified as such and the conditions that need to be met for making an offer from the commercial communication are easily accessible and clearly and unambiguously presented. (LEC, 2007 & rev. 2020, art. 8) In the case of unsolicited commercial communication, the use of e-mail for the purpose of delivering unsolicited commercial communication is allowed only with prior acceptance by the user (consumer) to whom that type of communication is directed. (LEC, 2007 & rev. 2020, art. 9)

The second legislative act that regulates the research area of this paper is the LCP. According to this Law, a consumer is any natural person who buys products or uses services for immediate own consumption in the merchant's business premises, outside the business premises as well as with distance contracts for purposes that do not fall within the scope of his trade, business, craft or professional occupation. Hence, bearing in mind that the focus is placed on consumer protection in concluding electronic contracts, the need to define the broader concept, i.e. the concept of a distance contract, which is used by the LCP, is imposed. According to this Law, a distance contract is any contract concluded between the trader and the consumer within the framework of an organized scheme for the sale or provision of services at a distance without the physical and simultaneous presence of the trader and the consumer, through the exclusive use of one or more means of distance communication until the conclusion of the contract, including the moment of conclusion of the contract. (LCP, 2004 & rev.

2018, art. 4, para. 1) From the point of view of e-commerce, distance contracts are the relevant instruments that cover electronic trading by consumers.

Before concluding the distance contract, the most important basic component is overcoming the asymmetry in information. That is why the LCP pays attention to the right to inform consumers by introducing an obligation for traders. Before the consumer commits to a distance contract, the trader should provide the consumer with the following information in a clear and comprehensible manner: a) the main characteristics of the goods or services; b) the identity of the merchant, i.e. its trade name; c) the registered office of the trader and its telephone number, fax and electronic address, where possible, to enable the consumer to quickly contact the trader and communicate effectively with him/her and, if applicable, the registered office and the identity of the trader in whose name he/she acts; d) if there is a different address from the stated head office, the geographical address of the head office of the trader, where the consumer can send any complaints and, if applicable, that of the trader on whose behalf he/she is acting; e) the total price of the goods or services including taxes or if the nature of the goods or services is such that it is impossible to reasonably and in advance calculate the price, the method of price calculation and, if applicable, any additional transport, delivery or postal costs and all other costs or where those costs cannot reasonably be calculated in advance, the fact that these additional costs can be paid; f) the cost of using the means of distance communication for concluding the contract when such cost is calculated on a basis other than the base rate; g) the methods of payment, delivery and execution, the date by which the merchant undertakes to deliver the goods or provide a service and, if applicable, the procedure that the merchant applies to resolve complaints; h) in case there is a right of withdrawal, the conditions, deadlines and procedures for exercising that right are in accordance with the withdrawal form; i) if applicable, the information that the consumer should bear the cost of returning the goods in case of withdrawal and in case of distance contracts if the goods by their nature cannot normally be returned by post; j) if the consumer exercises the right of withdrawal after submitting the request, he/she is responsible for paying the consumer reasonable costs; k) if no right of withdrawal is provided, the information that the consumer will not benefit from the right of withdrawal or, if applicable, the circumstances under which the consumer loses the right of withdrawal; l) a reminder that there is a legal guarantee for the conformity of the goods; m) if applicable, the existence and conditions of after-sales assistance to the consumer, after-sales services and trade guarantees and n) existence of relevant codes of conduct. (LCP, 2004 & rev. 2018, art. 86)

The second important component in consumer protection to which the LCP pays attention is the right of withdrawal. This right of withdrawal is part of the protection of consumers in concluding electronic contracts in the post-purchase phase. The right of withdrawal implies that the consumer has a period of 14 days to withdraw from a distance contract without giving any reason and without incurring costs, beyond the legally stipulated limits. It should be emphasized here that there are statutory exceptions to this right. Withdrawal from a distance contract is carried out by the consumer by filling in a prescribed form. The right of withdrawal expires after 14 days, in the case of service contracts,

from the day the contract is concluded, and in the case of sales contracts, from the day the consumer physically acquires the goods. (LCP, 2004 & rev. 2018, art. 89, para. 1, 2, 4) If the trader's obligation to provide the consumer with the information regarding the right of withdrawal is not respected, the withdrawal period expires 12 months after the end of the initial withdrawal period. In the case that the trader provides the consumer with the necessary information within 12 months, the withdrawal period expires 14 days after the day on which the consumer receives the information. (LCP, 2004 & rev. 2018, art. 90) If the consumer approaches exercising the right to withdraw from the contract, he/she informs the trader of his decision before the expiry of the withdrawal period. The trader may offer the consumer an electronic option to exercise the right of withdrawal. In that case, the trader immediately informs the consumer about the confirmation of receipt of the withdrawal. In any case, the burden of proof regarding the exercise of the right is on the consumer. (LCP, 2004 & rev. 2018, art. 91, para. 1, 3, 4) Exercising the right of withdrawal ends the obligations of the parties to perform the distance contract or conclude a distance contract in cases where an offer is made by the consumer. (LCP, 2004 & rev. 2018, art. 92)

In the Republic of North Macedonia, electronic commerce, buying and selling at a distance using the Internet, are becoming more and more relevant, especially in the conditions of the global pandemic, when movement is restricted by introducing measures aimed at protecting the health of the population. (Petrushevska *et al.*, 2022, p. 11) This fact imposes an increasingly intense need for an increased focus on consumer protection in this area. In the field of consumer protection in the country, the Consumers Organization of Macedonia, established as a citizens' association, is particularly active. The need for consumer protection during the pandemic period (2020-2021) can be seen from the number of consultations that this organization has carried out.

Table 1. Total number of consultations and methods of their realization

Year	Total consultations	Method of realization of counseling				
		Telephone	E-mail	Personal counseling	Facebook profile	Regular mail
2020	2390	65%	26%	6%	2%	1%
2021	2572	58%	31%	7%	3%	1%

The activity of the Consumers Organization of Macedonia during the period of the Covid-19 pandemic is distinguished by the realization of a significant number of consultations. This number of counseling shows an increase between the two research years. The most common medium used for counseling in both years is the telephone, and the least used is the postal method. The Organization has made an analysis by category that diagnoses a large number of complaints in the area of online shopping during the pandemic period. The increased number of online trading, which is a consequence of the new conditions with the Covid-19 pandemic, has led to an increased number of deceived buyers who buy through online stores on social networks, mostly Facebook and Instagram. Consumers are often deceived through deceptive advertising by fake

sellers when they buy products through such profiles, especially when these sellers send them a low-quality, damaged or product different from the one ordered, when they send them a product only with a consignment note, without issuing them a fiscal bill/invoice, due to which consumers do not have the opportunity to return or replace the products. (Consumers Organization of Macedonia, 2020, p. 5; Consumers Organization of Macedonia, 2021, p. 8-9)

The State Market Inspectorate, which is a body within the Ministry of Economy with the capacity of a legal entity, according to the provisions of both the LEC and the LCP, is an authorized body for conducting inspections. Therefore, in this research, the activity of the State Market Inspectorate in relation to submitted reports and petitions by consumers is taken as an indicator of the degree of consumer protection in the pandemic period (2020-2021).

Table 2. Number of reports and petitions submitted to the State Market Inspectorate

			Number of submitted reports and petitions	
			2020	2021*
Law on Consumer Protection	on	Consumer	738	665
Law on Electronic Commerce	on	Electronic	0	0

* the data for 2021 refer only to the 2nd half of the year (01.07.2021-31.12.2021)

The number of consumers who use electronic commerce, especially during the pandemic period, shows an upward trend at the national level, but the same is not reflected in the number of reports submitted on this basis to the State Market Inspectorate. This trend is not only characteristic of the period 2020-2021, it is noticeable that no application was submitted either in 2018 or 2019. (Institute for Strategic Research and Education, 2020, p. 82) The absence of such data indicates that there is a possibility that consumers are not familiar with this mechanism of protection of rights. However, the general conclusion is that there are a large number of reports and petitions related to the implementation of the LCP, which indicates that consumers are increasingly using this protection mechanism. The State Market Inspectorate, within the framework of its activities, educates the perpetrators of offenses. In that direction, acting according to the LCP, the inspectorate carried out 281 educations in 2020, and 189 educations in 2021. (State Market Inspectorate, 2021a, p. 15; State Market Inspectorate, 2021b, p. 12; State Market Inspectorate0, 2022, p. 13)

6. Conclusion

Digital technology is developing faster every day, providing new opportunities for consumers and access to new services. The rapid use of e-commerce during the Covid-19 period is the result of new circumstances, which contributed to changes in the normal course of life activities. Limiting the movement of people, insisting on social distance only imposed the need for a

digital society, where consumer habits were also transferred to the digital market. Digital infrastructure for people has never been more critical to the functioning of the economy. The Covid-19 pandemic exposed the shortcomings and the level of development of the digital society, while imposing the need for accelerated development and resistance to future shocks in order to increase the coverage of e-commerce, digital identification, electronic/mobile banking and mobile health services. A concerted and coordinated effort is mandatory to avoid marginalization of disadvantaged consumer groups. At the same time, reliable steps are needed that will guarantee accessible, high-quality and safe internet and that the rules for operating the digital market protect consumers equally as when they perform physical activities.

It is essential to have the appropriate legislation in place to address the challenges of consumer protection in e-commerce. Therefore, the Macedonian legislator is recommended to adopt a new LCP that will be fully compliant with the latest European directives and practices in this area. In that way, the noted remark from the European Commission in terms of consumer protection would be eliminated. Of particular importance for the development and popularization of protection is the construction of a relevant digital media that will provide relevant information and statistics regarding the institutional treatment of consumers and the efforts of the civil sector in their protection. Activities aimed at educating consumers in concluding electronic contracts is needed in Macedonian society. This type of education should not be limited to raising consumer awareness of their rights and obligations, but should focus on preventing harmful practices such as online fraud. Therefore, it is necessary to develop appropriate strategies for educating Macedonian consumers in these areas. This would achieve greater consumer confidence in digital markets, which is the starting point for continued growth of e-commerce. Considering the new pandemic conditions, consumer trust in the digital society is more important than ever. This trust cannot be achieved solely by providing legal solutions. Effective law enforcement is a key element in protecting consumers from harmful and abusive practices in the digital marketplace. Dealing with consumer issues in e-commerce is more complex due to the absence of a physical presence. The steps and measures related to e-commerce that are taken to protect consumers by Macedonian institutions should include a wider range of law enforcement activities, such as research studies, educational programs, public opinion polls, workshops and Internet observatories.

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DEVELOPING TURKEY'S STRATEGIES AGAINST THE
GLOBAL FOOD CRISIS

Gökhan Unakitan¹

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Abstract

Although providing people's access to basic nutrients has always been important, increasing population, rapid migration from villages to cities, widening the gap in income distribution and increasing commodity costs have been effective in the emergence of the food crisis in the world. However, in recent years, factors such as climate change, the Covid-19 pandemic, the increase in fuel costs and the war between Ukraine and Russia have caused significant increases in food prices and increased acute food insecurity. According to the UN's "Global Food Crisis Report", it was pointed out that 139 million people in 24 countries/regions experienced acute food insecurity due to conflicts, more than 23 million people in 8 countries/regions due to extreme weather conditions, and more than 30 million people in 24 countries/regions due to economic shocks. The Food Price Index is 158.50 in April 2022 calculated by FAO. In the same period, Turkey's Food Price Index was calculated as 375. Also, annual food inflation is seen that it is 94.65% in Turkey. In the same period, the average food inflation in the world is 14.50%.

The aim of the study is to determine the reflections of the effects of the global food crisis in Turkey, and to develop strategies to eliminate the negative effects of the food crisis in Turkey. In the study, the strengths and weaknesses, opportunities and threats of the Turkish agricultural sector were determined by SWOT analysis and suggestions were developed to prevent Turkey from being affected by the global food crisis. In the study, it was concluded that the Turkish agricultural sector has the potential for self-sufficiency and that it will be affected by the global food crisis at the lowest level, with a macro-level optimization study in agricultural production and the elimination of structural problems in the economy.

Keywords: food crisis, food security, self-sufficiency, SWOT analysis

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1. Introduction

Food supply has been the most important occupation of life since the creation of living forms. Sustainability of the life is not possible without water and food. People have struggled to meet their food needs as well as to protect themselves against the dangers that may come from the outside the World during their lifetime. The food supply and the amount of food per capita have started to decrease with the increasing population and the decrease in resources.

Due to the increase in food prices the decrease in food consumption and the increase in the number of hungry population are called the global food crisis. The reason why the increase in food prices is called the food crisis is the significant increase in the number of people who are undernourished in a short time. According to the definition of the Food and Agriculture Organization (FAO), undernourishment or chronic hunger is the situation in which the amount of food taken daily cannot provide the energy required for daily activity (Cengiz and İlhan, 2016).

The food crisis continues to affect the World day by day due to factors such as increasing population, climate changes, rapid migration from villages to cities, inequitable income distribution, and increase in commodity prices. The main reasons for the emergence of the food crisis are related to the change in the supply and demand balance. The excessive increase in demand and the inability to achieve the desired increases in supply are the reasons for the emergence of the global food crisis.

Turkey is able to maintain its self-sufficiency in many agricultural products, especially vegetables and fruits. However, there is a foreign dependency, especially in vegetable oils and pulses. Changes in agricultural input costs have been directly reflected in product prices in Turkey for many years. The most important reason for this is the inadequacy of agricultural support policies. Due to the high production costs of agricultural products, the chance of competition is decreases in the world markets.

The aim of the study is to determine the reflections of the effects of the global food crisis in Turkey and to develop strategies to eliminate the negative effects of the food crisis. In the study, the strengths and weaknesses, opportunities and threats of the Turkish agricultural sector were revealed and determined by SWOT analysis and suggestions were developed to prevent Turkey from being affected by the global food crisis.

2. Materials and method

The material of the study consists of sector reports, articles, meeting results and data obtained from statistical data sources. The macro data obtained in the study are summarized with Tables and Figures.

SWOT Analysis is a strategic technique used to identify the strengths and weaknesses of the institutæion, technique, process, situation or person, and to identify opportunities and threats arising from the internal and external environment. This technique requires setting the goals of the industry or business enterprise and identifying the internal and external factors, positive or negative, to

achieve the goal. This method was developed in the 1960s by Harvard University professors Learned, Christensen, Andrews, and Guth.

SWOT analysis involves examining the environmental factors, determining the opportunities that are important for the future of the sector or the business, detecting the activities that may pose a threat to the business and taking precautions, revealing the strengths of the business and determining in which situations, conditions and environments they may need to be used, determining the weaknesses of the business and taking precautions. to be taken, to analyze the difficult situations where the weaknesses can bring down the business in the face of possible threats, etc. encompasses strategic and planning approaches.

The way SWOT analysis is applied and the questions to be answered can be summarized as follows;

- Strengths are identified. Situations that ensure the success of the companies and contribute to the current situation are determined. Strengths can also be thought of as things that are often done better than competitors. The company's strengths are revealed in line with the opinions of the people who participated in the analysis
- Weaknesses are analyzed. The factors that prevent the company from being more successful are determined. The sensitive points of the company are determined. Factors that reduce the impact of the company are determined. Taking into account the mistakes made by the company, the errors that cause this are determined.
- Opportunities are determined. Job blindness is very common in companies. Identification of opportunities is done with the aim of preventing the company from getting caught in this situation. Opportunities are points that should be in front of the company's eyes and should not be missed. The issue of opportunities is critical. If this issue is neglected and a company's opportunity is realized by another competitor, the opportunity can turn into a threat.
- Threats It is the identification of threats in front of the company. Identifying threats is vital for companies to take action. However, these threats should be determined multi-faceted. Threats do not come only from competitors. Sometimes a company that is not your competitor may appear as a serious threat tomorrow. Threats section is a section that needs to be studied specifically and often cannot be duly extracted (Unakitan and Abdikoğlu, 2019)

3. Research findings

In the recent period, factors such as climate change, the Covid-19 pandemic, the increase in fuel costs and the war between Ukraine and Russia have been effective in the emergence of the food crisis in the world.

According to the UN's "Global Food Crisis Report" published in 2022, it was pointed out that 139 million people in 24 countries/regions experienced acute food insecurity due to conflicts, more than 23 million people in 8 countries/regions due to extreme weather conditions, and more than 30 million people in 24 countries/regions due to economic shocks.

According to the data announced by FAO, when the number of people suffering from chronic malnutrition in the last 20 years is examined, it is seen that the highest figure was 838 million people in 2002. This figure has been decreased

to 570 million in 2013. However, the number of undernourished people in the world has been increased as of 2019 and reached 768 million people in 2021. While it is unacceptable that the rate of undernourished people is even 1%, the best rate was 7.6% in 2017. As can be seen in Table 1, the rate of undernourished people has been rose again to 9.8% in 2021.

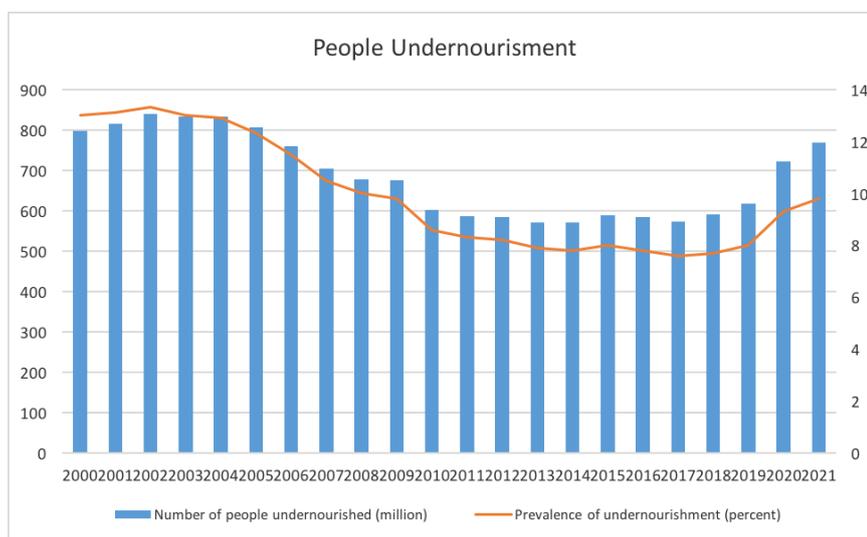


Figure 1. People undernourishment

Table 1 shows the results in which the rates of undernourished people in the world are grouped according to the size of the country's economies. As might be expected, the proportion of undernourished people in low-income countries has risen to over 30%. This rate is around 13.8% for lower middle income countries and 2.7% for upper middle income countries. The rate in Turkey is below 2.5%, as in high-income countries.

Table 1. Prevalence of undernourishment (%)

	World	Low income economies	Lower-middle-income economies	Upper-middle-income economies	High-income economies	Türkiye
2000	13.0	35.1	17.5	9.9	<2.5	<2.5
2005	12.3	30.6	18.8	6.8	<2.5	<2.5
2010	8.6	23.9	13.7	3.0	<2.5	<2.5
2015	8.0	24.9	12.1	<2.5	<2.5	<2.5
2016	7.8	25.7	11.4	<2.5	<2.5	<2.5
2017	7.6	25.5	10.9	<2.5	<2.5	<2.5
2018	7.7	26.5	10.9	<2.5	<2.5	<2.5
2019	8.0	27.3	11.2	<2.5	<2.5	<2.5
2020	9.3	30.0	13.1	2.6	<2.5	<2.5
2021	9.8	31.4	13.8	2.7	<2.5	<2.5

Source: FAO, 2022b, 2022. Food Security Indicators

In the report prepared by IFPRI (International Food Policy Research Institute) in 2018, the consequences of the risk of hunger in the world for the years 2030 and 2050 are given. As seen in Table 2, with the effects of climate change, it has been estimated that 592 million people in the world in 2030 and 477 million people in 2050 will face the risk of hunger. It is noteworthy that these figures are mostly in developing countries. It has been estimated that 2.4 million people will face the risk of starvation in 2050 in Turkey.

Table 2. Prediction of the population at risk of hunger (million)

	Not including climate change		Including climate change	
	2030	2050	2030	2050
World	528.2	405.8	592.3	476.9
Developing countries	513.3	392.2	576.7	461.1
Developed countries	14.9	13.6	15.7	15.8
Türkiye	2.2	2.4	2.2	2.4

Source: IFPRI, 2020. 2018 Global Food Policy Report

The Food and Agriculture Organization (FAO) reported that global food prices reached an all-time high in the first months of 2022, mainly for vegetable oils and grain products, as the Ukraine-Russia war disrupted supply.

The Food Price Index is 158.50 in April 2022 calculated by FAO. It is seen that global food prices have increased by 29.8% In the same period, Turkey's Food Price Index was calculated as 375. As seen in Figure 2, although the Food Price Index in Turkey was below the world prices until 2015, it started to increase after 2015 and reached record levels in 2021 due to the inadequate economic policies.

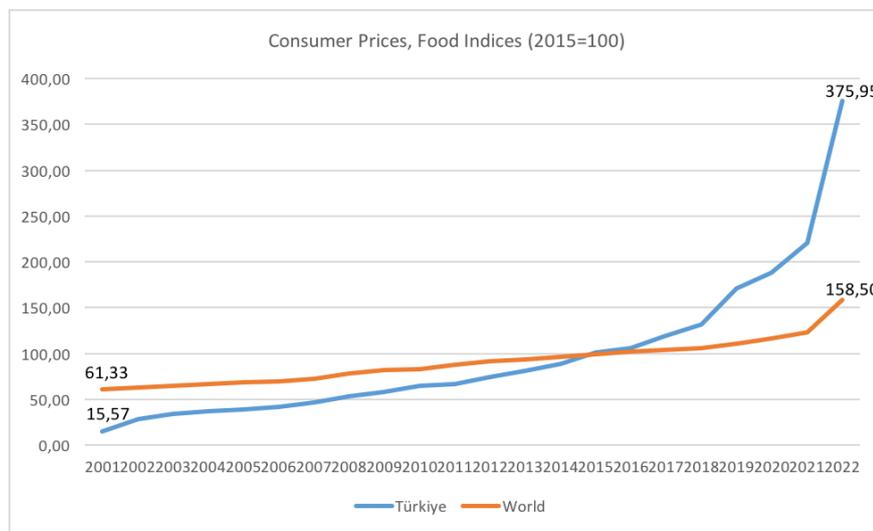


Figure 2. Food price indices

In Figure 3, price indexes are given on the basis of product groups. It is seen that the most effective product groups on the general food price index are vegetable oils, cereals and sugar. When the periods are examined, it is seen that the vegetable oil and grain indices increase the general index values in many years. It is observed that the sugar price index increased considerably in 2011. However, it is noteworthy that in 2022, the price index of vegetable oils rose to 213 points by being much higher than the general index. The most important reason for this is that Russia and Ukraine, the two largest vegetable oil exporters in the world, are at war with each other. This war has increased energy prices as well as the supply-related increase in agricultural product prices.

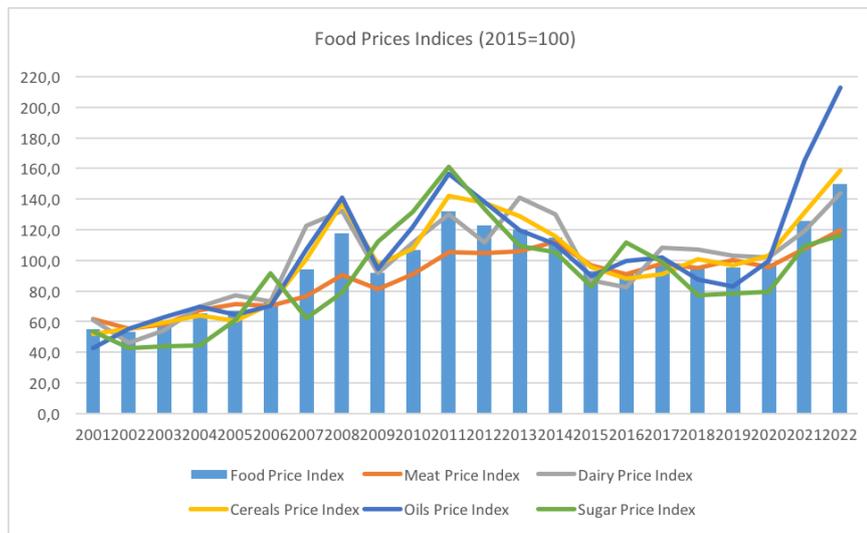


Figure 3. Food price indexes by product groups

When the annual food inflation in Turkey is analyzed, it is seen that it is 94.65%. In the same period, the average food inflation in the world is 14.50%. Accordingly, food prices in Turkey have increased 80% more than the world's food prices in the last year. The general inflation rate in Turkey is 79.60 as of July 2022 (TÜİK, 2022)



Figure 4. Food price inflation

When the changing of agricultural land in Turkey are examined, it is seen that the total land has shrunk by 3 million hectares after 2000. The most important reason for the shrinkage of agricultural land is the metropolitan law numbered 6360, which entered into force in 2012. With this law, 14 provinces have metropolitan status and all villages connected to cities have turn into neighborhood status. Agricultural lands close to the city centers turn into the residential land. In this context, the most important reason for the shrinkage is the opening of agricultural areas for construction due to the increasing population and rapid urbanization. In Table 3, it is seen that the cereals and other field crops land have shrunk by 2 million hectares and the vegetable land by 150 thousand decares. On the other hand, fruit land have increased by 900 thousand decares.

Table 3. Agricultural land in Türkiye (thousand hectares)

Years	Total utilized agricultural land	Cereals and other crops Sown area	and other Fallow land	Vegatable gardens	Fruits ans spice crops	Meadows and pastures
2002	41196	17935	5040	930	2674	14617
2010	39011	16333	4249	802	3011	14617
2011	38231	15692	4017	810	3091	14617
2012	38399	15463	4286	827	3201	14617
2013	38423	15613	4148	808	3232	14617
2014	38558	15782	4108	804	3243	14617
2015	38551	15723	4114	808	3284	14617
2016	38328	15575	3998	804	3329	14617
2017	37964	15498	3697	798	3348	14617
2018	37797	15421	3513	784	3457	14617
2019	37716	15398	3387	790	3519	14617
2020	37762	15628	3173	779	3559	14617
2021	38089	16062	3059	755	3591	14617

Source: TÜİK, 2022b. <https://data.tuik.gov.tr/Kategori/GetKategori?p=tarim-111&dil=1>

Turkey has self-sufficiency in many agricultural products, especially vegetables and fruits. However, there is a foreign dependency, especially in vegetable oils and pulses. Sufficiency rate of selected crops are given in Figure 5 (TUIK, 2022b). Values above 100 percent indicate that sufficiency is achieved, and values below 100 percent indicate that sufficiency cannot be achieved. It is seen that Turkey has sufficiency in wheat and sugar which have strategic importance. On the other hand, self-sufficiency cannot be achieved in products such as sunflower oil, rice, lentil and maize. Soybean has a serious foreign dependency of 95%.

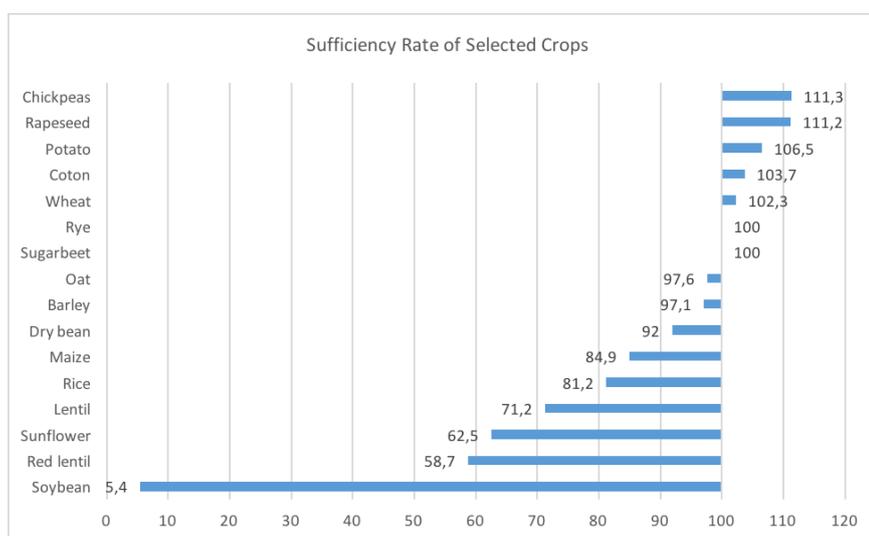


Figure 5. Sufficiency rate of selected crops

When the self-sufficiency rates of animal products are examined, it is seen that self-sufficiency is achieved in chicken meat, eggs and milk. On the other hand, there is a small rate of insufficiency in red meat, such as 3.5%. The milk sufficiency rate is seen at the exact limit. It is known that dairy animals are sent to slaughter due to the excessive increase in feed prices recently. It is estimated that the sufficiency rate in milk will decrease in the near future.

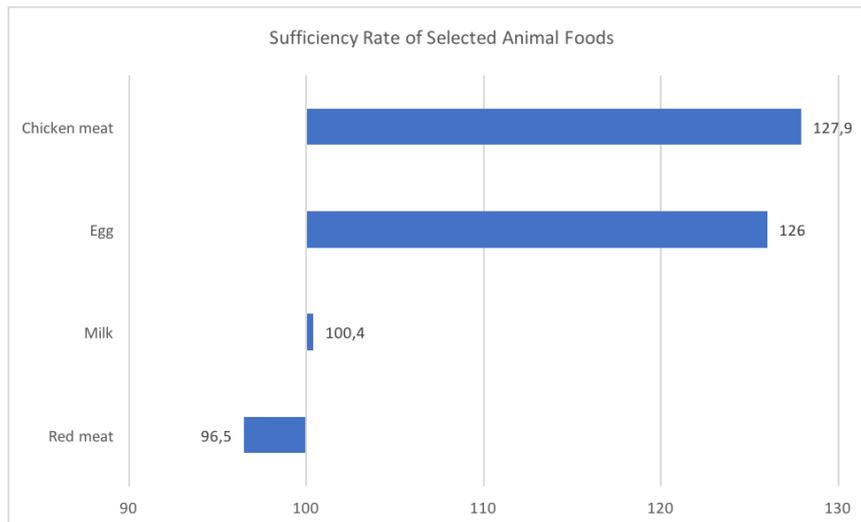


Figure 6. Sufficiency rate of selected animal foods

3. Results

Until this part, the dimensions of food insufficiency and the rise in food prices in the World and in Turkey have been discussed. A comprehensive situation analysis should be made for the Turkish agricultural sector in order to prevent Turkey from facing food shortages and to prevent the increase in food prices. In this part of the study, strategies have been determined to prevent Turkey from being affected by the global food crisis with SWOT analysis.

As seen in Table 4, the strengths of Turkish agriculture can be counted as geographical location and climate advantages, having sufficient soil and water quality, rich biodiversity and preserving the importance of regional location.

The weakest element of Turkish agriculture is that the farms are small-scale (60 decares/enterprise) and the cultivated lands are multipart. In addition, factors such as lack of capital, lack of agricultural production plans, insufficient agricultural supports, foreign dependency on inputs such as seeds, pesticides, fertilizers and diesel, and insufficient R&D are other important weakness.

The most important factor that threatens production in the agricultural sector is the rapid increase in input costs. Increases in production costs cause the young population to leave from the agricultural sector. Due to external conflicts, disruptions have been experienced in the supply of commodity. In addition, there are factors such as the misuse of agricultural lands that have been threatening the agricultural sector for a long time, the division of the lands into small pieces due to the inadequacy of the inheritance law, and the unconscious use of chemicals in agricultural production.

One of the leading opportunities in the future of the Turkish agricultural sector is the conscious ownership of the agricultural sector by the young population. International market opportunities have potential especially for vegetable and fruit marketing. Turkey's geopolitical position maintains its importance. It is an important opportunity to abandon the economic policies that are contrary to the traditional view and to return to the generally accepted

(Orthodox) policies. In addition, the possibility of updating agricultural support policies is seen as an opportunity.

Table 4. SWOT analysis

Strengths	Weakness
Availability of sufficient agricultural land	Small and fragmented farms
Rich agricultural production potential	Lack of investment capital
Presence of uncontaminated soil and water	Lack of macro production plans
Geographical location and land structure	Insufficient agricultural support
Regional location and logistics advantages	Foreign dependency on agricultural inputs
	Insufficient R&D capability
	Insufficient marketing and storage infrastructure
Opportunities	Threats
Geopolitical location	Rising input costs
Availability of lands that can be economically irrigated	Drought and irregular rains
Increasing international market opportunities	Unconscious use of water resources
Increasing youth population	Misuse of agricultural lands
Employment potential of well-educated agricultural engineers	Migration of young people from village to city
Adoption of scientific approach in macroeconomic policies	Effects of the Covid 19 pandemic
Restructuring of agricultural support policies	Inability to supply foreign-dependent products
	Failure of the inheritance law to prevent land fragmentation
	Conflicts in the world

4. Conclusion

Turkey is a country where many agricultural products can be produced with its geographical location, climatic conditions and soil structure advantages. Although there has been an increase in the misuse of agricultural lands in recent years, production has been increased in some products thanks to newly developed seeds. However, there is a lack of production in some products such as wheat, vegetable oil seeds, corn, soybean and it is necessary to expand the production areas of these products with a good production planning. For this, new laws should be enacted that will not allow the shrinking of existing agricultural lands.

Recently, the problems experienced in the supply of foreign-dependent products have increased the domestic prices significantly. Due to the impact of the Covid-19 pandemic, there were interruptions in the labor supply, which negatively affected the production of fruits and vegetables. Due to the increase in input prices, small-scale producers had to save money on fertilizers and pesticides. Due to rising fuel prices, farmers in some regions gave up production and the lands remained empty. The young people, who could not obtain sufficient income from agricultural production, started to migrate from the villages to the cities. These

factors are important factors that threaten the Turkish agricultural sector. The most important factor in the increase in foreign-dependent input costs is the devaluation of the Turkish Lira. It is necessary to abandon the economic policies that are contrary to the traditional view, and to return to the generally accepted (Orthodox) economic policies.

Micro-credits should be expanded in order to eliminate the capital insufficiency in small-scale agricultural enterprises. Although the current agricultural supports are implemented under various titles, the amount of support distributed to farmers does not even exceed 1% of the national income specified in the Agriculture Law No. 5488. Since 2006, the highest 0.6% share has been given as support. The realization of this support system will provide a significant improvement in agricultural production.

Structural problems that have been going on for a long time in the agricultural sector should be solved quickly. The first of these is to increase irrigation opportunities. It is observed that there is a decrease in the underground and surface water potential due to climate change. In addition, improvement studies should be carried out in order to reduce the salinity in the soils due to excessive irrigation in irrigable areas.

Another important problem in the agricultural sector is the inadequacy of R&D studies. Foreign dependency is quite high, especially for vegetable seeds. In order to develop R&D opportunities in the agricultural sector, the budgets allocated to research institutions and universities should be increased and long-term and low-interest loan opportunities should be offered to the private sector.

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IDENTIFYING CUSTOMERS VALUE IN CHAIN
HYPERMARKETS: SMART MARKETS

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Abstract

All businesses want to use information about their customers to make smarter decisions. First of all, the marketer should know the individual identities of their customers. Then, in order to create better experiences in the market and to increase customer value, the company takes different marketing, sales, distribution and production decisions related to different customers. Smart Markets works with every level and every unit to provide a unique experience in the markets. The advantages of trading can be discovered by taking control of the strategy and through a boutique firm that delivers what is needed with maximum results.

The essence of managing customer relationships is to treat different customers differently: The first requirement for any business to enter into such competition is that it recognizes a customer in a way that distinguishes it from the other. The main purpose of the modern-day marketing program should be to accumulate customer information by encouraging shoppers to introduce themselves. The main purpose of collecting customer information is, of course, the development of closer and more lucrative relations with individual customers. In order for these to happen, it is essential that the entity makes a reliable relationship with the customer and enables them to share their information easily.

The purpose of this study is to reveal the role of intelligent markets in managing the relations with customers in chain hypermarkets. In this study, which is planned in this way, the road map which the enterprises will follow in order to have the ability to collect, edit, merge, integrate and distribute the customer information in real time to any individual or group within the scope of the operation is shown with examples.

As a result, Chain Hypermarkets closely monitor their customers' every move, no matter if they pay by card or cash to be part of a loyalty plan.

Keywords: smart markets, chain hypermarkets, collecting customer information, customer value

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1.Introduction

Hypermarkets have played an important role in food distribution since their existence. This distribution model has been widely accepted by both companies and consumers. The evolution of these stores in recent times has been quite dynamic based on good combination of supply, proximity and service (Aseminachin, 2022; Shili, and Sethom, 2022). Retailers are increasingly valued by consumers compared to other commercial formats (Mortimer, 2020), which has triggered the gradual disappearance of traditional markets. Consumers have different needs and they want to meet those needs. Maslow (1943) formulates a hierarchy of human needs and argues that when one's basic needs are met, one develops higher needs and wants. It finds a food need among these needs, and the importance of supermarkets and hypermarkets is great here. These stores cater to people's food needs, so their target audience includes the entire population. It is an extremely competitive market. In these modern times, different chains are using all sorts of strategies to increase their sales and the sales process is almost becoming a science. This is because the merchandising process involves psychology, science, and business studies that seek to gain insight into consumers' tastes, habits, needs, and ways of thinking (Mártinez, 1997). For this reason, and in these times of intense competition, using "smart market" applications (Mekruksavanich, 2019; Aseminachin, 2022) to try to gain an edge over other competitors can provide a great advantage and convenience.

Hypermarket chains have been one of the main topics of information systems (IS) research for the past three decades (Anzelia and Hasugian, 2020). The focus of this study is smart markets. This phenomenon is attracting considerable interdisciplinary interest from researchers in the marketing science, operations research, and economics communities. The idea of smart markets revolves around using theoretically supported computational tools to both understand the characteristics of complex trading environments and help human decision makers make real-time decisions in these complex environments.

All Supermarkets and Hypermarkets use information about their customers to make smarter decisions (Anzelia and Hasugian, 2020). But for most traditional marketing decisions and actions, information was really only needed at the aggregate or market level. That is, any marketer needed to know the average demand for a particular product feature within the potential customer population, or the price range that this market population would find attractive. However, in today's competitive environment, this information is not enough. Hypermarkets then use this information to plan production and distribution, as well as marketing and sales activities.

The purpose of this study is to reveal the role of intelligent markets in managing the relations with customers in chain hypermarkets. In this study, which is planned in this way, the road map which the enterprises will follow in order to have the ability to collect, edit, merge, integrate and distribute the customer information in real time to any individual or group within the scope of the operation is shown with examples.

2. Problem Statement and Research Questions

The main purpose of today's marketing program is to enable hypermarkets to get to know their customers well and to develop marketing strategies that will offer suggestions and offers in line with their wishes and expectations. Collecting customer information is, of course, the most important way to develop closer and more profitable relationships with individual customers. In order for these to happen, it is essential that the entity makes a reliable relationship with the customer and enables them to share their information easily.

In order to be able to answer the problem statement the following sub-questions are formulated:

1. *What are the ways to segment customers and identify leads?*
2. *What data is needed to identify a customer?*
3. *What are Questions that Determinate Customer Value in Chain Hypermarkets?*
4. *What factors determine the Consumer Decision Process?*
5. *What should be the roadmap of smart markets in managing relations with customers in chain hypermarkets?*

3. Identifying potential customers

Identifying potential customers is crucial to all hypermarket's success. If the business is to be enlarged, it should be determined which segments of the population will be targeted. Identifying the right leads is key to business growth. No customer is the same as another. Every client differs based on their needs, characteristics, interests and many other factors. Identifying leads allows marketers to address each customer-specific need group in a targeted way. In other words, taking a step-by-step and structured approach to identifying the market helps to reach the right audience so that marketing efficiency can be increased effectively.

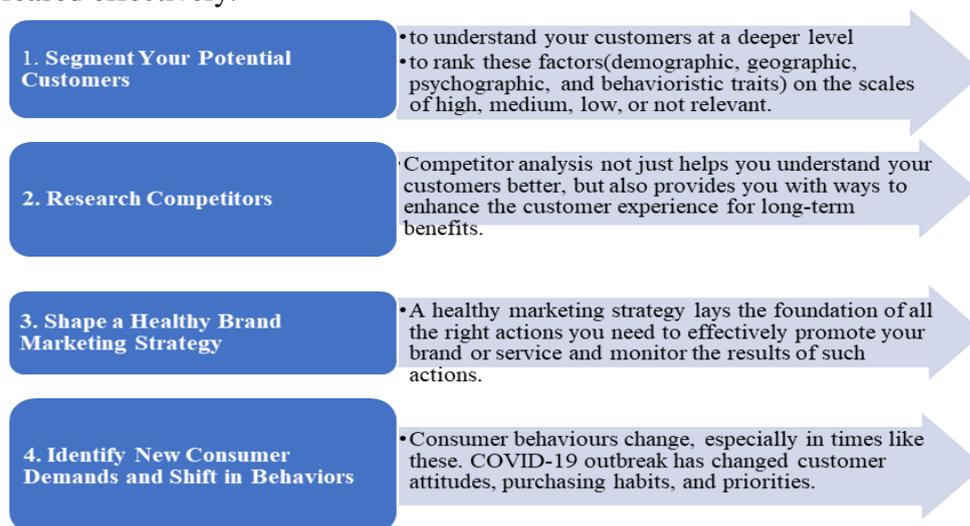


Figure1. Ways to segment customers and identify leads (Ruff,2022)

Segmenting customers is the first step in identifying and understanding the potential customer base (Figure 1). Customer segmentation means dividing customers into groups based on demographic, geographic, psychographic and behavioral characteristics. Segmentation allows to understand customers on a deeper level. It also helps determine what is important to customers or whether factors such as location, price, customer service and quality are important. Segmentation allows to rank these factors on their high, medium, low, or irrelevant scale. This segmentation provides an easy and effective way to organize and manage the relationship with customers. This process further simplifies your personalization and sales efforts to help increase conversions and customer loyalty.

Geographical segmentation groups potential customers by location, helping to know the local customs, climate and expectations of customers.

Customers can be divided into the following segments: region, climate, dietary preferences, rural or urban, behavioural

It works by grouping customers based on their behavioural data and how they interact with the hypermarket. Behavioural segmentation helps to understand the purchasing habits and patterns of potential customers. Moreover;

- *Number of times the customer bought from you*
- *Monthly, weekly and quarterly purchasing calendar*
- *The amount of product or service purchased*
- *How long does it take for buyers to make a purchase?*
- *Reason or reason for purchase*

Once you have an idea of what you're looking for, it can segment customers accordingly and build a customer profile based on the findings. The customer profile is key to formulating appropriate marketing strategies that will help succeed in the target market. Buyer profiles or personalities are extremely useful, especially when targeting strategically important segments of the market.

Competitor analysis will not only help to better understand customers, but also provide ways to improve customer experience for long-term benefits (Figure 1). Thorough research on competitors will reveal answers to the following relevant questions:

- *What segments do my competitors cover or ignore?*
- *How much are customers willing to pay your competitors?*
- *What is the market position of your competitors?*
- *What are customers discussing on social media? Which channels do customers use the most?*
- *What weaknesses or strengths can you identify with customer reviews?*

Identifying the weaknesses of competitors helps to take advantage of new opportunities. Reviewing what competitors are doing and succeeding provides accurate data points to shape the marketing plan.

A successful marketing strategy lays the foundation of all the right actions you need to effectively promote your brand or service and monitor the results of such actions (Figure 1). An effective marketing strategy comprises a set of

elements to take people on a journey from knowing your product to making the final purchase. One of the main reasons to segregate customer segments into targeted groups is to create a custom marketing plan for each group. With the buyers' persona and other data at your hand, it becomes easier to identify and execute strategies to grow your brand awareness and equity.

Consumer behaviours change, especially in times like these (Figure 1). COVID-19 outbreak has changed customer attitudes, purchasing habits, and priorities. Additionally, the ever-changing landscape of consumer buying behaviours (Shili and Sethom, 2022) is also influenced by factors like sustainability and health perspective.

3.1. Identifying Customers

It should be noted that the purpose of identifying customers is to facilitate the development of individual relations with them. The hypermarket should undertake all customer identification activities. These activities are (Peppers *et al.*, 2016):

1. Identify: It is necessary to decide what information will constitute the identity of the real customer: Name and address? Mobile number? E-mail address? Home phone number? House information?

2. Find: Hypermarkets' customers are out. An omnichannel approach is essential, involving information from every possible channel, such as call centres, websites, social and in-store interactions.

3. Collection: The priority of this stage should be to gather the information needed to identify customers and classify their behaviour. Businesses with a website and online customer service have an advantage in that customers can enter and protect their own information when purchasing their products.

4. Connectivity: With the information collected and stored centrally, the next step is to make this information available to staff in the most useful format.

5. Integrate and Recognition: It is a recognizable integration of the centrally collected and stored information for the entire operation.

6. Store: The most effective way to store and manage customer information is to have a relational database - a central customer database should be created to ensure that all systems operate from the same source and ensure that everyone has up-to-date information.

7. Update: All customer data

8. Analyse: By using data mining tools in spreadsheet programs that analyse data to identify patterns or relationships, you can begin to profile customers and develop sales strategies.

9. Make it available

10. Securing and protecting

3.2. *What data is needed to identify a customer?*

Directly supplied data consists of three obvious types (Ruff, 2022):

Behavioural data: Such as customers' buying and purchasing habits, interactions with the company, communication channels used, language used, product consumption and company wallet share.

Attitudinal data: reflecting attitudes about products, such as satisfaction levels, perceived competitive positioning, desired features, and unmet needs as well as lifestyles, brand preferences, social and personal values, opinions and the like.

Demographic data: gender, education level, age, income, marital status, household composition, home ownership, and so on.

4. The Roadmap of Smart Markets

The essence of managing customer relationships is to treat different customers differently. The first requirement for any business to enter into such competition is that it recognizes a customer in a way that distinguishes it from the other. The main purpose of the modern-day marketing program should be to accumulate customer information by encouraging shoppers to introduce themselves. The collecting customer information is, of course, the development of closer and more lucrative relations with individual customers. In order for these to happen, it is essential that the entity makes a reliable relationship with the customer and enables them to share their information easily.

In the table 1 shows the elements of the consumer decision process (Puccinelli *et al.*, 2009; Aldin and de Cesare, 2011).

Table 1. The Consumer Purchase Decision Process

	Need Recognition	Information Search	Evaluation	Purchase	Past-Purchase
Goals schema and information processing	x	x	x	x	x
Memory		x	x		
Involvement	x	x	x		
Attitudes			x	x	x
Affect	x	x	x	x	x
Atmospheres			x	x	x
Attributions and choices			x	x	x

Sherman (2012) emphasized that retail sales forecasts and forecasting buyer behaviour are extremely important as retailers apply customer analysis to improve customer relationship management and meet customer demands and expectations.

Therefore, it is necessary to select the elements that create for the customer value and the questions that will shed light on this (Puccinelli *et al.*, 2009).

Questions Determining Customer Value (Puccinelli *et al.*, 2009) in Chain Hypermarkets are shown in Table 1.

Table 2. Questions that Determinate Customer Value in Chain Hypermarkets

Questions
<p>Goals</p> <ul style="list-style-type: none"> • How does congruity between the shopping goal and the retail environment affect consumers' evaluation, search, and shopping behaviour? • How do environmental factors (e.g., economic conditions) influence consumer motives? • How might the retail context facilitate shopper need recognition through in-store communications (e.g., point-of-purchase displays)? <p>Memory</p> <ul style="list-style-type: none"> • Which types of in-store activities can hypermarkets use to increase involvement (e.g., sampling, trials)? • What is the effectiveness of offering food samples to increase involvement, trial, purchase, and satisfaction in grocery settings? • Can hypermarkets increase experiential trial through merchandise, such as when music stores allow consumers to sample and listen to music prior to purchasing CDs? • Are experiential trials more effective when they include a host of products? • What are the benefits of deeper processing for hypermarkets that carry more merchandise and consumers who shop there? <p>Attitudes</p> <ul style="list-style-type: none"> • How should hypermarkets or brand managers update their attitude models to reflect the balance between prior store/brand associations and new information? • What are the trade-offs associated with different attitude assessments (e.g., conjoint versus Likert scales), and which best reflect consumers' evaluations? • If attitudes are stored in memory, what cues can hypermarkets use to evoke positive prior assessments when managing bad news or crises? • How do hypermarkets establish equity after they have reverted to a "sale after sale" mentality? • How might hypermarkets use research on reinvigorating old brands to save brands that once had both high awareness and very positive associations, when they have become less positive but awareness remains high? • How can hypermarkets employ attitudinal measures to predict the subsequent behavioural intentions and actions of their prospects and consumers? <p>Affect</p> <ul style="list-style-type: none"> • What makes a shopping environment more or less engaging/arousing to customers? What is the role of product assortment, service, and atmosphere in generating arousal/engagement? In what circumstances does customer engagement translate into higher sales and/or profits? • What can be done to make the shopping experience fun, desired, and a treat? • How do affect-laden signage/displays/end-caps influence consumer evaluations and choice? Atmospheric

- What role does consistency between exterior atmospheric cues (e.g., parking lot, store exterior, signage, and window treatments) and interior? atmospheric cues (i.e., ambient, design, social) play in shopping?
 - What role does consistency between the atmosphere of the store and its Web site play?
 - Do thematic designs within stores serve as attracting or avoidance destinations?
 - What is the role of emerging ambient elements (e.g., scent, temperature)?
- Attributions
- How can hypermarkets increase customer satisfaction through attributions to retail employees for positive events?
 - What tactics can prevent customers from blaming the hypermarket, or how, in the event of a real mistake, the hypermarket can help the customer forgive the hypermarket?

Customers value friendliness and attentive treatment, and these must be achieved in order to be successful, especially in a competitive market. Smart markets to use information about their customers to make smarter decisions (Shili and Sethom, 2022). As artificial intelligence is widely used by all sectors, technological change in the world is accelerating. Artificial intelligence will be discussed in the next 20-30 years. Technology companies will compete with each other to integrate whatever humanity uses into new technologies (Mekruksavanich, 2019). Recently, both shopping and eating and drinking habits of consumers have started to change thanks to smart supermarkets, especially in the retail sector.

For example, some supermarkets initially made a difference with fast delivery of fresh products (fruit-vegetables, meat and seafood products, dairy products), smart rail systems in the market, fresh restaurants in the market, and fast checkout counters. They can cook the fish selected in the market and offer opportunities to eat it with pleasure. In fact, while it is possible to buy that fish over the internet, they can also serve it to homes as cooked.

Many markets can already offer these services to their customers under different service names. They even know how often their customers shop and what they buy with their loyalty cards. This data cannot be used effectively in many markets. Supermarkets do not send anything other than general announcements to their customers with loyalty cards via spam SMS. Moreover, the majority of those who shop at traditional supermarkets do not have such a card, so many consumers may not be among the loyal customers of the grocery stores.

However, with the effect of the recent pandemic, especially the spread of online shopping has changed this situation. At this point, with online memberships or loyalty cards, the customer can know how much meat and how much fish he eats per month. It can also know whether you like the meat cooked or undercooked. Customers are also informed about the campaigns on the most consumed products. In other words, being a smart consumer warns you to consider the prices of the products. In this way, it continues to change the shopping habits of consumers.

Applications were made to make it easier for people to pay in this way by establishing fast payment cashiers (Edwan *et al*, 2020). By getting their payments via their loyalty card or phone number application, their customers can know which products they buy and how often, at what intervals they shop online or at the supermarket, whether they like fish or meat, and how they like meat.

In summary, as in previous periods, hypermarkets are now doing the job of calling apprentices and shaking the basket. But now you can even schedule the time of your order. Since all these are returned through the application, the margin of error can remain at a minimum.

5. Discussion and Conclusion

In fast moving consumer goods, if companies that cannot become a brand within 5-10 years cannot put their products on the shelf, they will either become contract manufacturers or close their factories and become workers somewhere. It can be said that the same end awaits restaurants or that smart supermarkets will have to compete (Edwan *et al*, 2020). Whether smart market applications are fully used by hypermarkets, street restaurants will not be as close to their customers as smart supermarkets, where consumers are always at hand and do their home shopping. Unless food companies are branded and hit the shelves, they won't have a chance to hit the shelves in 10 years. Since consumers won't be going to the markets very often in the coming years, they will rarely encounter new brands. Provided it has not already become a Brand, Smart Hypermarkets will not accept those companies or they will have to pay very high amounts. If brand X pasta enters the consumer's cabinet, brand X pasta will continue to enter. Thanks to the artificial intelligence they have, the hypermarkets, called smart markets, will know which brand of pasta their customers consume and will automatically continue to send that brand.

With its smart devices in kitchens (Minh and Khanna, 2018), this artificial intelligence will interact with devices in the kitchen. Self-ordering of appliances in our kitchen (Shweta *et.al.*, 2013) which was once thought to be impossible, may soon happen. Very soon, our refrigerator will contact the hypermarket who uses this type of artificial intelligence application (Mohamed and Ahmed, 2014), will order the missing products at home, and the consumer will only give approval. It will not look for a new brand, it will continue to use what it already uses. The transportation costs of the companies to the consumers will increase, so in the future, it will be inevitable to either become a brand or be a subcontractor for existing brands.

With smart markets meeting artificial intelligence, supermarkets around the world are testing technologies that revolutionize the supermarket experience and bring our offline behaviour into the digital realm. For example, companies like Amazon have anticipated the needs of their customers and tried to make their plans around it (Alex, 2022). It knows that most of the consumers do not like to pay the delivery charges. Hence, they have offered various options for free or minimum payment delivery.

With increased competition and supermarkets needing to work harder to win the favour of shoppers, technology will become the main feature of the way

we shop. The growing popularity of online grocery shopping and click-to-collect services will change how consumers do their weekly shopping. Incorporating predictive technologies into the online shopping experience allows consumers (Fan *et al.*, 2020) to access discounts on their favourite brands or reorder the same essential items each week without having to add them to the cart individually. These features have major implications for convenience (Goi'c *et. al.*, 2021). For example; Let's say you buy two packs of milk, a bucket of yogurt and a bag of delicious red apples via a smartphone app on your way home each week. Then, the next time you log in to grocery shopping, your favourite items are already in your cart, ready to check out, and "Forgot toothpaste?" with a reminder. Using data collected from your previous purchases, hypermarkets can understand what you've bought and how often, and send you friendly reminders when it's out (Fan *et al.*, 2020). The days when you realize that you forgot to buy toothpaste on the way home will be in the past.

While data-driven technologies allow consumers to shop with ease, these apps are also useful for supermarkets looking to manage inventory and reduce food waste (Ceryes *et al.*, 2021).

To combat these challenges, so-called smart markets, hypermarkets use consumer data to understand how to market and sell "unattractive" or "defective" products. For example, Australia's Woolworths is successfully doing this with their 'Odd Bunch' app, which aims to save ugly fruits and vegetables from the trash by reducing their prices (Mortimer, 2020). As society becomes more and more demanding, retailers are investing large sums to stay ahead of consumer trends. As a result, it will be possible to reach consumers in a very short time, which traditional supermarkets have not been able to reach with loyalty cards for decades. They will be able to know better than anyone else what the people in the field of activity are constantly eating and consuming. In the future, they may even issue health warnings to their customers. It can be said that dietitians can also undertake the work of artificial intelligence.

This article has summarized the roadmap that smart markets will follow in managing relations with customers in chain hypermarkets so that they have the ability to collect, organize, consolidate, integrate and distribute customer information in real time to any individual or group within the scope of operation. This overview stimulates additional research into the host of retailing issues discussed herein. These topics demand further research that can enrich existing retailing theory and practice.

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IMPORTANCE AND PLACE OF DIGITAL MARKETING IN
IMPROVEMENT OF WOMAN COOPERATIVES

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Abstract

The participation to labor force of woman is of great importance for country economy and the most important factor is cooperatives that ease women involved in economy. For that purpose, activities, facilitating services and support to cooperatives established by women, shall be carried out. As well, this is to improve for women's economical activities and involved in e commerce, strengthen. One of leading issue faced in cooperatives is marketing for product produced or services by own. When viewed from this stand point, Digital marketing platforms provide some facilitation to product of women cooperatives regarding quality, payment guarantee, standartisation. In this study, current view of women cooperatives in Digital Market Platforms is to be revealed by model of STP (Situation-Target-Path) and to state targets and strategies followed in this platform. Digital marketing provides women's cooperatives with both visibility and product/service marketing. Some of these cooperatives have their own websites. The strategies required to achieve the volume of marketing, secure sales and awareness provided by e-commerce sites and social media platforms, which are widely preferred today, will be revealed.

Keywords: Women cooperatives, digital marketing, STP Model

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1.Introduction

Women's participation into labour force and employment is an important element of sustainable development. Ensuring sustainability in economic growth, achieving social development and social justice in the full sense can be possible only through full and equal participation of women and men into all spheres of life as executors and beneficiaries of human-oriented sustainable development (Ministry of Family, Labour and Social Services, 2022). As gender equity is increasingly seen as a pillar for sustainable economic development and broad social well-being, alternative models to development which incorporate women's equality in work are needed. Rooted in values of self-help, equality, and equity, as well as economic growth through cooperation and democratic processes, cooperative enterprises are well-positioned to answer this call (ICA, 2022).

ICA's Gender Equality Committee (GEC) has published a statement. Cooperatives play a key role in promoting gender equality, adds the GEC. "By increasing women's access to resources and economic opportunities; by empowering them not only economically but also individually and socially to challenge the social and cultural norms; by creating an enabling environment for them to use those opportunities and assets to achieve equal outcomes to men," reads the statement (ICA, 2022a). In Turkey, women are encouraged and supported to establish women's cooperatives through official documents and policy documents. In addition, with the support of the private sector and non-governmental organizations, the problems experienced by women's cooperatives are eliminated and their development is ensured. The main problems encountered in women's cooperatives are marketing of products, pricing, determining the products to be produced and developing new products. Digital marketing contributes to women's cooperatives in solving these problems.

In this study, the contribution and importance of digital marketing to the development of women's cooperatives was evaluated.

2.Material and Method

The material of the study consisted of studies on women's cooperatives, reports, statistics, data and researches obtained as a result of the social media content review of women's cooperatives.

As digital marketing platforms; Instagram (2nd place), Trendyol (6th place) and Hepsiburada (10th place), which are among the most used mobile applications in Turkey according to the number of active users, were evaluated (Digital Report, 2021).

In this study, STP (*Situation-Target-Path*) Model was applied. With the model, the current status of women's cooperatives on digital marketing platforms has been revealed, and the targets and strategies to be followed in this platform have been determined.

STP or Situation-Target-Path is a very simple overview of the strategic planning method, it divides the planning process into three parts, starting with defining *the situation* – evaluating and analyzing the current situation and how it came about.

The second component – *Target* – involves defining goals and objectives for the future. Sometimes this is referred to as defining the ideal or desired future state.

The third component – *Path* – involved defining a map or path to achieve the goals or future state.

The STP model, or methodology is that it is simple, but accurately describes, at least in a general way, what strategic planning involves (Strategies by Design, 2022).

The Situation-Target-Process (STP) group problem-solving process is one of many methods that can help clarify the communication process and, therefore, the outcomes of any given discussion. The STP method is also one of the easiest methods to use and involves only 3 steps (Figure 1):

- 1) Define the current SITUATION;
- 2) Define the TARGET (agree on the TARGET before proceeding),
- 3) Define the PROCESS, i.e., how to get from the SITUATION to the TARGET (and agree on the PROCESS before defining the Action Plan—who will do what by when).

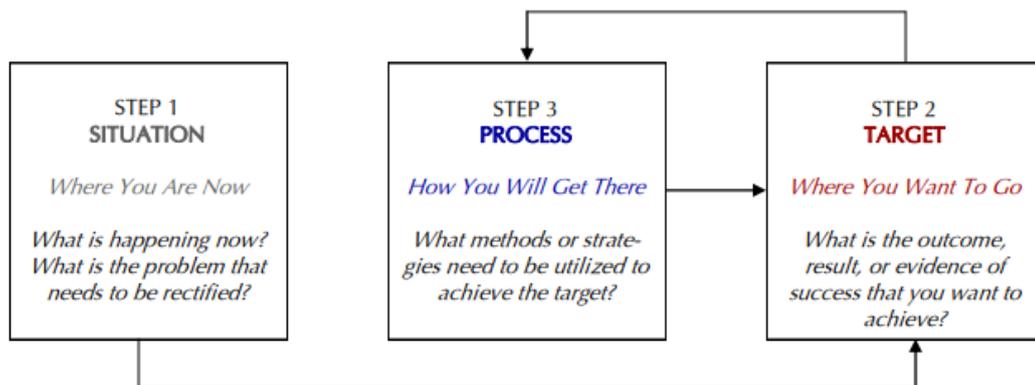


Figure.1 The Situation-Target-Process (STP) group problem-solving process (Strategies By Design, 2022)

3.Digital Marketing

With the revolution of the internet and mobile, the understanding of commerce and marketing emerge digital marketing. Digital marketing method is the name given to the marketing process of a company or brand in the digital environment. The pioneers of this efficient marketing method using digital channels are internet, social media and mobile platforms. Digital marketing is a set of strategies that enable to reach more potential customers, a more accurate audience, faster and more effectively.

Between traditional marketing and digital marketing; There are differences in terms of cost, time and continuity, communication and interaction, performance analysis and target audience reach.

Costwise; You are not in need of paying for most of the marketing processes or need a large budget.

Time and continuity; Thanks to digital marketing, your ads are on the air 24/7. An ad to be viral can quickly increase brand awareness.

Communication and interaction; There are communication options such as commenting and messaging, especially in the social media line of digital marketing. Those seeing the ads are able to express their opinions and become real customer by allaying the question marks.

Performance analysis; digital ads can be measured. The number of views and clicks is clearly visible. In product sale, It is measured how many people clicked on the advertisement and bought that product.

Target audience communication; In digital marketing, it can be adjusted to whom the advertisements will be shown. Thus, people interested in products and services can be reached directly.

Types of digital marketing; search engine optimization (SEO), content marketing, email marketing, social media marketing, affiliate marketing, influencer marketing, remarketing, search engine marketing (SEM), display ads (display advertising) and viral marketing.

The study dwell on social media marketing and affiliate marketing.

Social Media Marketing; Social media marketing is the process of promoting products and services on social networks. It is often preferred, as let reach large masses with a low budget. Advertisements presented on social networks provide maximum efficiency. Details such as interest, age, gender, region, feedback from potential customers as comments and messages can be adjusted.

Affiliate Marketing; In the type of affiliate marketing, which we can define as advertising or sales made by the user, there are two parties that earn a profit. The sales partner takes on different roles and enables the product or service to be sold through the marketing or proposition method. While the manufacturer earns from the product, the affiliate earns a commission, too. Influencer marketing and viral marketing methods can also be included in the affiliate marketing group (Pazarlama Teknikleri, 2022).

4. Women Cooperatives in Turkey

The sectoral distribution of women's cooperatives in Turkey is not different from the world. There are women's cooperatives that produce goods and services in one or more of the fields such as agriculture, textile, souvenirs, food and services. The women's cooperative movement, having a history of about 20 years, contributes to the economic strength of women by including them in working life and making them earn income. Moreover, meeting with other women and sharing their experiences and problems increases the social and psychological well-being of women.

Policy document about women cooperatives;

• “Works will be made to enable the women to organize under the roof of cooperatives, with the aim of improving their entrepreneurial ability and their participation in the economy as actors.” are among the strategic targets and activities in the Turkish Cooperative Strategy and Action Plan (2012–2016) (National Cooperative Union of Turkey, 2022).

- In ILO's Promotion of Cooperatives Recommendation, 2002 (No.193) "Special consideration should be given to increasing women's participation in the cooperative movement at all levels, particularly at management and leadership levels" advice is given to governments (ILO, 2022).

- The First 100-Day Presidential Action Plan; *Strengthening Activities of Women's Cooperatives*: The First 100-Day Presidential Action Plan includes the goal of strengthening women's cooperatives, ensuring their sustainability, improving their institutional capacities and increasing their visibility. In this context, "The Cooperation Protocol on Strengthening Women's Cooperatives" was signed on 30 October 2018 in cooperation with the Ministry of Agriculture and Forestry and the Ministry of Trade. The Protocol was renewed on 12 July 2021 for a period of 2 years. In order to ensure the local applicability of the aforementioned Protocol and to guide the implementers, the "Implementation Principles of the Cooperation Protocol for the Strengthening of Women's Cooperatives" was prepared for the Provincial Directorates of the Ministries and shared with 81 provinces. In this context, Women's Cooperatives Working Groups were established in provinces, annual business plans were prepared, various activities and meetings were organized. (Ministry Of Family, Labour and Social Services, 2022). With the protocol, it is aimed to strengthen women's cooperatives, ensure their sustainability, develop their institutional capacities, increase their visibility, expand them, and ensure effective participation of women in economic and social life through cooperatives, and women's participation in the management of cooperatives at a higher rate. One of the outputs of the protocol is the EU-financed "Empowerment of Women Through Cooperatives" Project (Ministry of Agriculture and Forestry, 2022).

Empowerment of Women through Cooperatives Project: With the aim of strengthening women's cooperatives, ensuring their sustainability, improving their institutional capacities, increasing their visibility and disseminating them, the "Empowerment of Women through Cooperatives Project" being carried out in cooperation with the Ministry of Agriculture and Forestry. The technical preparatory work of the project, which is planned to last 30 months, continues. Within the scope of the project; Studies will be carried out to inform women and men who have the potential to establish a cooperative, to become members in cooperatives, and to raise awareness, and to develop cooperation, and the establishment of new women's cooperatives will be encouraged (Republic of Türkiye Ministry of Family, Labour and Social Services, 2022, p.46)

In Turkey, women's cooperatives play both economic and social functions for their members: they initiate and implement economic activities which generate income and employment, provide care and education services, and carry out social activities that encourage women to participate in social life. In 2005, the women's cooperatives came together to create the Women's Cooperatives Communication Network. In 2014, they established Simurg (Phoenix) Women's Cooperatives Union as an official secondary level structure. The members of the Simurg Women's Cooperative Union are 70 women's cooperatives from 60 provinces of

Turkey operating in various economic fields, such as organic agriculture, home textiles and souvenirs, and child care. Simurg aims to increase awareness of the contribution of women’s cooperatives to the country’s economy, improve their institutional capacities, and strengthen communications between them. It also advocates for its member cooperatives’ common needs and interests and creates opportunities for sharing knowledge and experience at the national and global levels (ILO, 2022a).

According to “*The Current State of Women's Co-Operatives In Turkey 2015*” report, women's cooperatives are small-scale structures, the number of which usually does not exceed 25. The majority of the members are women with different education levels, between the ages of 40-60, married and with children. These small cooperatives, having little access to foreign capital, derive most of their income from the sale of products and services (Duguid, Durutas & Wodzicki, 2015)

Women’s co-operatives are more connected to their local institutions (e.g. municipalities) and to NGOs, associations and foundations. Women’s cooperatives are affiliated to two ministries. In the Ministry of Agriculture and Forestry, there are 137 Agricultural Development Cooperatives whose members are mostly women (Ministry of Agriculture and Forestry, 2022). In the Ministry of Trade, there are approximately one thousand women’s cooperatives registered. These cooperatives are four different types (Ministry of Trade, 2022).

4.1.STP Method for Women Cooperatives

Different frameworks make decision making easier (Sells, 2022). When choosing a framework, the goal is to ensure that all decision makers understand the need for a decision, the options available, and the consequences of their choices in providing a solution. When a call to action is needed, the Statuation, Target, Path (STP) tool is a great way to show leaders this information while suggesting a solution. For this purpose, STP analysis was conducted to evaluate the digital marketing practices of women's cooperatives and to draw a roadmap in this regard (Table 1).

Table 1. STP Method for Women Cooperatives

The SITUATION	The TARGET	The PATH
<ul style="list-style-type: none"> • The number of women's cooperatives is very large (close to 1000) • They usually produce traditional products that they know how to make. • Financial literacy is not at a sufficient level. • Pricing of the product is not done correctly. 	<ul style="list-style-type: none"> • Making women's co-operatives more visible in digital markets • To contribute to the economic empowerment of women by increasing the sales of cooperative products through digital markets 	<ul style="list-style-type: none"> • Support should be obtained from individuals and organizations that specialize in marketing, sales and branding. • E-commerce site established with the Ministry of Commerce should be registered • It should be ensured

<ul style="list-style-type: none"> • Women's cooperatives are competing with each other because similar products are produced. • It is difficult for them to continue their activities without the support of local governments. • The number of partners in cooperatives is not enough. • Cooperatives are not seen as a business both among their members and in the society. • Cooperatives do not have sufficient equipment to create and develop their own brands. • Not having enough knowledge about digital marketing • Women's cooperatives do not conduct market research. • Especially the products sold on e-commerce sites are not modern and up-to-date. • No value has been created for the products and services produced in women's cooperatives • The packaging and visuals of the products offered are far from making the product attractive. • More visibility of cooperatives that produce local products under hygienic 	<ul style="list-style-type: none"> • Increasing the awareness of women's cooperative members on digital marketing • Creating partnerships in the digital market • Creating a structure that includes up-to-date information about manufactured products and customers • Build loyal customers • Increasing sales by reaching more customers through local governments and organizations such as “<i>İyimser abla</i>”, collaborating with other women's cooperatives • Uncovering local and especially vanishing values • Emphasizing the social aspect of women's cooperatives besides the economic aspect • To follow up data and reports for digital use 	<p>that they promote the product by establishing a connection with the female figures taken as an example on social media.</p> <ul style="list-style-type: none"> • Get support for digital marketing • Determine the target audience and plan accordingly. • Must accurately identify the needs of the target audience. • Campaigns and promotions should be organized on special days and times • Small promotions or gifts, small brochures describing the women's cooperative should be added with the purchased product. • It should be stated that environmental and health conditions are taken into account in product presentation and packaging. • Tailor-made production concept can be applied • Women should follow the agenda and the current • They should analyze their competitors; what they produce, how much they sell, what way they follow for sales • Advertising or slogans should be created that will attract attention • Slogans or
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<p>conditions and standards</p> <ul style="list-style-type: none"> • Women need expert support to exist and maintain their presence, especially in the digital market. • Inadequacy in developing new products. • Most of the cooperatives have few followers. 	<p>advertisements should be prepared to convince customers and potential customers why they should buy the cooperative product.</p> <ul style="list-style-type: none"> • Support given to women's cooperatives should be followed • Market research for products and services
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5. Conclusion

Innovations brought by technology and the internet have not only changed the way of communication, but also changed the speed, impact, cost, needs and expectations of customers. Businesses have had to develop new strategies on these issues and revise their marketing communications according to the new rules brought by digital media.

In this research, suggestions were made for the application of digital marketing in women's cooperatives. These recommendations are intended to provide guidance. For this purpose, the most preferred shopping sites (e-commerce) and the most widely used social media platform were evaluated.

Women's participation into labour force and employment is an important element of sustainable development. Ensuring sustainability in economic growth, achieving social development and social justice in the full sense can be possible only through full and equal participation of women and men into all spheres of life as executors and beneficiaries of human-oriented sustainable development. In order to raise women's social status and promote their participation into development, it is of significant importance to enhance the indicators of education, health, social security and to ensure equality between women and men legally and in practice (Republic of Türkiye Ministry of Family, Labour and Social Services, 2022).

A support program for women's co-operatives has resulted in the importance of digital marketing for women's cooperatives and its contribution to its development. With these results, it is aimed that the project will reach more women's cooperatives. "I Can Manage My Money Project" was brought to life in the December of 2009, with the involvement of United Nations Development Programme, Habitat Association, Visa Turkey, and 30 member banks. This Project goal is to make the budget of the personal financial resources of individuals living in Turkey and aims to provide an educational opportunity for financial services to support their use (Financial awareness, 2022). Within the scope of this project, 14 women's cooperatives were selected for the "From Labor to Basket (Ekmekten Sepete) Support Program for Women's Cooperatives", which was piloted in January 2021. Women were supported with the necessary trainings to be included in the e-commerce ecosystem, marketing their products on the internet on e-commerce sites established specifically for their cooperatives, and

the establishment of websites of their cooperatives. Thus, visibility was provided on the internet and it contributed to the strengthening of the socio-economic status of the cooperative members (Emekten sepete kadin kooperatiflerini destekleme programı, 2022). In the social impact research carried out regarding the program; It has been determined that 86% of women's cooperatives have increased their sales, 93% have made new collaborations, 76% have started e-commerce thanks to the program, 71% have diversified their sales channels and 47% target exports (Emekten sepete, 2022).

Initially, in women's cooperatives, started with mostly non-competitive products in the market, today there are cooperatives developing products, becoming brands and offer products to the national market. These cooperatives not only give their members economic independence, but also make them active participants in the society and strengthen them with solidarity networks.

Use of new technologies can increase member participation in expressing their unmet needs (Roshina, 2022) in voting and in economic participation and can provide metrics that accurately and inclusively measure the tangible and intangible impacts those cooperatives have on major crises (Hoyt, 2022).

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IS E-COMMERCE GOOD OPPORTUNITY FOR
MARKETING OF REGIONALLY PRODUCED AND
BRANDED AGRICULTURAL PRODUCTS?

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Abstract

In this paper, we discussed regional and locally produced and has own branded agricultural products' producers had a new channel on to reach potential customers. It is obviously seen that agricultural food products distribution to the consumer has a great issue because of the risk of deterioration, improper storage, physical destruction during the transportation and shelves. And also, the middlemen issues regarding forming the products price negatively affect the regional producers. New logistics channels should take into account for better agricultural food products distribution system both producer and customer. E-trade distribution system has a great opportunity for the regionally produced agricultural products. Producers also has an opportunity to create regional or local brands with that system. Regional branding is gaining priority due to provide the economic incentive to attract investors, customers, markets, tourists and generate income for local communities. Producers understand that future trade method approach is changing, they realize that e-trade of agricultural food products will increase and could be important place in sales channels. Major developments in the technology and the increase the use of mobile equipment in Turkey have brought the popularity of online shopping applications to the agenda. Covid-19 Pandemic extensively affected consumer purchasing habit towards online food retailing. For this reason, modern logistics channels have started to use integrating developed logistics applications to the traditional logistics channels. Selected farmers from fresh fruit and vegetable, olive, and dried nuts producers investigated and the e-commerce approach of them evaluated.

Keywords: e-food, online distribution, mobile trade, regional branding, farmer

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1. Introduction

Food trade is changing rapidly through the escalating usage of electronic based shopping. Consumer more involved by the e-food trade and create important market share. Technological innovations on innovative packaging and distribution system accelerates the delivery of food products. This approach creates lower costs to reach consumer. Zhang and Berghall (2021) indicate that as e-commerce is gaining more attention, more research is appearing on agricultural e-commerce and its competitive strength. The majority of e-commerce is direct communication between the manufacturer and the customer (Wen, 2007). E-commerce system eliminate the middlemen and creates lower operation costs. But regarding agricultural sector, complexity of agricultural products and the consumer tend to purchase face-to-face are have an issue (Leroux *et al.*, 2001). Beforehand research emphasized that purchasing food from internet based shopping is not common before the 2010s (Canavan *et.al.*, 2007). However, there has been a significant increase in online food shopping, especially after the 2019 period (Chang and Meyerhoefer, 2021). E-commerce has emerged as a critical force in ensuring the delivery of agricultural and food supplies to urban residents during the outbreak all over the world (Guo *et.al.*, 2021). Especially in Turkey, after this period, 2-3 large-scale companies entered the e-food distribution system. Furthermore, modern food retail chains have also made electronic shopping systems more effective and widespread (Eti, 2022). Firms have turned to e-commerce to reach consumers and e-purchasing to reach processors and farmers. Delivery intermediaries acted jointly to assist the delivery and supply of food companies (Reardon *et.al.*, 2021).

The new rules of the food purchasing system create opportunity for regional and locally produced and has own branded agricultural products' producers. Wang *et.al.* (2021) research results show that regional brand shows remarkable complementary effects on store brand. They also emphasized that e-commerce provides more and cheaper ways to branding agricultural products by forming agricultural value chains with fewer intermediaries. Chang and Meyerhoefer (2021) indicate the increase in one of the major online food delivery firms' product variety due to COVID-19 was driven by purchases of foods that are predominantly sold by small farms rather than agribusiness firms. Local and regional food industry enterprises leveraged relationships in local food supply chains to quickly turn to new market channels and buyers (Thilmany *et.al.*, 2021). A new channel has been formed to reach potential customers. It is obviously seen that agricultural food products distribution to the consumer has a great issue because of the risk of deterioration, improper storage, physical destruction during the transportation and shelves. Additionally, the middlemen issues regarding forming the products price negatively affect the regional producers. New logistics channels should take into account for better agricultural food products distribution system both producer and customer. E-commerce distribution system has a great opportunity for the regionally produced agricultural products.

2. Materials and Methodology

Original data obtained via online from farmers engaged in agricultural production, fruit and vegetable farmers in the Aegean region, olive farmers, farmers producing pulses in Central Anatolia, dried nut producers and packaging companies of these products.

The gender, age, company information, companies' market information, companies' internet usage information, e-commerce status of the companies are interrogated and also a form consisting of 27-questions was applied to the producers and recorded in the study.

The summary statistics of the qualitative variables were given as frequency and percentage, and besides the analysis of whether the quantitative variables fit the normal distribution was made with the "Shapiro-Wilk Test".

3. Findings

In recent years, online food trade has gained importance and its prevalence has increased considerably. Especially the great developments in the technological infrastructure over time and the increase in the use of computers in Turkey have brought the popularity of online food shopping applications to the agenda. Supports and actions to be taken in order to boost the e-food trade will create a potential that will further expand the use of the internet in the field of food.

When the research findings are evaluated from the point of producers, it has been determined that the producers have an average of 20 years old enterprises, their annual production amount is 5662 tons on average, and the average cost/sales ratio of these producers is 63.7. Besides, it was determined that their average of age was approximately 48 years. Based on the findings, it is seen that the producers of the region are above middle age and their annual production amount and their profit rates are above the middle level.

It was determined that the majority of the producers (88.2%) were men and 64% of them were family corporations. It has been stated that the majority of the producers are respectively 31.3% fruit, 30.6% thyme and 11.8% olive production, and the vast majority (41.7%) of the producers employ seasonal workers to collect their products. Based on the findings, it can be said that it is a foregone conclusion that seasonal workers to have a higher working rate than those who work in the status of casual workers or farmers, since the family members are likely to be benefited from in harvesting situations due to the majority of family corporations.

It is seen that the majority of the manufacturers (81.8%) have internet connection in their enterprises and 49.7% of these companies have less than 3 computers. However, it has been determined that only 13.5% of the production enterprises deal with e-commerce and 66.7% of the e-commerce companies have been dealing with e-commerce for less than a year. It is stated that 91.9% of the manufacturers who do not deal with e-commerce are considering dealing with e-commerce in the following years. It has been determined that the majority of the manufacturers who has stated that they do not deal with e-commerce, are not using the internet business because of their lack of knowledge about e-commerce

and internet usage. Based on the findings, it can be said that the producers have difficulty in keeping up with the internet age due to their high average of age and operating years.

Table 1. Summary statistics of the sales channels of the producers

Sales Channels	N	%
Traders	138	95.8
Cooperatives	51	35.4
Wholesalers	48	33.3
Chainretailers	44	30.6
Localmarkets	10	6.9
Online	11	7.6

When the summary statistics of the sales channels of the producers who have participated in the study are examined, it is seen that 95.8% (138 producers) of the producers sell their products to traders, 35.4% (51 producers) of the producers sell them to cooperatives, 33.3% (48 producers) of the producers sell them to wholesalers, It has been determined that 30.6% (44 producers) of them sell to big markets, 6.9% (10 producers) of them sell to district bazaar and 7.6% (11 producers) of them sell directly to consumers online (Table 1).

Table 2. Summary statistics of e-commerce status of the manufacturers in the future, the status of receiving external support for e-commerce and the business in which they do e-commerce

Do you plan to do E-Commerce business in the future?	N	%
Yes	57	39.6
No	5	3.5
Have you taken external consultant support for E-Commerce business?	N	%
Yes we have taken	4	2.8
No we didn't	4	2.8
Considering	15	10.4
In Which Transactions Do You Use E-Commerce?	N	%
We supply online	15	10.4
We only promote on the web	14	9.7
We take orders online	14	9.7
We sell online through web	14	9.7
We communicate with customers and suppliers through electronic media	17	11.8
We promote on social media	14	9.7

When the summary statistics of the future e-commerce status of the manufacturers who have participated in the study as the situation of receiving external support for e-commerce and the jobs they would use e-commerce in the future are examined; it is seen that 39.6% (57 producers) of them think of using e-commerce in the future; 2.8% (4 producers) of them receive external consultant support for

e-commerce, 10.4% (15 producers) consider to receive external consultant support for e-commerce and in which transactions manufacturers use e-commerce; 10% (15 manufacturers) supply online, 9.7% (14 manufacturers) only advertise on the web, 9.7% (14 manufacturers) receive orders over the web, 9.7% (14 manufacturers) sell online via the web, 11.8% (17 producers) communicate with their customers and suppliers through electronic media, and 9.7% (14 producers) promote via social media (Table 2).

4. Conclusion

Recently the global trade of food and agricultural products are reshape. It is predicted that much of what we know in the tradition will change step by step in the near future as if preferences in the purchasing method. Furthermore, it is assumed that the logistic considerations will adapt to keep changing approaches. The logistics has a vital importance in the delivery of agricultural products to the final consumer. The use of internet based digital tools to track the flow of goods from producers to the consumers and other required procedures in this chain would help simplifying the process (Haji, 2021). Correspondingly with the development of logistics opportunities, it is under consideration that international trade will increase even more in the future. It is obviously seen that logistics costs will be reduced in the future with development of innovative logistic applications. Logistic costs will reduced, the consumer will be able to reach the product at a lowest price. After the widely using e-retailing Kızılaslan and Gönültaş (2011) emphasizes that there are new supply chains are formed, the transportation sector has developed and access to agricultural information has become easier.

The profit margin that the producers will make when they subtract the production cost will increase to a very high level with e-food trade. Manufacturers, who make very low profits such as 10% on average with high production costs, can increase this profitability to 200% with the advantage of sales price.

The average age of the farmer engaged in agriculture is increasing day by day and this increase turns into an adversity for the future of agriculture. The average age of people engaged in agriculture needs to be rejuvenated. With the more active use of e-food trade, the income of the producers will increase and remigration to the villages will increase. Producers who will have incremental revenue will increase the number of domestic workers for more production, and expand their production areas by renting neighboring or idle fields in case of need. These types of model applications will set an example for many people, and a certain part of the population that has accumulated in the city with the expectation of high income, will be able to return to their land and start producing.

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THE ROLE OF HUMAN RESOURCES MANAGEMENT IN
IMPROVING PUBLIC ADMINISTRATION
PERFORMANCE

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Abstract

The research analyzes the relationship between human resource management and performance, in the context of the Romanian public administration, a topic that has attracted the interest of many specialists over the last decades. The aim of the study is to address the relationship between human resources management and performance, starting from the conclusions of the in-depth analysis of HRM in public institutions in Romania, internal and external environmental factors that influence the development of specific activities and the relationship between recruitment, selection, training and professional development, motivation, remuneration, evaluation of civil servants and their professional performance. The main objective of this scientific study is the development of a new human resources management model that, implemented at the level of public institutions, will lead to the improvement of employees' performance. The proposed model aims to transform HRM into a strategic partner at the institutional level, to contribute to the achievement of organizational objectives and to achieve the connection between human resources activities and performance employees. The sampling method used is the quota method, which allows the representation of the relevant categories of the researched population, by establishing a proportional volume of each category, selected on the basis of the main characteristics of the population. The results of empirical research conducted in public institutions in Romania have shown that human resource management is affected by the lack of strategic perspective to impose the direction of organizational development in the medium and long term, despite reform efforts in this area in recent decades.

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Keywords: human resources, management, strategy, public institution

1. Introduction

In a period of globalization and socio-economic transformations, public institutions must respond to the increasingly high demands of citizens using the limited resources available in an efficient manner. In this context, public sector managers direct their attention to the most valuable resource at their disposal – the human resource, the one that can ensure the evolution of the organization and the fulfillment of its mission. On a labor market marked by the struggle of organizations to attract and retain the best employees, public institutions are in a difficult situation, having to compensate limited financial resources with methods and techniques to stimulate employees that involve higher costs. With the help of human resource policies and practices that meet certain quality standards and effectively use the resources they have available, public institutions can create an environment that supports the continuous development of employees, adaptation to change, effective communication and in which good professionals want to work (Flynn, 2017). The development of a professional and competitive body of civil servants is also a real challenge for public institutions that face a high level of employee turnover, frequent reorganizations, staff reductions and encounter difficulties in designing medium and long-term strategies. In these conditions, the management of public institutions must identify the right solutions to stimulate employees to reach high performance standards, to strengthen their devotion to the organization, to encourage initiative and active involvement, so as to create the necessary conditions for individual development and for fulfilling success of organizational objectives (Deb, 2009).

This paper analyzes the relationship between human resource management and performance, in the context of public administration, a topic that has attracted the interest of many specialists over the last decades. Despite many efforts, the link between HRM and performance continues to be considered complex and unclear and is often referred to as a "black box" due to the lack of scientific evidence on how HR activities used lead to organizational performance. The topic addressed in this article is topical both at the national and international level, given the fact that, in recent years, many of the European Union states have undertaken significant reforms in public administration, encouraging the change of traditional civil service systems, decentralization and HRM flexibility, reducing the differences between public and private sector employees or reducing internal hierarchies. The results of the empirical research on the specific activities of the management of civil servants have shown that this field continues to be affected by the lack of a strategic perspective, which would impose the direction of the development of the human capital of the organization in the medium and long term, despite the efforts to reform the civil service undertaken in the last decades. In addition, the research revealed the fact that human resources activities retain a pronounced formal character, it being necessary to review the way in which staffing planning, job analysis, skills and career development, evaluation or motivation of civil servants are carried out in order to create the premises for

improving professional performance with the support of human resources management. The evolution recorded by human resources management, over time, is also highlighted by the change in the subject of debates in this field. HRM was defined through the lens of functional activities, of daily operations carried out to ensure employee management, staffing, development, rewarding, sanctioning them, through the lens of the strategic role it has at the organizational level, of integrating employee management with organizational strategy or through the lens of the role that line managers play within this process.

2. Review of the scientific literature

3.

The relationship between human resource management and performance is one of the most debated topics in the specialized literature of the last decades. Despite the many efforts of specialists to discern how human resource activities lead to improved organizational performance, this relationship continues to be considered a complex and unclear one (Cohen *et al.* , 2000). Human resource management has experienced a wide development process since the mid-1980s in Great Britain and earlier in the United States of America, with the term HRM being increasingly used and replacing other terms such as "personnel management" or "work relations" (Boxall & Purcell, 2003). Theoretical approaches and empirical research in the field have confirmed the idea that HRM represents a unique source of competitive advantage that influences organizational performance, the human resource thus having the chance to demonstrate that it can contribute to organizational success by developing a strategic role, participating in the provision of effective services and facilitating change within the organization (Corbetta, 2013). Human resource management can be defined in a general way, as a new approach to how employees are managed at work, in any type of organizational environment, even in the case of unpaid or voluntary work (Craiovan, 2016). Human resource management is a complete process, which involves both encouraging the development of employees and capitalizing on their skills and competencies, as well as ensuring correlation with the objectives and strategy of the organization so that all stakeholders, including decision makers, employees, suppliers or customers, benefit from a social point of view (Androniceanu, 2018). Human resource management involves the design of formalized systems within the organization to ensure the effective use of knowledge, skills, abilities and other characteristics of employees in order to achieve organizational goals. HRM consists of the recruitment, selection, training and development, remuneration and benefits, retention, evaluation and promotion of employees and labor relations within an organization (Condrey & Perry, 20157). In the 21st century, human resource management must play a strategic role within the organization, contribute to strategy formulation and implementation, and human resource practices must be designed in line with organizational strategy and taking into account human resource needs . HRM includes all decisions that affect the relationship between the individual and the organization and includes employee and organization development, organizational design, performance management, reward and benefits system, productivity

improvement, staffing, employer-employee relationship, health and safety (Lefter et al., 2008).

The essence of human resource management is to bring together different types of people to contribute to a common goal through the use of a variety of activities. Achieving this objective involves identifying, recruiting and selecting the most suitable people to fill the positions; their training, motivation and evaluation; developing competitive remuneration policies to keep them; their preparation to occupy management positions within the organization (Androniceanu, 2018). The general purpose of human resource management is to ensure that the organization is able to achieve its objectives with the help of people (Armstrong, 2009).

Analyzing the definitions above, we can conclude that human resources management represents the set of human resources activities that ensure the attraction, development and retention within the organization of professionals who contribute to the achievement of the institution's mission.

3. Research methodology

The aim of the empirical research on the management of human resources in the public administration in Romania is the in-depth knowledge of the way of planning, organizing, carrying out and evaluating the activities specific to the management of civil servants and their professional career.

The objectives of the research are:

1. to identify the changes in the management of human resources in public institutions after Romania's accession to the European Union;
2. to analyze the quality of human resources management activities in public institutions in Romania (staffing planning, recruitment and selection, career development, professional development, evaluation of individual professional performances, financial and non-financial motivation)
3. to design the profiles of civil servants according to their level of satisfaction with the quality of the individual professional performance assessment activity
4. to identify the factors that significantly influence the motivation of civil servants in Romania and their performance at work.

Control variables used in the research are:

1. Variables regarding institutional characteristics
 - a) administrative level: central public administration; state administration in the territory; local public administration;
 - b) the size of the public institution: less than 50 employees; between 51 and 100 employees; between 101 and 150 employees; between 151 and 300 employees; over 301 employees.

2. Variables regarding the characteristics of the respondents

- a) category of public position held: public management position; public function of execution; specific public function;
- b) completed studies: secondary studies; undergraduate university studies, respectively long-term higher studies; postgraduate courses; Master's Degree; other type of studies;
- c) seniority in public office: between 0 and 3 years; between 3 and 5 years; between 5 and 10 years; between 10 and 15 years; over 15 years;
- d) field of activity.

To analyze each human resources activity, a series of variables have been established and are presented below, taking into account the specificities of each of them:

1. Access to public office - recruitment and selection: recruitment methods used; fields in which there is a lack of specialized personnel; criteria taken into account when planning staffing; the efficiency of the recruitment and selection methodology; the candidate's current skills/potential future; duration of the recruitment and selection process.
2. Career development in public office: the link between evaluation and career promotion; basic principles in career development; mobility in the public office; encouraging professional development.
3. Professional development: participation in training programs followed in the previous year; identification of training needs; the relationship between identified training needs and participation in training programs; the relationship between the subject of the training programs followed and the specifics of the activity; the impact of the training programs followed on the professional activity; weaknesses of the professional development activity; criteria for participation in training programs.
4. Evaluation of individual professional performances: communication within the evaluation; the impact of the evaluation on the professional activity; fairness and transparency of evaluation; the impact of the assessment on the salary level; options for improving the process of evaluating individual professional performances.
5. Motivation and performance at work: the content of the activity carried out; the level of independence and responsibility in the activity; working environment and conditions; the results obtained and the impact produced in society by the public institution; the leadership style of the hierarchical superior; salary level; participation in professional development courses; career development opportunities; job security; the result of the evaluation of individual professional performances.

The information regarding the management of human resources in public institutions in Romania was collected with the help of two questionnaires. The target group of the research consists of two categories of personnel:

1. Specialists in the field of human resources within public institutions – leading civil servants, executive civil servants or persons occupying specific public positions within human resources management departments responsible for planning, coordinating and organizing human resources activities;
2. Management, executive civil servants and persons occupying specific public positions within the various departments of public institutions - the beneficiaries of human resources policies.

A questionnaire was designed for each of the two target groups, the situation of the number of people who completed each questionnaire - the research sample being as follows: 34 specialists in human resources; 78 civil servants.

An important criterion for the selection of respondents for the first component of our research was that they work in the human resources department of the public institution or perform human resources management duties. The obtained data were processed and systematized using the Statistical Package for the Social Sciences (SPSS) program. Qualitative research methods allowed the study of less tangible aspects, namely the attitudes and the way in which human resources activities are perceived, these being used, predominantly, to obtain detailed information from the analyzed group regarding the motivations that are in behind one election or another. The result of qualitative research consists in the development of opinions, rather than the collection of statistical data or yes or no answers, the purpose of using this type of research in the study of HRM activities in public institutions in Romania is to achieve a robust, detailed description of the models and behavioral trends, human needs and motivations. Through quantitative research methods it was possible to collect information from a much larger number of people than through qualitative research methods. The collected information was processed using quantitative methods, such as univariate data analysis in order to present the characteristics of the variables measured in the present research.

4. Results and discussion

Considering the influence that continuous professional development has on the motivation and performance of civil servants at work, we proceeded to analyze the system of career development in the civil service in Romania, based on the information collected with the help of the questionnaire addressed to civil servants. The responses of the 178 civil servants who were asked to express their agreement/disagreement with a series of statements regarding the career development system in the civil service, using a scale from 1 to 5 (1 - agree to a very small extent and 5 – agree to a very large extent), are described in Table 1.

The average of the answers received in the case of the second statement included in the table below, respectively 3.49, shows that the people surveyed

agree to a large and very large extent with the fact that the career system in the public office is very much based on seniority specialty.

The period of time spent on a certain post is one of the main criteria taken into account when promoting the executive civil servant in the professional grade. At the same time, recruitment for both executive and management public functions is carried out taking into account seniority in the specialty imposed by the specific duties of the position for which the recruitment competition is organized. Although the career system based on seniority is more advantageous from the point of view of the costs involved because it is based on a repetitive process that requires a minimum consumption of time and financial resources, it does not create the necessary framework for stimulating civil servants and encouraging initiative or involvement active at work.

Table 1. The career development system in the public office according to the respondents

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
There is a clear link between the results of the annual assessment and career advancement.	174	1	5	3,06	1,234
Career promotion is based to a very large extent on seniority and less on motivation and results obtained in the activity.	170	1	5	3,49	1,028
The basic principles of promotion are recognition of merit and reward.	172	1	5	2,65	1,162
Professional development is achieved through horizontal and vertical mobility within the institution.	174	1	5	2,83	1,173
Professional development is achieved through continuous professional development and the diversification of duties corresponding to the position.	174	1	5	3,17	1,148
Valid N (listwise)	165				

In the case of the other statements, the average of the answers varies around the arithmetic mean of the possible answer variants given the fact that a significant percentage of respondents selected 3, on the scale from 1 to 5. In order to illustrate the perception of civil servants on the career development system in the public office, the number of people who did not agree or agreed to a small extent, respectively the number of those who totally and to a very large extent agreed with the statements made were accumulated.

Thus, a significant percentage of respondents (50.6%) *believe that the principles of reward and recognition of merit find their applicability to a very small extent in the system of career development in the public office*, 22.5% believe that these principles are applied to some extent in public institutions, and 23.6% agree and totally agree with the fact that the current career system in the public office provides the necessary framework for recognizing the merits of employees and rewarding performance.

Also, based on the answers of the people questioned, it can be concluded that the career development system in the public office is a rigid one, which does not encourage horizontal or vertical mobility, 39.8% of the respondents agreeing to a very small extent that professional development is possible through horizontal or vertical mobility within the institution, 28.7% somewhat agree with this statement, while 29.2% of respondents believe that they benefit from career development opportunities through these means. In the case of the other statements, respectively, between the results of the annual evaluation and career promotion there is a clear connection and professional development is achieved through continuous professional development and the diversification of the duties corresponding to the position, there is a balance between the percentage of people who agree to a small extent and that of people who agree to a large extent much with these statements. In order to find out if there is a connection between the control variables of the research, respectively the main characteristics of the research sample, and the opinion of the respondents regarding the current career development system, we proceeded to a more in-depth analysis of the collected information, being calculated by the *correlation coefficient r Pearson* between the research control variables and the responses received to the statements regarding the career development system in the public service. The results obtained are presented in Table 2.

Table 2. Pearson r bivariate correlation results between the research control variables and the features of the public service career development system

The current career development system in public office	Administrative level	Public office held	The last level of education completed	Seniority in public office
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There is a clear link between the results of the annual assessment and career advancement.	Coefficientul Pearson	.325**	-.203**	-.308**	.126
	Sig. (2-tailed)	.001	.007	.000	.097
	N	174	174	174	174
Career promotion is based to a very large extent on seniority and less on motivation and results obtained in the activity.	Coefficientul Pearson	-.076	.010	-.040	.100
	Sig. (2-tailed)	.323	.898	.606	.193
	N	170	170	170	170
The basic principles of promotion are recognition of merit and the reward.	Coefficientul Pearson	.235**	-1.111	-.232**	-0.64
	Sig. (2-tailed)	.002	.147	.002	.402
	N	174	174	174	174
Professional development is achieved through horizontal and vertical mobility within the institution.	Coefficientul Pearson	.349**	-.186**	-.279**	-.020
	Sig. (2-tailed)	.000	.002	.012	.867
	N	174	174	174	174
Professional development is achieved through training continuing professional development and diversification of duties corresponding to the position.	Coefficientul Pearson	.388**	-.233**	-.190**	-.013
	Sig. (2-tailed)	.000	.002	.012	.867
	N	174	174	174	174

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The values of the Pearson r correlation coefficient indicate a direct and statistically significant relationship, at a significance threshold lower than 0.05, between the independent variable "administrative level of the public institution" and the following statements:

- There is a clear link between the results of the annual evaluation and career promotion: .325;
- The basic principles of promotion are recognition of merit and reward: .235;
- Professional development is achieved through horizontal and vertical mobility within the institution: .349;
- Professional development is achieved through continuous professional development and the diversification of duties corresponding to the position: .388.

Taking into account the established correlations, the distribution of the answers regarding the previous statements regarding the career development system of civil servants is analyzed in the following, according to the administrative level at which the surveyed persons work.

As shown in Table 3 below, civil servants in the central public administration believe that they benefit to a small and very small extent from opportunities for professional development through internal vertical and horizontal mobility (a total of 66.7%), while only 32% of civil servants in the local public administration share the same opinion. 38.4% of the respondents from the local public administration agree and totally agree with the fact that in the institution where they work, they benefit from career development opportunities through horizontal and vertical mobility.

Table 3. Correlation between the opinions expressed by respondents regarding professional development through internal vertical and horizontal mobility and the administrative level of the public institution where they work

		The administrative level of the public institution			Total
		Central public administration	Territorial public administration	Local public administration	
Professional	Totally disagree	30.8%	10%	9.6%	14.4%

development through internal vertical mobility and on horizontal	Disagreement	35.9%	40%	22.4%	26.4%
	Partially agree	25.6%	40%	29.6%	29.3%
	Agree	7.7%	.0%	27.2%	21.3%
	Totally agree	.0%	10%	11.2%	8.6%
Total		100.0%	100.0%	100.0%	100.0%

The results of our research show that civil servants rate the current system of career development in the public service as unattractive for a person who pursues continuous professional development. The lack of opportunities for career development is also accompanied by the lack of interest in applying the principles of non-financial motivation such as recognition of merits and achievements.

5. Conclusions

The work makes important contributions to the specialized literature in the field of human resources management in the public sector, by addressing human resources practices as a whole and promoting a strategic vision on the management of human resources in public institutions. Studies show that the effects of human resources management are not the result of a single human resources practice but of a configuration made up of different interdependent practices. Starting from this premise, research on the management of human resources in public institutions has focused on the activities considered essential for improving the performance of civil servants, namely staffing planning, recruitment and selection, career development, professional development, evaluation of individual professional performances, financial motivation and non-financial.

The consideration for which the research in the field of human resources management in public institutions starts from staffing planning is given by the fact that this activity ensures the identification of the necessary personnel and provides information on the skills, the appropriate number of employees, their location within the institution, as well as on the right time to carry out recruitment and selection activities. The quality of the recruitment and selection process is also crucial to the development of the organization and its performance, with staff turnover depending on the quality of the selected candidates and the degree of fit between them and the position they will occupy. Vocational training influences the performance of civil servants in two ways: on the one hand, the basic objective of this activity is to strengthen and continuously improve the knowledge and skills

of employees so that they can perform their duties successfully, and on the other hand part, this is a motivation/stimulation factor for employees.

Considering the fact that both aspects contribute to obtaining the best possible results in the professional activity, the professional training of civil servants is analyzed in our research from both perspectives. The evaluation of individual professional performances is one of the main factors for motivating employees, research shows that this contributes to improving the level of competence of employees, to increasing individual and organizational performance. At the same time, through the evaluation, a relationship can be established between obtaining special results in the activity carried out and motivational factors, such as salary increases, promotion, respect and recognition.

The financial and non-financial motivation of employees is analyzed in our research both as a result of the HR activities mentioned above and from the perspective of line managers' ability to fulfill their role as leaders of the team they lead, to encourage and support his subordinates in achieving the proposed objectives, to recognize their merits and to reward their outstanding performances.

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THE IMPORTANCE OF HUMAN RESOURCES IN
ROMANIAN EDUCATION FROM THE PERSPECTIVE OF
THE MAIN COMPONENTS THAT DEFINE THE
EDUCATIONAL MANAGEMENT SYSTEM

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Abstract

The purpose of the research was to analyze human resources from the perspective of the components of the educational management system in Romania. Human resources play an essential role in social development processes. Considering the major role that education has in the development of human resources, it constitutes an essential vector of social development. The study of human resources of the main "generator" of human resources - education - is a major issue in educational policy issues. We started from the following general hypothesis - educational management is a component of management that is based on all the principles, functions and strategies of: professional training, promotion, salary and evaluation of human resources in education. In conducting the research, we started from a certain perception of the teachers on the position of school management, according to which, the principal is seen by teachers less as a leader of the school organization and more as a colleague, who temporarily holds leadership positions. The question arises: Have school principals become professionals in the field of management? There is still debate in this regard, as the mere possession of a certificate cannot confirm that the person has become a professional.

Keywords: management, human resources, educational management system, teachers

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1. Introduction

Any aspect of the activity of an organization is determined by the competences, motivation and efficiency in the organization of the staff. Among all management tasks, managing the human component is the most important because it depends on how well everything is done in an organization. Along with the economic or social purpose of an organization, the last decades have demonstrated the need to consider its social purpose as well. Nowadays, without a doubt, the human resource is considered to be strategic and therefore the personnel function has come to be in a position of *arbitrator* between the economic objectives of the organization and the social and human imperatives (Albu, 2013). The mission of the personnel function consists in providing the organization with the necessary human resources, under the double restriction of a harmonious and efficient functioning of the human ensemble and respecting the desire for equity, security and individual development of each member. The personnel function, together with production capacities, supply and distribution systems, sales teams, finance and accounting, interact within the current activity of the organization. These processes can be influenced by changes in the political, social, economic and technological system. The influences of the organization's external environment determine a continuous process of adaptation and change, a process imposed by the need to permanently increase its performance.

Human resources management consists of all activities aimed at securing, developing, motivating and maintaining human resources within the organization in order to achieve its objectives with maximum efficiency and satisfy the needs of employees. As organizations develop, they have to deal with a series of essential aspects of human resource management. Managers create a plan to attract and retain people with the skills the organization needs. The implementation of the plan involves recruitment, selection, integration, training, rewarding, choosing the most suitable benefits and the permanent evaluation of the performances to check if the organizational objectives are achieved. These activities represent the components of human resources management. The human resources plan in an educational unit is created in accordance with the organization's strategic plan. As the organization identifies available development opportunities, it is necessary to correlate them with the skills that will be needed to cover them. Recruitment, training and compensation programs are designed to attract, develop and retain people with the necessary skills. The development of human resources in education involves a process of training people to perform the tasks needed in the school unit. The problem lies in recognizing the type of training that employees need. All training decisions must take into account the motivation of the employee undergoing training. Any school organization is growing and therefore methods of finding and hiring people with the required skills must be established. This is usually reflected in some form of human resource planning. Analyzing the future projects and trends of the organization - through an institutional development project (IDP), the number of people needed and the type of skills and competences required by the possible vacancies are estimated.

Educational management is the science and art of preparing human resources, of forming personalities, according to goals accepted by the individual and by society or a certain collective. It includes a set of principles and functions, rules and management methods that ensure the achievement of the objectives of the educational system (as a whole or at the level of the component elements), at the highest standards of quality and efficiency (Bush, 2015).

2. Review of the scientific literature

The human resource of the organization is often called *the most valuable asset*, although it does not appear in the accounting records. The success of the organization, however, depends on the way its members implement its objectives; that is why the capabilities and quality of human resources are defining for the organization's results (Enache, 2019). But working with people requires taking into account the sensitivities and emotional characteristics of each individual. People have ambitions and ambitions, they need a measure of their results and they have a complexity of needs.

Human resource management is the management activity responsible for all decisions and actions that affect the relationship between an organization and its members. The purpose of the human resources management activity is primarily to make the employees as the organization wants but also to make the organization as the employees want, so that the organization achieves its objectives (Bucurean, 2018).

Human resources constitute the creative, active and coordinating element of the activity within organizations, decisively influencing the effectiveness of the use of material, financial and informational resources. Describing people as *resources* emphasizes their importance and shows that their management requires high levels of genuine concern for people, attention and professionalism. The evolution of managerial practice and thinking determined the shift of specialists' attention from the material factor to the human resource (Băban, 2011). The conclusion was thus reached that the individual is more than a simple component of the productive factors, and the management of human resources goes beyond the rigid principles of managing the company's assets, having to take into account a series of characteristics that escape economic calculation. Only by taking into account all aspects that define the human personality, skills, knowledge, aspirations, temperament and character traits, management can manage the most precious resource, the only resource endowed with the ability to know and overcome its own limits (Maxwell, 2014). Emphasizing the role of human resources, however, does not mean an underestimation of other resources. The systemic conception of the company involves the interdependent approach of resources, starting from the fundamental objectives to achieve which they compete together, from the essential connections that exist between them. The overbidding of human resources at the expense of others affects the dynamic balance of the organization (Gherghuț, 2017).

Quality assurance and quality management in initial education and training is a field of intervention that especially requires the development and implementation of internal systems and procedures for evaluation, management

and quality assurance of initial and continuous education and training activities, as well as the professionalization of managerial activities at the level of initial and continuing education and training providers. Mainly, the activity of institutions and providers of education and training in the formal education system is taken into account. The main actions considered are (Ball, 2008):

- ✓ creation and development of quality assurance and management systems in education and training;
- ✓ the development of professional training programs in the field of educational management and quality management;
- ✓ the development of mechanisms for monitoring the insertion of graduates on the labor market in order to adjust the educational offer in accordance with the developments on the labor market;
- ✓ creation and development of quality assurance and management mechanisms in education in non-formal and informal learning contexts.

The development of human resources in education aims to diversify initial and continuing education offers and career opportunities for teachers and other categories of human resources in the initial education and training system (Gherghuț, 2017). The competences provided within these education and training programs will ensure, first of all, the acquisition and development of the competences rewritten in the European Framework of Teacher Qualifications. The actions considered within this measure target human resources in education from a double perspective, as participants in lifelong learning and disseminators of knowledge (Chiș, 2011). This field of intervention contributes to the development of the stock of human capital in education capable of providing quality education focused on the individual needs of students' personal and professional development, to reducing the phenomenon of early school dropouts and increasing the attractiveness of learning (Hallinger, 2009). Also, considering that the guidance and counseling services of human resources in education are insufficiently developed, being neither operational nor specific tools for defining professional and career paths for this category of human resources, the actions in this field will be correlated with specific measures to increase career development opportunities for human resources in education (Hughes, 2012).

3. Research methodology

The main purpose of the research is to analyze the management of human resources in education in Romania, from the perspective of the components of the educational management system (Chiș, 2011):

- a) *Training of teaching staff*: professional conversion in the education system aims at extending the initial training in order to obtain the right to teach other subjects or occupy other teaching positions.
- b) *Promotion of the teaching staff*: the entire professional route, from the selection for the teaching career to management positions in the system, is built on performance principles and qualitative accumulation of theoretical knowledge and practical experience .
- c) *Salary of the teaching staff*: it is done in compliance the principle according to which education is a national priority, taking into account the responsibility and

complexity of work, professional training and experience, the role and importance of the activity performed.

d) Evaluation of the teaching staff: aims to create motivational systems for evaluating the performance of employees.

Managers from Romania from several educational units were part of the research team. The survey unit was represented by the following types of managers from educational units (Iosifescu, 2004):

- 1) *teacher*: leads the didactic activity at the level of a collective - class or group;
- 2) *the teacher- director*: leads the educational activity at the level of a class or group of students;
- 3) *the speech therapist teacher*: leads the process of language training and psychopedagogical assistance specific to students and parents at territorial and county level through speech therapy centers and at interschool level through speech therapy offices;
- 4) *the teacher-counselor*: leads the psycho-pedagogical activity of students, teaching staff and parents at the territorial-county level through the psycho-pedagogical assistance centers and at the inter-school level, through the psycho-pedagogical assistance offices;

Data collection was carried out between March 2022 and June 2022, with the help of the questionnaire, a quantitative structured research tool. A total of 412 valid questionnaires were obtained, thus allowing the use of a large number of statistical techniques to analyze the collected data. Since both the time and the interview materials and the operators traditionally adopted in surveys are quite expensive, a modern method of applying the questionnaire was used, namely designing and applying it online based on the Google Forms application. The obtained results were recorded, stored and structured, obtaining the database necessary for the analysis. The recorded data were subjected to operations of adjustment, grouping, aggregation and coding for easier processing, analysis and interpretation. Therefore, a database was created that could be used electronically.

In the research study we used the *maximum utility method* to establish the importance that managers give to each basic component of the educational management system.

The steps of the global utility method are as follows (Bender, 2000):

Step 1. Build the utility matrix with the elements, $i = 1, \dots, r$ si $j = 1, \dots, n$.

Each element of the matrix is calculated for the maximum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{ij} - x_{i \min}}{x_{i \max} - x_{i \min}} \quad 1)$$

and for each minimum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{i \max} - x_{ij}}{x_{i \max} - x_{i \min}} \quad 2)$$

where:

x_{ij} = the value of indicator i associated with indicator j ;

$x_{i \max}$ = the minimum value of indicator i ;

$x_{i \min}$ = the maximum value of the indicator i .

Step 2. Calculate the overall utility for each project as the sum of the products in the element of the utility matrix (the column vector corresponding to the project) and the important coefficient given for each indicator.

$$UG_j = \sum_{i=1}^r \alpha_i u_{ij}, \text{ where } \sum_{i=1}^r \alpha_i = 1 \quad 3)$$

Step 3. Choose the project that corresponds to the maximum global utility.

$$\max \{UG_j\} \Rightarrow V_j, j = 1, \dots, n \quad 4)$$

For the division of some decision V_i variants (n variant) and for the selection of the best one offered by the simultaneous consideration of several criteria of appreciation ($C_j, j = 1, \dots, n$) and the global utility. Finding the best combination of attributes (characteristics of a variant) forms the object of the multi-attribute problem.

This involves the transformation of all numerical values a_{ij} and qualitative characteristics into utilities u_{ij} , ie numerical values located in the interval [0, 1]. The basic assumption in the correct function of the weighted sum method is the independence of the criteria. The largest of the synthesis utilities indicates the best option.

4. Results and discussion

Table 1 presents the information base of the study, respectively the weight of importance that the managers of the learning units gave to each component of the educational management system.

Table 1. The importance of the educational management system

EDUCATIONAL MANAGEMENT SYSTEM	TYPES OF MANAGERS IN EDUCATIONAL UNITS			
	<i>Teacher % (v1)</i>	<i>The teacher- director % (v2)</i>	<i>The speech therapist teacher % (v3)</i>	<i>The teacher- counselor % (v4)</i>
<i>C1. Training of teaching staff</i>	15.44	21.36	26.6	12.4
<i>C2. Promotion of the teaching staff</i>	11.56	14.17	13.5	22.68
<i>C3. Salary of the teaching staff</i>	9.8	12.27	8.9	12.34
<i>C4. Evaluation of the teaching staff</i>	22.44	18	12.72	26.15

Source: developed by the authors based on the collected data

The main results, however, are the fact that managers consider C4 first. *Evaluation of the teaching staff* - The evaluation of the teaching, auxiliary, management, guidance and control teaching staff is done annually, according to

the evaluation sheet developed by the Ministry of Education and Research. The evaluation procedure is triggered by self-evaluation, recorded in the individual job sheet. For the teaching staff, the evaluation form, endorsed, as the case may be, by the head of the department or by the head of the methodical committee and by the director of the school unit, is analyzed in the board of administration, which, in the presence of the person in question, decides on the final score. In the evaluation form, the activities carried out outside the individual job description in the field of education, as well as other activities requested by the management of the unit or by hierarchically superior bodies, are scored. The evaluation form is a basic document for establishing salary rights, for promotion and access to training programs. The activity and competences of teachers can be summarized in terms of occupational standards, accompanied by the related criteria.

As a last resort, managers consider C3. *Salary of the teaching staff* (Fig. 1)
 – The salary of the teaching staff consists of the basic salary, established according to the law, and a variable part, consisting of additions, increments and other additional salary rights. The additional salary rights and other material rights of the teaching and auxiliary teaching staff are negotiated, within the limits established by law, within the collective labor contracts between the administration and the education unions recognized at the national level, according to the law.

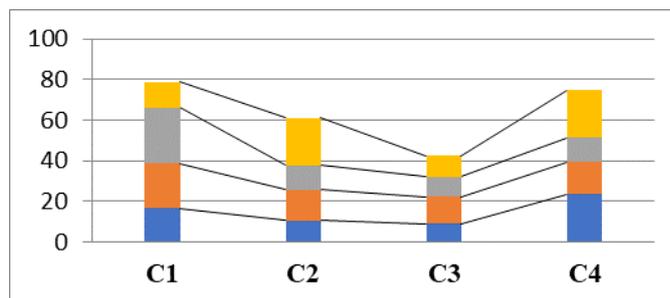


Figure 1. The weight of the components of the educational management system
 Source: *developed by the authors based on the collected data*

Completing the calculation algorithm involved:

Step 1 – building the units matrix with elements x_{ij} (Fig. 2).

$$\begin{bmatrix} 0,26 & 0,66 & 1,00 & 0,00 \\ 1,00 & 0,65 & 0,90 & 0,00 \\ 0,00 & 1,00 & 0,21 & 0,38 \\ 0,99 & 0,36 & 0,00 & 1,00 \end{bmatrix}$$

Figure 2. Matrix of units

Source: *developed by the authors based on the collected data*

Step 2 – Calculation of global utilities for each type of manager (Table 2):

Table 2. Results of the calculation of global units

GLOBAL UTILITY	RESULT
<i>Teacher</i>	2.25
<i>The teacher- director</i>	2.66
<i>The speech therapist teacher</i>	2.10
<i>The teacher-counselor</i>	1.38

Source: *developed by the authors based on the collected data*

Step 3 – From Table 2, it can be seen by calculating the global utilities, the highest global utility is recorded by the type of manager: *the teacher-director*. Therefore, following the application of the calculation algorithm of the maximum global utilities method, it can be concluded that the teacher-director best assessed the importance of the educational management system. The development of human resources in education aims to diversify initial and continuing education offers and career opportunities for teachers and other categories of human resources in the initial education and training system.

5. Conclusions

Romanian education has a priority objective: the efficient use and qualitative improvement of human resources to ensure the gradual transition from economic occupations with a low level of qualification to occupations involving advanced knowledge and skills, the multiplication of decent jobs, the reduction of poverty and social inclusion. The quality of educational services is also important from the perspective of competitive human capital, able to face the current pressures of the labor market at the national, regional or global level. There are a number of factors that prevent the achievement of important objectives in this chapter: poverty, emigration, ineffective management of financial resources and under-investment in the educational system. Combating these adverse phenomena will require innovative actions, increasing the efficiency of sector financing, diversifying funding sources, attracting external financial resources, active participation in regional educational processes and maximizing positive externalities as a result of the implementation of collateral programs.

Romanian pre-university education faces numerous problems, of which the most pressing and affecting human resources seems to be that of quality. The lack of quality is the tribute paid by the educational institution in the desire to hold classes. The need to maintain the number of students within the limits of the legal existence of the work formations leads to the generalization of a state of indiscipline and its tolerance by the school.

The recommendation regarding the management of human resources:

- ✓ due to the rapid and permanent changes in Romanian society, it is necessary to optimally use the existing staff in each unit, train and develop them coherently, as well as establish collaborative relationships and promote didactic experiences.

- ✓ practicing scientific management, based on correct and complete information, long-term objectives and rewards based on continuous evaluation and performance indicators.
- ✓ complying with the requirements of the legislation, regarding the preparation of job descriptions, evaluation sheets of the professional performance of the staff.

The recommendation regarding the development of human resources:

- ✓ the need for professional development must take into account both the needs of the school and the need in the specialty at the level of each person.
- ✓ on the framework of continuous training, it is necessary to go through specific training courses to solve some problems encountered at the level of each school and not on purely theoretical aspects.

Recommendation on internal evaluation: self-evaluation is the basic component of the management culture and must provide the opportunity for the school unit to identify its strengths and weaknesses by comparing performance year by year. Internal evaluation is based on the interpretation of the evidence, not on the opinions of those involved in the educational process.

The recommendation regarding the external evaluation: in the external evaluation, the starting point is the conclusions and data obtained during the internal evaluation. If the self-assessment is performed incorrectly and the results of the external assessment are equally erroneous. That is why the recommendation is that in the case of the external evaluation, one should start from the real situation, not from the reality perceived by the educational units, so that the weak points can be identified and thus measures can be taken to improve them.

In the school, it seems that the promotion initiative is diminished, given a certain stability of teaching rules and obligations, which makes it difficult for new positions to appear frequently. However, at certain intervals it is necessary to recruit new teaching staff and then, the director should have the freedom to choose his collaborators in relation to the development objectives and priorities present in the institutional project. Moreover, staff development is the means by which the school's management team can guide and use the teaching staff, depending on the provisions of the institutional project.

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DIGITALIZATION OF BUSINESS IN THE EUROPEAN
UNION - STATE AND PRIORITIES

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Abstract

Digitalization is of vital importance for the development of business in the European Union. In today's dynamic and high-tech environment, digital technologies underlie the development, implementation and improvement of business models related to maximizing the ability of companies to generate added value and achieve positive effects (results). Digitalization is a key differentiating factor for improving the way of organization and timely digital transformation of business in order to achieve economic sustainability and growth. The aim of this paper is to study the level of business digitalization in the European Union and derive specific business solutions and practices for its effective implementation. As a result of the study, this paper identifies the current state, specifics and dynamics in the development of digitalization of business within the European Union. It also traces the main trends, highlights the problem areas and outlines the guidelines and priorities for increasing the implementation of modern digital technologies and innovations.

Keywords: digitalization, digital technologies, business transformation, European Union, economic sustainability.

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Introduction

The implementation and application of information and communication technologies is a priority axis for the economies of the European Union countries on their way to rapidly recover from COVID-19 and achieve sustainability on the digital transition horizon. Building and developing digital infrastructure for business within the European Union (hereinafter EU) depends largely on the effective planning of digitalization processes, institutional and corporate cooperation and concentration of significant financial resources to meet the specific digital transformation goals. Undoubtedly, the speed and scale of digitalization in the separate economic regions of the EU and its expected effects may differ as regards the specifics, current state and potential for local business development. It also must be taken into account that there are both positive results and risks that pose challenges to the implementation and use of technological innovations by the companies in the Community. The intensity with which modern digital technologies are perceived and whether there are enough positive processes which prove the benefits of digital progress is key to increasing the competitiveness of enterprises operating in the EU.

The term “digital economy” has become increasingly significant, mainly as a result of the obvious need for effective financial support and deep structural reforms since the COVID-19 pandemic started. Despite the efforts of the European institutions, the rapid digital transition cannot be achieved without raising the digital culture of the management and adopting digital technologies as the main tool for managerial decision-making. In the dynamic environment of digital technology development, the companies from EU Member States are facing a serious challenge not only to achieve a certain level of digitalization, but also to update their digital progress, taking into account the ever-changing economic and social conditions. Combining the efforts to digitize economic and social life aims at a higher social contribution and overcoming the inconsistencies that may arise in implementing Europe’s Digital Decade Strategy. Permanent monitoring of business achievements in the area of digitalization is becoming a long-term mission of Europe and a political priority for EU Member States.

This study is fully in line with existing scientific publications, corporate practice and EU-approved principles and mechanisms related to the digital transformation of the whole Community. The study traces the state of the Digital Intensity Index (DII) of SMEs and large companies, which provides information on the use of a set of digital technologies in 2021. The conclusions generated in the study are based on findings from quantitative research and information analysis on the use of specific digital technologies by businesses in the Community. Future observations on the penetration of digital technologies in entrepreneurship would also be of interest, given the plans and measures to overcome the effects of the COVID pandemic, which inevitably motivate businesses to seek more effective ways to sustain and protect the lives and health of consumers.

1. The significance of business digitalization

Under the modern conditions, not only prosperity but also business survival itself depends on the dynamics with which digital technologies are gaining ground in entrepreneurship. Adapting to new global challenges requires a radical rethinking of business models and adequate development of corporate strategies based on measures that improve corporate processes through the so-called *digital business transformation*. There are different interpretations of the terms “*digital transformation*” and “*digitalization*” in the specialized literature and practice. In this regard, digitalization is rather more applicable in business through the introduction of various modern digital technologies, the number of which is constantly growing, and the existing opportunities for automation of certain tasks in the specific entrepreneurial activity are also increasing. Some studies in this area define „*digitalisation involves the introduction of digital technological innovations into existing (organisational, industrial, societal) systems in such a way that changes how those systems operate*“ (Fielke, Taylor, & Jakku, 2020).

At the same time, the term *digital business transformation* and increasing competitiveness focuses on the transformation of consumer requirements and consumption, which is based on digital technologies (Ritter & Pedersen, 2020). It is very important that investments in digital technologies transform in favour of the company’s business model and provide the necessary return on funds planned for digitalization. The potential for improving entrepreneurial competitiveness, regardless of the type of industry, lies namely in the wide scope of digitalization in the enterprises’ supply chains, and the digital business transformation is rationalized only after the objective and rational introduction of new digital technologies in the companies’ activities aiming at a fundamental change (Schwertner, 2017). On the other hand, it is also valid to assume that the harmonious integration of digital technologies in business affects not only the micro level, but can also have a positive impact on macroeconomic indicators (Mičić, 2017).

In practice, the real materialization of the effects of using digital technologies on business is the availability and implementation of mandatory tools, which include easier access to financing from European funds and the creation of partnerships between the government and private sector that will contribute to saving time and money and higher efficiency of tax payments (Trașcă, Ștefan, Sahlian, Hoinaru, & Șerban-Oprescu, 2019). Attempts to argue the importance of digital transformation within Industry 4.0 (Schwab, 2016) and its visible acceleration since the start of the COVID-19 pandemic show that the use of digital technologies goes beyond the business context and is crucial not only for entrepreneurs, but also for the public sector and municipalities, the ecosystem and citizens. The success of the digital approach within the framework of corporate social responsibility can increase the efficiency of corporate governance, as well as reduce the negative impact on the environment (Ionașcu, Ionașcu, Nechita, Săcărin, & Minu, 2021). On the other hand, the concept of “*digital entrepreneurship*” is becoming a factor in the development of a bio-based economy and improves the reputation of socially responsible companies

(Nikolova-Alexieva & Angelova, 2019). Also, the introduction of artificial intelligence (AI) into people's lives provides significant benefits in environmental policy development and environmental management (Iakovidis, et al., 2021).

It should be taken into account that smart solutions within any business are a good way to reduce CO2 emissions, but there are also a number of concerns about their negative impact on the environment due to the widespread use of some very popular digital activities and services such as social media, cryptocurrency trading, digital banking products and the global use of mobile devices (Data, Digital Technology, and the Environment, 2021).

2. Plan for EU business digitalization

The EU's ambitious COVID-19 recovery plan aims to address imbalances in the Community's economic and social structures in a timely and resourceful manner and to actively support Europe's green and digital transition³. In this regard, the focus is on the dynamics of digitalization, which is visualized at four points of reference, forming the core of SMEs competitiveness (See Fig. 1). The digital business transformation is one of the key areas (pillars) underlying the envisaged "Next Generation EU" recovery instrument with a budget of 806.9 billion Euros (European Commission, 2021). The "Digital Europe" strategy predominantly funds the integration of digital technologies in small and medium-sized businesses as a priority area for the EU's economic development.

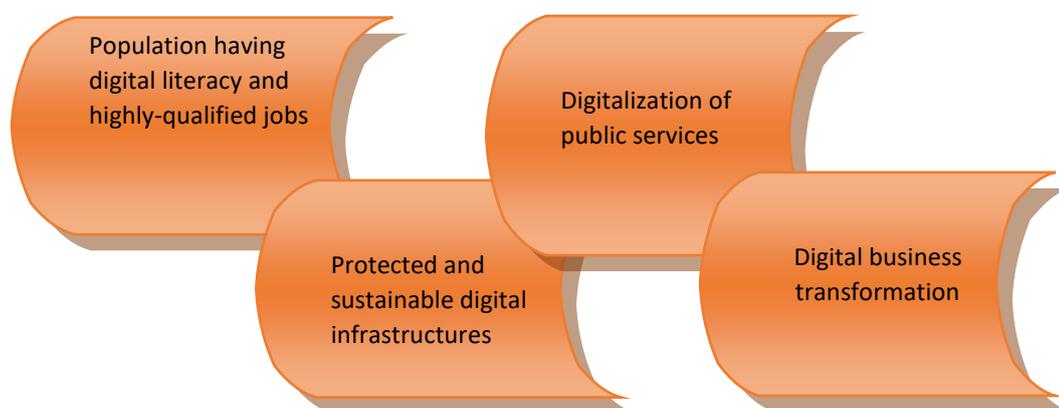


Figure 1. Key trends of EU digital development with a 2030 horizon

Sources: *Digital Economy and Society Index (DESI) 2021. Thematic chapters*, European Commission, 2021, <https://digital-strategy.ec.europa.eu/en/policies/desi>; *An SME Strategy for a sustainable and digital Europe*. European Commission, Brussels, 10.3.2020, COM (2020) 103 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0103&from=BG>.

³ See: Recovery and Resilience Facility, established with Regulation (EU) 2021/241 on 19 February 2021 and NextGenerationEU recovery instrument.

The digital sovereignty of companies in the EU undoubtedly depends on the actual use of digital technologies in the companies' activities. The level of digital technology adoption in the EU companies can be traced by calculating the "Digital Intensity Index" (DII), the value of which depends on the number of digital technologies⁴ that entrepreneurs actually use in their business (See Fig. 2).

DIGITAL INTENSITY INDEX v3 (2021)		
The index is derived from the following features in:		
	2021	
DI3_INDEX	0-12	Give one point for each of the following 12 conditions, if true:
		Enterprises where more than 50% of the persons employed used computers with access to the internet for business purposes
		Have ERP software package to share information between different functional areas
		The maximum contracted download speed of the fastest fixed line internet connection is at least 30 Mb/s
		Enterprises where web sales were more than 1% of the total turnover and B2C web sales more than 10% of the web sales
		Use any IoT
		Use any social media
		Have CRM
		Buy sophisticated or intermediate CC services (2021)
		Use any AI technology
		Buy CC services used over the internet
		Enterprises with e-commerce sales of at least 1% turnover
		Use two or more social media
E_DI3_VLO	Enterprise has very low digital intensity index v3	Count of enterprises with points between 0 and 3
E_DI3_LO	Enterprise has low digital intensity index v3	Count of enterprises with points between 4 and 6
E_DI3_HI	Enterprise has high digital intensity index v3	Count of enterprises with points between 7 and 9
E_DI3_VHI	Enterprise has very high digital intensity index v3	Count of enterprises with points between 10 and 12

Figure 2. Digital technologies, included in the DII in 2021.

Source: <https://circabc.europa.eu/sd/a/85e9f133-c930-4453-84d0-2161469b1695/DIGITAL%20INTENSITY%20INDEX.pdf>

Europe's ambition set out in the Strategic Plan for Digital Transition to 2030 is to achieve a minimum baseline level of digital intensity for over 90% of EU enterprises (Commission, 2030 Digital Compass: the European way for the Digital Decade, 2021). At the company level, the assessment of the intensity with which companies implement digital technologies can vary from 0 to 12, i.e. at

⁴ The Digital Intensity index constantly changed its composition over the period 2015-2021.

zero value of DII, the individual business unit does not use any of the digital technologies included in the index, and at least “4” of the structure of DII is considered to be the baseline level of digital intensity.

3. Investigating EU business digitalization

Increasing the intensity of the use of digital technologies in the activities of companies in the EU is undoubtedly one of the main priorities. However, the data in Figure 3 show that the percentage of SMEs and large companies using digital technology the least is still too high. These indications are particularly worrying in Bulgaria and Romania, where about 80% of SMEs and about 40% of large enterprises have DII below baseline. The situation with SMEs in Hungary, Latvia, Greece and Poland is almost similar. It should be noted that large companies show higher digital progress in all EU Member States⁵. According to a study by the European Commission, most often the set of digital technologies of companies with very low DII includes only a few computers and a website of the business unit (European Commission, 2019). In countries such as Bulgaria, for example, there is no lack of investment in digital technologies, but the problem with their actual implementation stems from the lack of awareness of their business benefits and the insufficient encouragement of companies to use them. Another challenge for the digital transition in almost all EU countries is the need to increase the digital skills of employees in companies (European Commission, 2021).

⁵ There is no data on the percentage of large enterprises in Finland with very low DII.

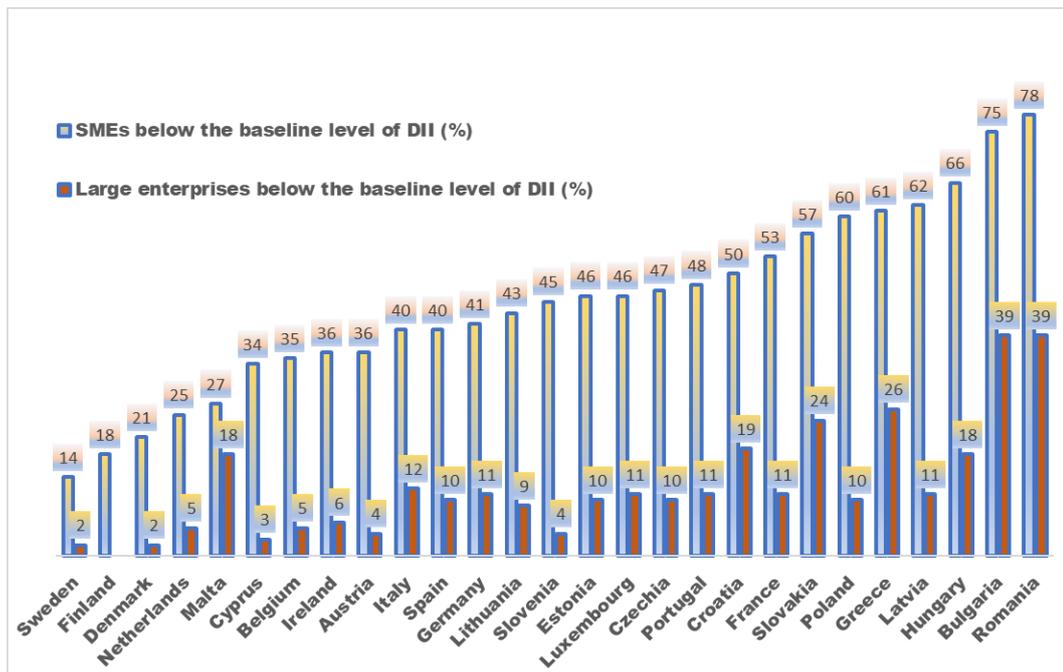


Figure 3. Percentage of SMEs and large companies in EU with DII below baseline (2021)

Source: Eurostat and authors

The percentage of SMEs with DII below the baseline level is significantly lower in Sweden, Finland, Denmark, the Netherlands and Malta. The reasons for this are the higher percentage of the population in these countries with digital skills, including those with ICT education and the government policies aimed at the widespread introduction of 5G connectivity in the public and private sectors. The superiority of SMEs in countries with higher levels of digital intensity lies in the use of cloud technologies and social media, unlike other European countries, which do not yet realize the full potential of these services. However, European companies that are leaders in business digitalization still have a number of staffing problems in the area of ICT. The expectations after the restrictions on mobility due to the COVID pandemic are for greater attention and dissemination of the possibilities of artificial intelligence among SMEs and large companies, which will have a positive impact not only on profits but also on the environment.

According to the information visualized in Figure 4, it can be seen that the highest percentage of companies which in 2020 manipulated labour mobility, allowing more of their employees to have remote access to their work emails and other ICT or organized workshops through remote means (online platforms) is in Finland. The second and third place are occupied by the companies of Malta and Sweden, which are also striving to actively acquire the potential of digital technologies in the context of the COVID pandemic.



Note: 8 countries are not included in the study – Czechia, Estonia, Romania, Croatia, Ireland, France, Spain and Greece.

Figure 4. Total percentage of SMEs and large companies in EU Member States that in 2020 increased the percentage of staff with remote access to business e-mail, other ICT and the number of online meetings held through one of the platforms Skype, Zoom, MS Teams etc.

Source: Eurostat and authors

Bulgaria remains last in this ranking, as only 22% of Bulgarian companies in 2020 optimized the structure of their employees in favour of remote work. The situation is similar in Poland and Lithuania, which rank 17th and 18th according to these indicators.

The following main conclusions can be formulated from the above analysis and evaluation:

- ✓ the percentage of SMEs and large companies in the EU countries that use digital technologies the least is still too high;
- ✓ SMEs are less digitalized and the digital divide between the leading enterprises and those that follow them gets bigger in the different EU Member States;
- ✓ large companies show higher digital progress in all EU countries;
- ✓ the investment in digital technologies and the capacity of enterprises in some countries (especially in SMEs) are still low, which requires additional provision of funds;
- ✓ the digital skills of the staff in the enterprises become essential, which requires that their level is improved in accordance with the new requirements of the market and the society;
- ✓ the options for labour mobility and greater flexibility for organizing employment are increasing;
- ✓ there are no policies for the wider implementation of the 5G connectivity in the public and private sector.

Conclusion

The evolution of information and communication technologies has largely enabled EU enterprises to develop flexible and competitive behaviour, based on the ideology of the paramount importance of digitalization, as a means (tool) to build a positive image and reputation. The wider and multifaceted use of modern digital technologies facilitates, accelerates and creates greater opportunities for enterprises to realize more economic and financial benefits through speed, flexibility and competitiveness not only locally but also globally. On the other hand, digitalization provides more accurate and faster detection of risk circumstances, limitation of difficulties and isolation of weaknesses.

Digitalization will continue to be a major factor with a multifaceted role for modern enterprises in the EU countries. Within the framework of the present study, however, problems related to the adaptation of SMEs to innovations are outlined, given their current system and technological status. Due to objective features and already established traditions in making management decisions in some companies, as well as the often insufficient budget intended for attracting specialists with digital skills and accelerated implementation of ICT, the options for business automation are limited, and hence for the increase of its effectiveness. Possible solutions to overcome the challenges require the formulation of a common vision not only at the strategic level, but also at the operational levels at higher levels of flexibility. In addition to organizational optimization, closing the gap in the digital skills of staff is also considered a key priority for the digital transformation process, which can only be realized through more digital investments.

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STATISTICAL EVALUATION OF E-COMMERCE IN THE
EUROPEAN UNION AND THE REPUBLIC OF NORTH
MACEDONIA

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Abstract

In the current study, we conduct a comparative analysis of the European Union countries and the Republic of North Macedonia in terms of the e-commerce development in the period 2010-2021. We identify the place of e-commerce as a key element of business digitalisation. We present the information sources of the indicators for characterising e-commerce and classify them as direct and indirect indicators based on their relation with the e-commerce development. We analyse and compare the dynamics of the indicators for the EU countries and the Republic of North Macedonia by growth rates and their ratios. We apply an approach where, based on the level of the indicators in 2010 and the change over the period 2010-2021, the countries are classified into four groups – running ahead, lagging ahead, catching up and falling behind. We thus position countries in terms of their prospects for e-commerce development.

Keywords: e-commerce, comparative analysis, growth rates and their ratios

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1. Introduction

As a result of using digital technologies, the business environment is changing, and the efficiency in the activities of enterprises is increasing. In addition, new technologies are facilitating the implementation of modern management, communications and access to information. Creating an environment for the widespread application of information and communication technologies in all areas of the economy and social life is one of the goals of “Shaping Europe’s digital future” (2020) and is among the priorities of “A new strategic agenda” (2019).

The COVID-19 pandemic has confronted us with new challenges. The restrictions imposed, objective or coercive, on the activities of firms in various sectors have also affected the commercial relationships between producers and customers. The benefits of e-commerce as good opportunities for developing enterprises, attracting new customers and expanding markets, and improving financial performance, has become even more evident during the extraordinary crisis conditions. In specific periods, when many retail stores were closed, e-commerce became the only source and supplier of necessary goods for a large part of the population and, simultaneously, an acceptable way of commercial business functioning (Tran, 2021; Amsari & Sari, 2022).

The object of study in the current paper are the state and opportunities for e-commerce development in the EU and the Republic of North Macedonia. **The subject of study** are the indicators used to assess the potential of e-commerce integration in enterprises' activities and the results of its implementation. **The aim** of the paper is to examine the differences between EU countries, including the Republic of North Macedonia as a candidate for membership, in terms of the state of e-commerce and the speed at which changes are occurring. The analysis is conducted only for e-commerce in non-financial enterprises.

2. E-commerce and business digitalisation

E-commerce is demonstrating the implementation of digital technologies in business. At the EU level, several legislative acts forming a complex framework, starting with (Directive 2000/31/EC), regulate the digitalisation process. This series of documents represents a set of interrelated measures that enable European citizens to use e-commerce.

In the scientific literature, there are various definitions of e-commerce. The basis of all of them is the use of information and communication technologies and, in particular, connection through computer networks, including the Internet (Angelovska & Ivanovska, 2019; Turban, King, Lee, Liang, & Turban, 2015; Tian & Stewart, 2008). In the public domain, advertising the products and/or services offered by a firm through its website – presenting the firm, providing a product catalogue and possibly prices, represents e-commerce. The fast development of digital technologies enhances e-commerce. Customers place orders and sometimes make payments online. Providing feedback to customers, for instance, via embedded e-mail, chat or an electronic forum for questions and comments, constitutes a higher standard of e-commerce.

Various authors, among which (Tosheva, 2020; Gunasekaran, Marri, McGaughey, & Nebhwani, 2002; Falk & Hagsten, 2015) highlight the advantages of e-commerce in different aspects. A website or a mobile application has a positive image effect for the company and is an opportunity for its portfolio to reach more customers, thereby increasing the market coverage. Interactive tools allow the features of the offered goods and services to reach customers in a faster and more attractive way and provoke their interest. Removing the time and space constraints of selling and buying saves time and money on communication between the trader and the customer. At the same time, ensuring an ongoing relationship with the supplier, where the consumer can get a quick answer to their questions, wins more customers. Automation of buying and selling processes reduces the cost of maintaining physical stores. Modern information technology and the possibilities of “big data” allow the personalisation of offers and increase the competitiveness of companies. Therefore, many firms are increasing their investments in web content and mobile applications to reach more suppliers and consumers.

The importance of e-commerce has been growing naturally in the wake of the Covid-19 pandemic (Koch, Frommeyer, & Schewe, 2020). Consumer awareness has increased, which has led to a decrease in purchase decision time. The e-commerce portfolio is expanding to offer specific services. The variety of online educational tutorials and courses on the web and e-learning is a logical extension of conventional education through “edtech” tools. As a result of the authorities’ call to minimize physical contact, patients are given medical advice and provided with medical care through so-called “telemedicine”. Through virtual shopping, customers are able to visit a shop, try on clothes or see a simulation of furniture in their homes.

3. Information aspects of the statistical evaluation of e-commerce

3.1. Data

Eurostat, the statistical office of the EU, provides reliable and high-quality numerical information on e-commerce. The primary data source is the annual surveys conducted since 2004 in the areas of ICT and e-commerce use in enterprises and ICT use by households and individuals. Periodic surveys from other European Commission services and “ad hoc” ones on specific issues complement the information acquired by the annual surveys.

The population of the e-commerce survey is all economically active enterprises in the country with ten or more employees. The data are collected through a questionnaire and aggregated by economic activity, size, depending on the number of employees, or territorial location. The questionnaire consists of several modules, one of which is “e-commerce”. There are two subtopics – e-purchases and e-sales, together with the payment method. Questions are included on both the geographical scope of e-commerce and the generated turnover. Specific issues, for example, best practices in e-commerce and barriers to e-commerce, are explored through particular modules in different years.

We select from a causal point of view, i.e. reflecting their different importance for the development of e-commerce, the indicators characterising e-

commerce in enterprises, for which we apply statistical analysis. Therefore, we separate them into two groups. The indicators from the first group we call *indirect* because they serve to describe the prerequisites necessary for e-commerce. These are access to the Internet, use of computers and the Internet by employees in the enterprise, type of Internet connection, availability of a website and its functionalities, etc. We refer to the indicators from the second group as *direct* because they represent the results of e-commerce. These can include volume and value of e-commerce sales, e-commerce purchases, e-invoicing, barriers to e-commerce, etc.

In correspondence with the two criteria mentioned above, for the aims of the analysis, we have selected the following two indicators. The direct indicator is *E1* “Enterprises with e-commerce sales”, representing the share of all enterprises that have made sales through e-commerce in the previous calendar year. The indirect indicator analysed in this study is *E2* “Enterprises with a website”. It represents the share of all enterprises that have a functioning website. The unit of measurement for both indicators is a percentage.

The primary source of the statistical dataset for the analysis is the Eurostat database (ICT usage in enterprises, n.d.). Considering the length of the time series available on the “Digital Economy and Society” theme, we set the study period to 2010-2021. For some EU countries and some years of that period, there are missing values of the selected indicators. For this reason, we use two different imputation approaches (Handbook on constructing composite indicators: methodology and user guide, 2008, p. 55). When the missing value of the time series is between the first and the last year, we substitute it with the average of the two known adjacent values. We apply this approach for the values of indicators *E1* in 2020 for Greece and *E2* in 2019 for Finland. In case the missing value is for 2021, we use the predicted value resulting from straight-line modelling of the corresponding time series. We use this technique for Belgium, Denmark and Estonia for indicator *E2*. For the Republic of North Macedonian data, we use the MAKStatDatabase (Information Society, n.d.).

3.2. Methodology

We conduct the statistical analysis of the selected indicators in the following two aspects:

- analysis of the dynamics of the indicators;
- evaluation of the state and development of e-commerce.

We evaluate the *dynamics of the indicators* characterising e-commerce by measuring the speed and direction of their change. We use descriptive statistics such as absolute growths and growth rates to assess absolute and relative changes, and their intensity, in e-commerce. We use the average exponential growth rate as a summary measure of the speed (intensity) at which indicators change.

In order to *assess the state of e-commerce*, we identify groups of countries for each indicator. The justification for forming the groups lies in two criteria. The first one represents the indicator level for each country at the beginning of the period under study. For this purpose, we calculate the “initial relative level”, denoted by v_0 . For each of the indicators under study, it is calculated as the ratio

of two levels in 2010, the indicator level for the specific country and for the EU-27. Thus constructed, the metric takes only positive values. Moreover, if the country-specific value is above the EU-27 average, then $v_0 > 1$. Conversely, if the level is lower than the European average, $v_0 < 1$.

The second criterion assesses the speed with which changes occur in different countries. Here, we use the “average rate of growth rate” ($\overline{K_a}$), calculated as the ratio of the average growth rate for the specific country and the average growth rate for the EU-27. Again, the comparison of values is against the number 1. Changes are more intense if $\overline{K_a} > 1$ and are slower if $\overline{K_a} < 1$.

As a result of the combination of the possible cases under the two criteria, we classify the countries into four groups:

- **running ahead**, for which the initial relative level of the indicator is above the average EU level and the changes are more intense than the average for the EU;

- **lagging ahead**, for which the initial relative level of the indicator is below the average EU level and the speed of changes is slower than the EU average;

- **catching up**, for which the initial relative level of the indicator is below the average EU level and the speed of changes is faster than the EU average;

- **falling behind**, for which the initial relative level of the indicator is below the average EU level and the speed of changes is slower than the EU average.

It is possible to obtain a limiting value of 1 for either of the two metrics. When $v_0 = 1$, the country is classified as catching up or falling behind, depending on the value of $\overline{K_a}$. If $\overline{K_a} = 1$, then the country is classified as either running ahead or lagging ahead, depending on the value of v_0 .

4. Evaluation of the state and dynamics of e-commerce

4.1. Evaluation of the dynamics of the indicators characterising e-commerce

The graphical representations of the level of the analysed indicators for the EU-27, presented in Fig. 1 and Fig. 2, reveal an increasing trend. Although the level of indicator **E2** (between 66% and 78%) is higher than the level of indicator **E1** (between 15% and 22%), the increasing trend is more pronounced for indicator **E1**. The average growth rate over the period for indicator **E1** is 3.63%, and for indicator **E2**, is 1.42%. The conclusion is confirmed by the results for the absolute growths and growth rates on a chained basis. The absolute growths for the two indicators are similar, up to 2 percentage points, so the growth rates explain the differences in the dynamics. The increase in the level of indicator **E1** is more than 5.00%, with the largest growth rate of 11.76% in 2015. In the case of indicator **E2**, the increase is up to 3.03% (the value for 2011). Despite these differences, there is also a similarity in the dynamics of the two indicators. With large fluctuations in indicator **E1** and minor fluctuations in **E2**, their growth rates decrease over the period, indicating a slowdown in the upward trend in levels.

The development of e-commerce in the separate EU-27 countries can also be assessed as an upward trend. The results for the average growth rate of each

indicator support this conclusion - only 3 of the values of both indicators for the 27 countries are negative. It turns out that over the period, a downward trend in the levels of the respective indicators is found in Germany and Luxembourg with a 1.31% and 2.15% average annual decrease for indicator *E1*, respectively, and in Slovakia with a 0.04% average annual decrease for indicator *E2*. The average growth rates of indicator *E2* for all countries are up to 3.18%, which is evidence of the smooth development of the process. More intense is the dynamics of indicator *E1*, where the average growth rates for most countries are between 2.01% and 7.71% on average per year, and extreme values of 10.28% for Romania and 12.95% for Italy are reached.

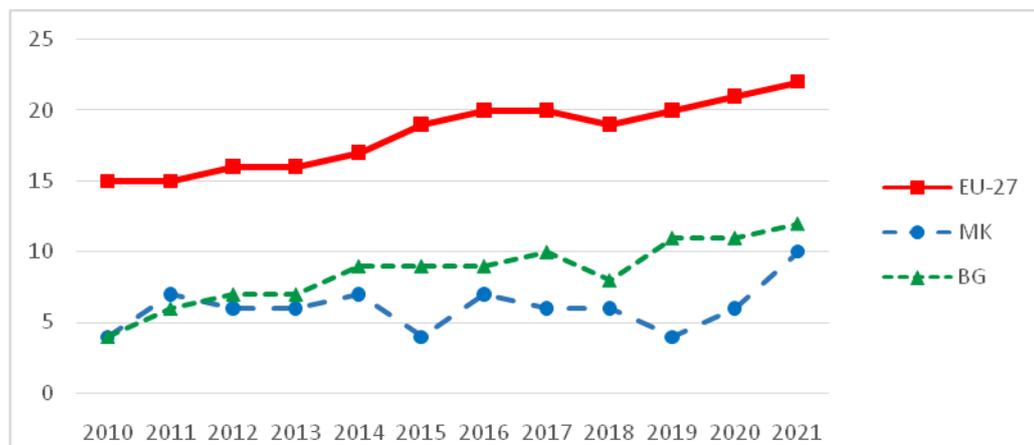


Figure 1. Dynamics of the indicator *E1* “Enterprises with e-commerce sales” in the EU-27, Bulgaria and the Republic of North Macedonia in the period 2010-2021

Source: the authors

The dynamics of the indicators for the Republic of North Macedonia differ from the identified patterns for the EU-27 but have many common features with Bulgaria. From the graphical representation in Fig. 1, the lower levels of the indicators for both countries and the larger fluctuations for the Republic of North Macedonia are prominent. Although both countries start from the same level of 4% for indicator *E1* in 2010, at the end of the period Bulgaria reaches a higher level with an average annual growth rate of 7.88%. Until 2019, the dynamics of indicator *E1* for the Republic of North Macedonia are characterised by oscillations around a constant level with an average growth rate close to 0, which does not allow us to conclude a trend. The 67% jump in 2021 compared to 2020 is the largest growth rate not only for the Republic of North Macedonia but also for all EU27 countries over the study period. As a result, the average annual growth rate for indicator *E1* for the Republic of North Macedonia over the entire period is positive – 2.10%. If this trend continues, the gap can be shortly closed.

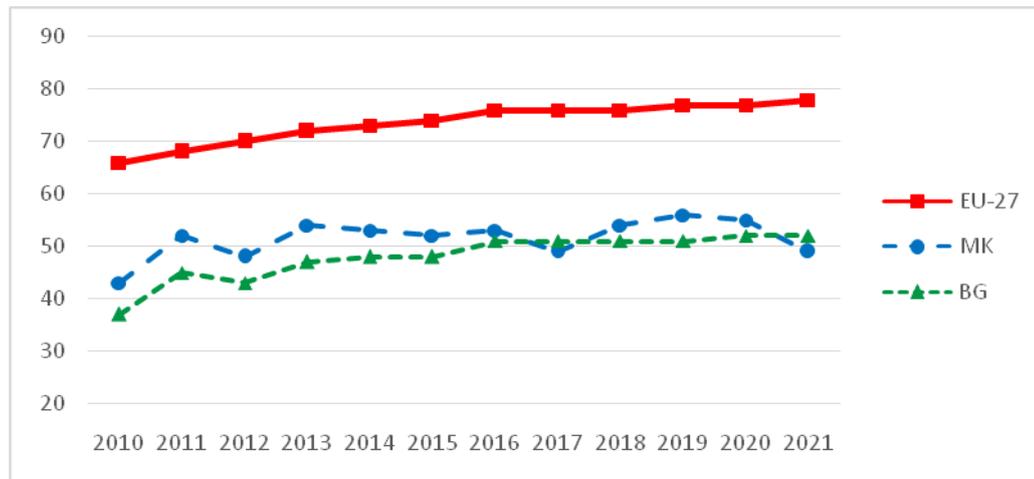


Figure 2. Dynamics of the indicator *E2* “Enterprises with a website” in the EU-27, Bulgaria and the Republic of North Macedonia in the period 2010-2021
Source: the authors

The Republic of North Macedonia has a 16.21% higher initial level of indicator *E2* than Bulgaria. Over the period, the development of the indicator for Bulgaria is characterised by an upward trend with small fluctuations therefore the average annual growth rate is 2.44%, and in 2021 its level is 6.12% higher than for the Republic of North Macedonia. This is also partly due to the fact that in 2021 the Republic of North Macedonia registers the highest negative growth rate - 10.90% for indicator *E2* of all countries in the period 2010-2021. This, together with the larger fluctuations in the dynamics, is reflected in the small average annual growth rate of 0.99% for indicator *E2* for the Republic of North Macedonia.

4.2. Classification of the EU-27 countries and the Republic of North Macedonia according to the state and development of e-commerce

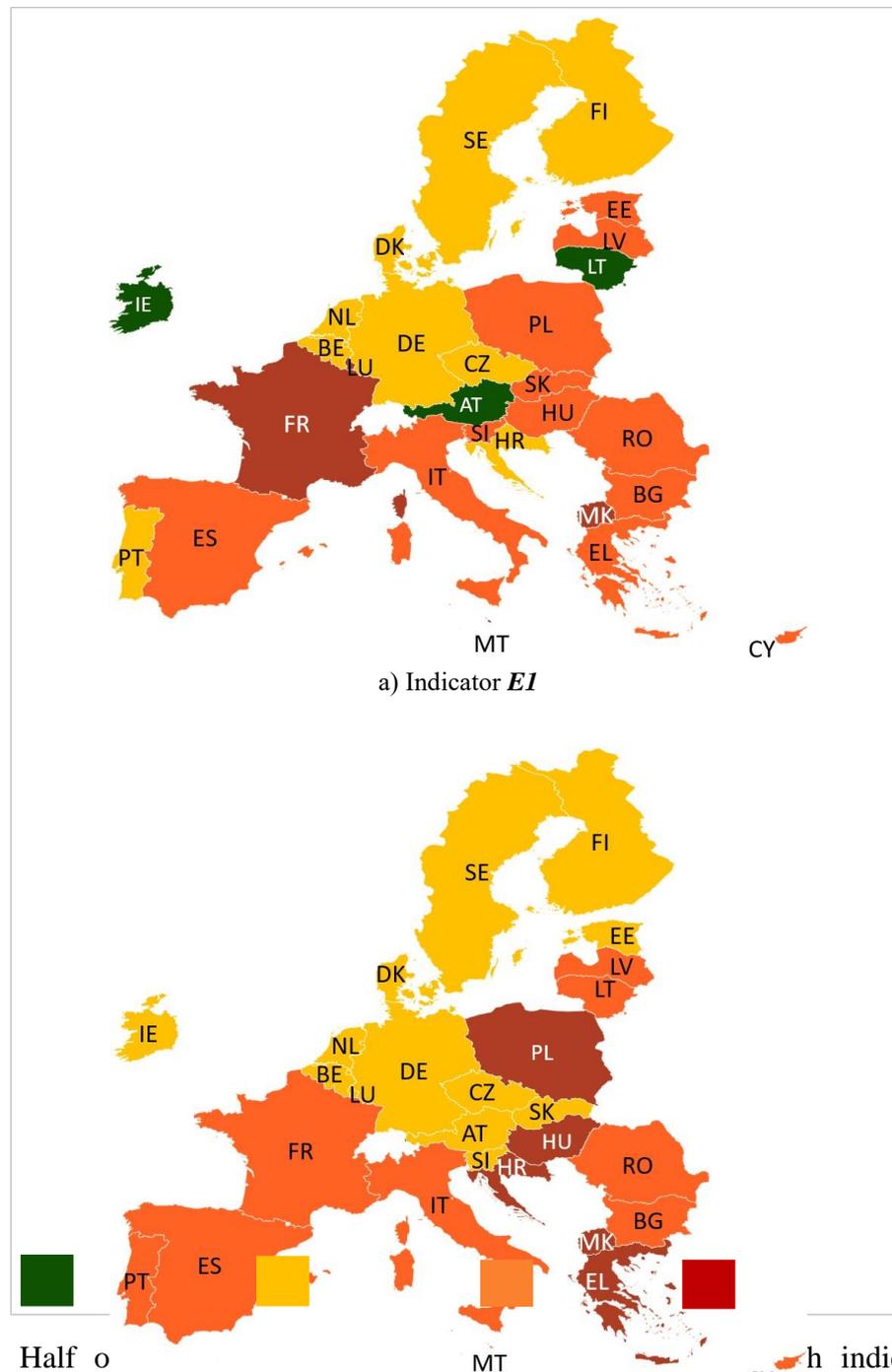
For indicator *E1*, there are two more countries for which the values of v_0 are less than 1 as a benchmark for dividing countries into different groups. Bulgaria and the Republic of North Macedonia have the smallest v_0 value of 0.27. Values above 1 are between 1.13 for Malta and 1.93 for Denmark and Belgium. For indicator *E2*, there are smaller differences between all the countries, including the Republic of North Macedonia and the EU27 average in terms of the initial relative level. Here the values of v_0 are between 0.53 (for Romania) and 1.35 (for Sweden).

The differences between countries in terms of the average rate of growth rate \overline{K}_a are much smaller, i.e. the changes in the levels of the indicators take place at approximately the same speed compared to the EU27 average. For indicator *E1*, the values of \overline{K}_a are between 0.94 for Luxembourg and 1.09 for Italy, with more countries having $\overline{K}_a > 1$. This margin narrows - between 0.95 and 1.03 - for countries whose initial relative level is greater than 1. Even smaller differences between countries according to the values of the average rate of growth rate are observed for indicator *E2*. Here, the smallest value of 0.99 is obtained for Slovakia and the largest value of 1.02 for Romania. \overline{K}_a has a value above 1 for

only 1/3 of the countries. No country for which the initial relative level is above 1 achieves an average rate of growth rate also above 1.

Based on the two criteria - initial relative level and average rate of growth rate, for each of the indicators, countries are classified into four groups - running ahead, lagging ahead, catching up and falling behind. A cartogram of the groups is presented in Fig. 3.

The distribution across country groups is uneven for both metrics. Countries which are lagging ahead and catching up dominate the map. Running ahead and falling behind countries can be taken as exceptions. Moreover, there are no running ahead countries for indicator *E2*. It is noteworthy that the countries in the lagging ahead group for both indicators are concentrated in Northern and Central Europe. The catching up group for indicator *E1* is located in Southern and Eastern Europe and the Baltics, and for indicator *E2* in Western Europe and the Baltics.



the Republic of North Macedonia is *jaung venna*, Italy, Romania, Bulgaria, Cyprus, Latvia and Spain are *catching up*, while Finland, the Czech Republic, Germany, the Netherlands, Sweden, Denmark and Belgium are *lagging ahead*. The largest group for indicator *E2* is the *lagging ahead* with 13 countries.

Figure 3. Cartogram of country groups according to the state and development of e-commerce
Source: the authors

For indicator *E1*, 9 countries are better. Austria and Ireland are running ahead, Malta and Lithuania are lagging ahead for *E1*, and all are catching up for *E2*. For *E1*, Croatia is lagging ahead, and Hungary, Poland and Greece are catching up but are falling behind for *E2*. Portugal is lagging ahead for *E1* but is catching up for *E2*. The remaining 5 countries are in a “better” group for *E2*. France and Luxembourg are falling behind for *E1*, but they are catching up and lagging behind for *E2*, respectively. Slovenia, Estonia and Slovakia are catching up for *E1*, but they are lagging ahead for *E2*.

5. Conclusion

In order to evaluate e-commerce in this study, indicators are selected using a criterion based on the cause-effect relationship. The indirect indicator “Enterprises with e-commerce sales” characterises the prerequisites for e-commerce and the direct indicator “Enterprises with a website” presents its results.

The dynamics of the levels of e-commerce indicators, both overall in the EU27 and by individual country, show an increasing trend over the period 2010-2021. The indicator that characterises the preconditions for e-commerce has a higher level than the indicator that can be used to assess the outcome of e-commerce. A slowdown in the speed with which changes occur is found.

The EU-27 countries and the Republic of North Macedonia are classified into groups according to the state and development of e-commerce. The basis for forming the groups are two criteria. The first one represents the indicator level for each country at the beginning of the study period. The second criterion assesses the speed at which changes occur in the different countries. The combination of the possible cases under the two criteria results in four groups of countries: running ahead, lagging ahead, catching up and falling behind.

The distribution across country groups according to the initial relative level and the speed of change is uneven across the two indicators. Lagging ahead and catching up countries dominate the EU map. The exceptions are the running ahead and falling behind countries. There are no running ahead countries for “Enterprises with a website”. For this indicator, the catching up countries are located in Western Europe and the Baltics, and for the indicator “Enterprises with e-commerce sales” in Southern and Eastern Europe and the Baltics. Countries falling into the group of lagging ahead for both indicators are concentrated in Northern and Central Europe.

Most countries identified as lagging ahead fall into this group due to high levels of indicators, significantly greater than the EU27 average. Therefore, and due to the saturation level of indicators, the slowdown in the rate of increase is an objective process.

The catching up countries give a good example to the rest by aiming to approach the best. This is especially true for those countries whose indicator levels are slightly below the EU27 average - a faster than EU average speed of change can place them in the group of running ahead in a short time.

The development of e-commerce remains a problem in the catching up countries, including Bulgaria, where the levels of indicators are far below the EU-

27 average. Even with a much faster speed of change than the EU27 average, it would be difficult to reach the European average in the foreseeable future.

The greatest efforts to create the conditions for the development of e-commerce and to exploit its advantages should be made by the countries in the group of falling behind, where the Republic of North Macedonia falls. The actions of companies need to be supported by government measures to stimulate the acceleration of processes.

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PAY PERCEPTION AND EMPLOYEES INTENT TO
LEAVE, STUDY OF THE MACEDONIAN NON-BANKING
FINANCIAL SECTOR

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Snezana Hristova⁴

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Abstract

The main purpose of this paper is to examine the pay perception among the employees in the non-banking financial institutions in North Macedonia and its correlation with employees' intent to leave their current positions. The data to be analyzed was gathered through anonymous on line questioner consisting of Likert-scale measures.

The results show that familiarity with pay differences does not significantly affect employees' intent to leave. The findings indicate that majority of employees within the Macedonian non-banking financial institutions claim to understand how their pay and pay raises are determined, usually compare salaries and are aware of the industry pay ranges for their job positions. In addition, the majority of employees are neutral on the questions related to pay differences. Nonetheless, this lack of understanding of the pay system does not significantly influence their intention to leave the company they work for.

There is no study on the pay perception and employee intention to leave among nonbanking financial institutions in North Macedonia. On the other hand, there is a need of finding the crucial factors for employees' intent to leave, in order to be able to retain well-trained and trustworthy team, especially taking into consideration the fact that these institutions are frequently facing challenges where employees are leaving their current jobs to join competitors from the same industry.

Keywords: Pay perception; Intent to Leave; Non-Banking financial institutions; North Macedonia

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1. Introduction

According to the Macedonian Law on Financial Institutions (Official Gazette of RNM No. 158/10, 53/11, 112/14, 153/15 and 23/16), non-banking financial institution is an institution that performs one or more of the following activities: crediting, issuing and administering credit cards, factoring, issuing letters of guarantee, financial consulting, renting movable and immovable property, including operating lease.

As of April 2021, there were total of 32 non-banking financial institutions registered in the North Macedonia, since the beginning of the enforcement of the Law of Financial Institutions, starting from December 17, 2010. Most of these institutions were registered with foreign capital and are using foreign investments for lending through investment platforms.

Initially these institutions started recruiting people with a finance background for the top management positions and people without professional experience for the junior specialist positions. Employing people without financial knowledge was an idea for providing detailed training for the newly established industry and targeting young people to develop together with the businesses and the industry. The first employees of these institutions were responsible for establishing every process of the business from getting a license to creating and visualizing a customer relationship system.

Employees were recruited with a very competitive compensation programs, high average salaries and were offered very promising career paths. As time went by and the markets became familiar with the fast and easy products, these institutions started recruiting people from banks and other specialized sectors in order to respond to the frequent customer needs. As a result, the level of the average salary in these institutions started decreasing. The turnover of the employees was evident, especially movements within the same sector.

There is no study on the pay perception and employee intention to leave among nonbanking financial institutions in North Macedonia. On the other hand, there is a need of finding the crucial factors for employees' intent to leave, in order to be able to retain well-trained and trustworthy team, especially taking into consideration the fact that these institutions are frequently facing challenges where employees are leaving their current jobs just to join institutions in the same industry. Such actions may be provoked by unfitted organizational culture, structure and/or processes or payment incentives employees are seeking.

In view of this, it is interesting to research whether the pay perception has significant influence on these reoccurring challenges in the Macedonian non-banking financial sector. This paper has the following objectives:

- To develop comprehensive literature review about pay, pay perception, pay differences, pay understanding and intention to leave.
- To provide an empirical analysis of the current situation in the non-banking financial sector in North Macedonia by assessing and correlating between pay perception, through awareness about pay differences and pay understanding with intent to leave.
- To propose recommendations for improving the current situation on basis of the gathered information and analyzed results.

2. Literature Review

2.1. Pay

It is logical to assume that salaries are an important tool for employee's retention, and that more competitive salaries should give workers less reasons to leave for another job. However, is this undoubtedly true? According to Halvorson (2018) employees who earn a reasonable salary are more likely to feel appreciated by an employer, consequently may be less inclined to leave their current employers.

Significant number of studies have attempted to determine the importance of pay to employees, connected to other potential motivators (Rynes, Gerhart, & Minette, 2004; Adkins, 2006; Olafsen, Halvari, Forest, & Dec, 2015). When people are asked directly about the importance of pay, they tend to give answers that are placing pay on a fifth place ranging from a list of eight potential motivators. In contrast, studying actual behaviors in response to motivational initiatives usually select pay as the most effective motivator (Rynes et al., 2004). Locke et al., 1980 have concluded similarly that money is the main incentive and different incentives or motivational tools cannot be compared to money's instrumental value.

In today's world, every employer is emphasizing their compensation and benefits strategies. As high-performing talent is limited, companies are fighting for the same and by changes in their compensation strategies employers could benefit from good deals with high-performing talent. According to Rynes et al. (2004), employees nowadays are more likely to go to some other corporation with higher compensation offerings. This is even more increased with the age of digitalization, where all the information is easily available, on one click.

2.2. Pay Perception

People have individual perception about their pay. Employees pay perception is subjective and it changes from individual to individual due to the influence of vast factors. Nonetheless, the pay perception is the basis of many behavioral outcomes of employees such as pay satisfaction, job satisfaction, organization commitment, intention to leave, etc. (Peluso, Innocenti, & Pilati, 2017). It is vital to understand the determinants of pay perception, or the factors that influence pay perception, in order to fully understand it (Kumari, 2018).

There are companies that choose to make pay practices transparent and those who choose to keep it private, thinking it is the best approach. Pay for performance programs are implemented often, however when there is a small pay difference between outstanding performance and average performance the quality of the approach is doubtful (Mc Knight, 2017). Research investigating pay perceptions and pay communication in companies in two cities in the Midwestern United States, in 2014, concluded that employees had insubstantial pay perception, i.e. insufficient knowledge on how pay works and the connection between pay and performance. The research has confirmed that insufficient information about pay is restricting the employees from getting the right pay perception (Diekmann, 2015).

A study conducted by Bolden-Barrett (2017), discovered on the other hand that employees seemed to be more concerned about feeling valued and having development chances as a reason to change an employer.

2.3. Pay Understanding

Whether employees understand how their pay is determined and how they can achieve certain pay levels depends a lot on the communication of the pay scheme by the management. (Stewart, 2020).

Research shows that employees working in companies where there is an open communication were more likely to understand the pay practices. In cases when companies practiced open communication of pay schemes, 81% of employees have said they had a good understanding of how pay is determined. In organizations where closed communications were practiced, only 56% of employees reported they understand how pay was determined (Diekmann, 2015). According to Pogge (2005), an understanding of the pay system provokes feelings that the pay system is fair and inspires acceptance of pay outcomes.

Providing the principles as to why the pay structure is designed the way that it is, may increase acceptance of the structure and enhance the belief that pay outcomes are fair in relation both to individual contribution, and positively influence the company loyalty and the determination to stay (Shields, Scott, Bishop, & Goelzer, 2012).

2.4. Pay Perception in Correlation to Intention to Leave

Turnover is defined as rate of the entry of new employees in the organization and the exit of the existing employees from the organization (Price, 1989). Comparable definition of the turnover is employee's voluntary termination of the employment from an organization (Muchinsky & Morrow, 1980). Three components appear in the exit process and those are the thoughts of leaving, the intention to look for different job positions in other organizations and the intention to leave. When onboarding employees and throughout the work life employers invest a high amount of money in terms of introduction, training, and development of the same employees within the organization. As a result of this, employers are trying at any cost to minimize employee's turnover within an organization.

Employee turnover in literature is categorized as either voluntary or involuntary (Sutherland & Jordaan, 2004). Only voluntary turnover is focus of this research and it is defined as initiated by the employee in cases when the employee is looking for a better workplace or better job position. According to Firth, Mellor, Moore, and Loquet, 2004, employee's intention to quit is influenced largely by job dissatisfaction, feelings of stress and lack of commitment to the company. There are other reasons for employee turnover already discovered in studies. Additionally, intention to quit has been identified as an indicator for quitting behavior (Firth et al., 2004). According to Nawaz and Pangil (2016), there is a negative connection between positive organizational support and an employee's intention to leave the organization. Employees who feel appreciated and supported by their employers are less likely to leave the organization and look for better job opportunities outside the organization. Consequently, strong

negative relationship between pay and employee turnover intention is also identified.

Literature contains different views about the relationship between pay and actual turnover. According to Huselid (1995), pay is identified as an important determinant of employee turnover. Findings in literature present that pay is one of the most important determinants of job satisfaction, which in turn decreases the turnover rates and consequently it is negatively related to intention to quit (Alam, Aliya & Asim, 2019). Wage was found to be associated with turnover intention in studies such as Albattat and Som, 2013; Carbery et al., 2003; Ghiselli et al., 2001; Pizam and Thornburg, 2000, as cited in Emiroğlu, B. D., Akova, O., & Tanriverdi, H. (2015), where it was concluded that low wage strengthens turnover intention. On the other hand, a study has revealed that in the USA, pay is not a significant reason for employees to leave (Kim et al., 2019), while in other study it is revealed that pay alone was not be enough to retain the best employees (Chew and Chan, 2008).

In relation to pay understanding, it has been discovered that organizations that clearly communicate compensation have a competitive advantage in attracting and retaining talent. If employees are not familiar with what behaviors lead to higher levels of pay, or observe inconsistency in the distribution or rewards, dissatisfaction increases and it can result in lower morale, reduced productivity and increase turnover (Diekmann, 2015).

3. Method

3.1. Sample

The methodology used to come to the conclusions in this paper consists of an anonymous questionnaire, sent in electronic form to full-time employees in the targeted companies, from the nonbanking financial sector in North Macedonia.

Respondents were of both genders (male and female), different age groups (at the age of 21 - 50), with no experience or up to 10 years' experience in the financial industry and different job positions.

The importance of the survey was emphasized by top managers encouraging them to cooperate. The questionnaire received response rate of 73%, i.e. one hundred employees were targeted and 73 of them have provided answers. The survey was carried out April 2020, in a period of three weeks, using Google Forms, survey administration software.

The respondents were employees of ten nonbanking financial institutions, which is 36% from of all non-banking institutions registered in the time when the questionnaire was conducted.

The respondents were holding different positions in five non-banking financial institutions in North Macedonia, which offered a unique opportunity to examine how pay differences are related to employee attitudes in a multi workplace context. The job positions held among the participants were the following: Customer Service Specialists/Sales Agents; Head of Customer Service and Sales; Debt Collection Specialists; Head of Debt Collection; Accounting and Financial Specialists; Business Controllers; Marketing Managers; Human Resources Managers; Public Relations Managers, Chief Operating Officers and

Chief Executive Officers. Given that, these hierarchical categorizations are not necessarily consistent across the sample; the sample is regarded as a single grouping of full-time department-level employees.

Out of 73 respondents 40 are female respondents (54.80%) and 33 are male respondents (45.20%). Most of the respondents (45 or 61.65%) belong to the age group 21 – 35, followed by respondents (28 or 38.35%) from the age group 36 – 50. Respondents at managerial positions (15) represent (20.55%) of the total number of respondents, while respondents at administrative job positions are the larger group of respondents in total number of 58 (79.45%).

3.2. Variable Measures

The questionnaire survey consists of Likert-scale measures of the constructs of interest. In 2012, John Shields, Dow Scott, James W. Bishop, and Paulo Goelzer created the sixth construct in the previously five construct scale, related to pay differences (Shields et al., 2012).

To measure pay understanding a measure was adapted from Mulvey, LeBlanc, Heneman, and McInerney (2002) a four-item test. This scale focuses more on understanding how decisions are to be taken regarding paying workers at different levels.

The results were measured by an average grade of six proposed choices of answers, ranging from "strongly disagree" to "strongly agree", as follows:

- 1- Strongly disagree
- 2 - Disagree
- 3 – Partly disagree
- 4 – Partly agree
- 5 - Agree
- 6 – Strongly agree

4. Results

The results will be presented taking into account the order of the sections in the questionnaire as they follow:

- a) Intent to leave
- b) Pay differences
- c) Pay understanding

According to the analysis of a data set based on a sample of 73 employees, the following results were computed as presented in six sections and thirty tables (*see Table 1 – Table 9*):

- a. The average of the variable: Intent to leave is 2.2, given the minimum scale of 1 and maximum scale of 6. ("strongly disagree" to "strongly agree")
- b. The average of the variable: Pay differences is 3.6, given the minimum scale of 1 and maximum scale of 6. ("strongly disagree" to "strongly agree")

- c. The average of the variable: Pay understanding is 4.5, given the minimum scale of 1 and maximum scale of 6. ("strongly disagree" to "strongly agree")

4.1. Intent to leave

In the set of questions for gathering information about the employees' intent to leave participants were asked to answer if in the near future they see themselves within or outside of the current company (see Table 1 – Table 3). The results show that the intent to leave among the respondents is on a very low *average* of 2.2.

The majority of total respondents (67.12%) disagree with the statement that they have an intent to look for a new job in the next 12 months. 21.92% of the total respondents are neutral, while 10.96% agree they have intent to search for a new job in the next 12 months. The breakdown of the answers can be seen in Table 1.

Table 1. Answers on the question: I intend to look for a new job in the next 12 months.

<i>I intend to look for a new job in the next 12 months</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	40	54.79%
2-Disagree	9	12.33%
3-Partly disagree	8	10.96%
4-Partly agree	8	10.96%
5-Agree	3	4.11%
6-Strongly agree	5	6.85%
Total	73	100%
Average	2.2	

Asked about whether they think about quitting their jobs, majority of employees (65.76%) within nonbanking financial institutions in North Macedonia do not often think about quitting their jobs. Employees who are neutral to this statement are 26.03% from the total respondents; while 8.22% of total respondents answered they agree they often think about quitting their job. This finding aligns with the previous finding for the low intent of the employees to look for a new job in the next 12 months. A breakdown of the findings is displayed in Table 2.

Table 2. Answers on the question: I often think about quitting my job.

<i>I often think about quitting my job</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	35	47.95%
2-Disagree	13	17.81%
3-Partly disagree	8	10.96%
4-Partly agree	11	15.07%
5-Agree	2	2.74%
6-Strongly agree	4	5.48%
Total	73	100%
Average	2.2	

The last summary of results from the section “Intent to leave” is aligned with the previous findings in this section and confirm the low level of intent to leave among employees’ in the nonbanking financial institutions in North Macedonia, with an average rate of 2.2. Majority of total respondents 67.13% disagree with the statement that if they could, they would get a job with another company, 24.66% of total respondents do not have an exact answer and 8.22% agree they would get a new job outside of the company if they could. The breakdown of the answers can be seen in Table 3.

Table 3. Answers on the question: If I could, I would get a job with another company.

<i>If I could, I would get a job with another company</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	33	45.21%
2-Disagree	16	21.92%
3-Partly disagree	10	13.70%
4-Partly agree	8	10.96%
5-Agree	2	2.74%
6-Strongly agree	4	5.48%
Total	73	100%
Average	2.2	

4.2. Pay Differences

In the Pay differences section the respondents were given three questions, in order to determine whether they are aware of pay differences and if this possibly correlates to the intent to leave. The given questions were: There are large pay differences among full-time employees, all full-time employees at this company are paid about the same and Full-time employees at the same level get paid about the same. It was interesting to find that in all of the questions the percentage of neutral respondents was significantly over the ones that were strongly agreeing or disagreeing with the statement, i.e. 47.95%, 53.43% and 45.21% respectively. This, together with the average rate of 3.6 on the three questions, leads to a conclusion that this variable does not significantly affect the intent to leave. Breakdown of the answers is displayed in Tables 4–6.

Table 4. Answers on the question: There are large pay differences among full-time employees.

<i>There are large pay differences among full-time employees</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	5	6.85%
2-Disagree	9	12.33%
3-Partly disagree	18	24.66%
4-Partly agree	17	23.29%
5-Agree	10	13.70%
6-Strongly agree	14	19.18%
Total	73	100%
Average	3.8	

Table 5. Answers on the question: All full-time employees at this company are paid about the same.

<i>All full-time employees at this company are paid about the same</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	13	17.81%
2-Disagree	10	13.70%
3-Partly disagree	20	27.40%
4-Partly agree	19	26.03%
5-Agree	8	10.96%

6-Strongly agree	3	4.11%
Total	73	100%
Average	3.1	

Table 6. Answers on the question: Full-time employees at the same level get paid about the same.

<i>Full-time employees at the same level get paid about the same</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	7	9.59%
2-Disagree	7	9.59%
3-Partly disagree	12	16.44%
4-Partly agree	21	28.77%
5-Agree	19	26.03%
6-Strongly agree	7	9.59%
Total	73	100%
Average	3.8	

4.3. Pay Understanding

Pay understanding among employees in the nonbanking financial sector in North Macedonia has an average response rate of 4.5 that indicates that majority of employees fully understand how their pay is defined and how the same varies in other companies in the same industry. The highest number of respondents have answered they fully agree they understand how their salary is determined, how their company's pay rates compare with what employees are paid in other companies in the industry and what are the pay ranges for their job position.

Majority of the employees (643.9%) agree that they understand how their pay is determined (as shown in Table 7), majority of 50.69% of total respondent's agree that they know how their company's pay rates compare with what employees' are paid in other competitive companies (as shown in Table 8), and majority of 65.76% the employees understand the pay ranges for their job (as shown in Table 9).

Table 7. Answers on the question: I understand how my base salary or wage is determined.

<i>I understand how my base salary or wage is determined</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly	4	5.48%

disagree		
2-Disagree	4	5.48%
3-Partly disagree	6	8.22%
4-Partly agree	12	16.44%
5-Agree	24	32.88%
6-Strongly agree	23	31.51%
Total	73	100%
Average	4.6	

Table 8. Answers on the question: I know how my company's pay rates compare with what people are paid in other companies in the area.

<i>I know how my company's pay rates compare with what people are paid in other companies in the area</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	8	10.96%
2-Disagree	5	6.85%
3-Partly disagree	8	10.96%
4-Partly agree	15	20.55%
5-Agree	19	26.03%
6-Strongly agree	18	24.66%
Total	73	100%
Average	4.2	

Table 9. Answers on the question: I know the pay range for my job (maximum and minimum amounts my job is paid).

<i>I know the pay range for my job (maximum and minimum amounts my job is paid)</i>		
Scale	Number of Respondents	% of Total Respondents
1-Strongly disagree	4	5.48%
2-Disagree	4	5.48%
3-Partly disagree	3	4.11%
4-Partly agree	14	19.18%
5-Agree	30	41.10%
6-Strongly agree	18	24.66%
Total	73	100%
Average	4.6	

5. Limitations of the Research

Limitation of this research is the sample size. It is a relatively small sample. Performing the study on a larger sample could generate more accurate results.

The second limitation is connected to the first one and is related to the fact that the researched industry is young, and that the number of institutions registered within this industry is ongoingly increasing, which potentially in the future can result in bigger sample, and possibly different findings. Third limitation is the lack of previous studies on the topic conducted in North Macedonia, so the data can be compared. Last limitation relates to employees objectivity, or possibility of their answers being influenced by the involvement of the top management in the study and/or the lack of other job opportunities in the country as a whole.

6. Conclusion

The research conducted on the employees in the nonbanking financial institutions in North Macedonia found that pay perception, viewed through awareness on pay differences and pay understanding, does not affect employees intent to leave.

The research found that majority of the employees had understanding of how their pays are determined and were unaware or not interested in data about pay differences, but at the same time, they had very low level of intent to leave. They did not think of leaving the company they work for in the near future and even if they could, they would not get a job with another company.

A recommendation from this research is that even though according to the data the intent to leave of the employees in the nonbanking financial sector is low, in practice employees leaving for a competition is a reoccurring problem. Thus, although most of the employees have an understanding of how their pay and pay raises are determined, and they compare pays within the industry, still there is significant percentage of employees that do not know or are neutral to this information. Educating these neutral or indifferent employees about the pay system may result in decreasing currently significant employee turnover.

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RISING INTEREST RATES REDUCE INFLATION: AN
EMPIRICAL STUDY FOR THE REPUBLIC OF NORTH
MACEDONIA

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Abstract

While different countries have different economic climate, a number of common factors have contributed to the increase in inflation: rising prices of energy, raw materials and food, the war in Ukraine, rising fuel prices. The rate of inflation in North Macedonia is at its highest level in recent history.

This article aims to help us understand what rising inflation will mean in this low interest rate environment. This paper analyzes the current developments with growing inflation and makes a theoretical and empirical analysis of the interactions between interest rates and inflation in North Macedonia.

In the theoretical part, the review of the literature revealed that some of the researchers established a unidirectional relationship between the inflation and the interest rate, and some a bidirectional relationship. In the empirical analysis, the daily data of the Central Bank of the Republic of North Macedonia for inflation and interest rates for the period 2006:01 – 2022:06 were used.

Granger Causality Test was used to determine the relationship and its direction in the short term through VECM. As a result of the analysis, bilateral causality among variables was determined in the short term. In other words, inflation is a cause of interest rate and interest rate is a cause of inflation. An increase in interest rates reduces inflation. But, the main problem with using interest rates to control inflation are lags, because take time to affect inflation trends. Yet the NBRSM's adherence to its inflation target can only be gauged with backward-looking inflation statistics. But, at this point, no one really knows how high interest rates might need to climb in order to get inflation back down without creating too much additional unemployment.

The findings have practical policy implications for decision makers in the area of macroeconomic planning, particularly in North Macedonia.

Keywords: Inflation, Interest rates, Cointegration, Monetary policy.

JEL Classification: E31, E43, C12, C22

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1. Introduction

After a long period of relatively low inflation, consumer prices are skyrocketing. The global economy is facing rising prices of primary products on world markets and disruptions in supply chains, which also affect other types of products. These problems have increased production costs in all parts of the world. The war in Ukraine and the West's economic sanctions against Russia have intensified the existing inflation. The inflation is very high and has the potential to continue rising unless policymakers take more aggressive measures. Policymakers face the challenge of stemming inflation without compounding the economic slowdown resulting from the war in Ukraine and related sanctions.

The main task of central banks is to prevent inflation from spiraling out of control - and to bring it back down to the desired pace of around 2%. But I believe this is the most difficult task facing central banks in general.

Prices in North Macedonia, on average, rose by about 7%, in the European Union by about 5.5%, and in the United States, on average, prices rose by about 7.5% (which is the fastest rate of inflation in the United States since 1982). An additional problem and threat for the European Union is now the political crisis (governmental and parliamentary) in Italy.

According to a Pew Research Center analysis (DeSilver, 2022), inflation rates have doubled in 37 of 44 advanced economies over the past two years. High inflation is a big challenge for everyone.

Since the global financial crisis of 2007-2009, interest rates in Europe have remained at almost zero levels (some even negative), and in the Macedonian economy they have been continuously declining. But the current events caused changes in the situation and the final tightening of the monetary policy by the central banks, which heralded the end of low interest rates. Rising interest rates reduce inflation. Central banks have already started to actively increase interest rates in response to the situation, and they are also announcing a new additional increase in interest rates. The Bank of England, FED, ECB, have already done that.

The Federal Reserve has several main goals regarding the economy: to promote maximum employment, to keep prices stable, and to ensure moderate long-term interest rates. The Fed's main tool for dealing with inflation is interest rates. "The Fed uses interest rates as either a gas pedal or a brake on the economy when needed. With inflation running high, they can raise interest rates and use that to pump the brakes on the economy in an effort to get inflation under control." said Greg McBride, a chief financial analyst at Bankrate (Reinicke, 2022). To do that, the Fed has signaled it plans to raise interest rates several times this year — perhaps as many as five — starting in March. And faster-than-expected inflation numbers in January suggest it may need to accelerate its overall timetable. However, Sinclair (Reinicke, 2022) alerts that "They have to carefully walk that tightrope".

The European Central Bank raised interest rates for the first time in more than 11 years, trying to control rising inflation in the Eurozone. The key interest rate has been negative since 2014 in order to encourage banks to borrow money and circulate the money instead of depositing it with the ECB. The ECB has twice

increased interest rates by 0.5 percentage points (the last time on 21.07.2022), and is planning a further increase.

The National Bank of North Macedonia continued with the gradual normalization of the monetary policy to maintain medium-term price stability, through a further increase in the basic interest rate (the interest rate on Central Bank bills increased to the level of 2.5% as of July 2022).

However, the fact is that despite the increase, they will remain very low by historical standards and well below the rate of inflation. „This 2022, it is going to be a tough year.“ said Kristalina Georgieva, managing director at International Monetary Fund (Pomeroy, 2022).

The structure of the paper is as follows: section 2 reviews theoretical basics of interest rate and inflation rate relationship. Section 3 discussed about interest rates and inflation. In section 4, the data and methodology are presented. Section 5 devotes on discussion of the empirical results. Finally, Section 6 presents concluding remarks.

2. Literature Review

Interest rates have played a central role in macroeconomic policy. They have also enjoyed high popularity as policy instruments in developing countries. For instance, high interest rate has been an essential component of many stabilization programs in countries with chronic inflation during the 1980s. One of the basic macroeconomic variables related with interest rate is inflation rate.

Various studies on the relationship between interest rate and inflation have evolved over time in the literature. Some of these studies are theoretically based while some are empirical. The Fisher hypothesis (Fisher, 1930) suggests that inflation is the main determinant of interest rates, and as the inflation rate increases by one percent, the interest rate increases by the same amount (Amaefula, 2016). A relationship between inflation and the interest rate has been established using the Fisher effect as a framework (Fama, 1975,1982; Mishkin, 1992).

Based on theoretic issues and empirical studies, there is bidirectional causality relationship between interest rate and inflation rate (Çiğdem, 2019). Of course, some studies have rejected a strong bidirectional relationship between two-mentioned variables (Asgharpur et al., 2007). Brzezina (2001); and Fave and Auray (2002) have confirmed a relationship between interest rate and inflation rate in the long-run.

So, based on these issues, it is expected that a bidirectional causal relationship will exist.

3. Analysis of the current situation with interest rates and inflation

The volatility of the financial markets remains high. Inflation continues to surprise on the upside. Policymakers face difficulty in predicting supply shocks. At the same time, energy and food shocks appear to be more persistent than previously thought and not just a consequence of the war in Ukraine, as inflation gained momentum before the outbreak of the conflict. Inflation rates for services

and non-energy industrial goods also surprised to the upside, and none of the increases in core inflation each month so far this year were forecast.

In the period January - June 2022, the annual inflation rate in North Macedonia is 10%, on average, which is more than projected. The largest part of the domestic inflation is the result of the pressure from the import prices of food and energy, which so far are growing stronger than expected. These pressures quickly spill over to the prices of other products and services and further fuel inflationary expectations (NBRNM, 2022). Core inflation in Macedonia in June reached 12.30% (May 10.2%), and headline inflation 14.50% (May 11.9%). The conditions in the European Union and the United States are moving in the same direction. The core inflation in the European Union in June reached 4.59% (May 4.51%), and the headline inflation 9.60% (May 8.80%). Core inflation in the USA in June reached 5.9% (May 6.0%), and headline inflation reached 9.0% (May 8.50%). This is shown at Fig.1 and indicates that price pressures are expanding and becoming more persistent.

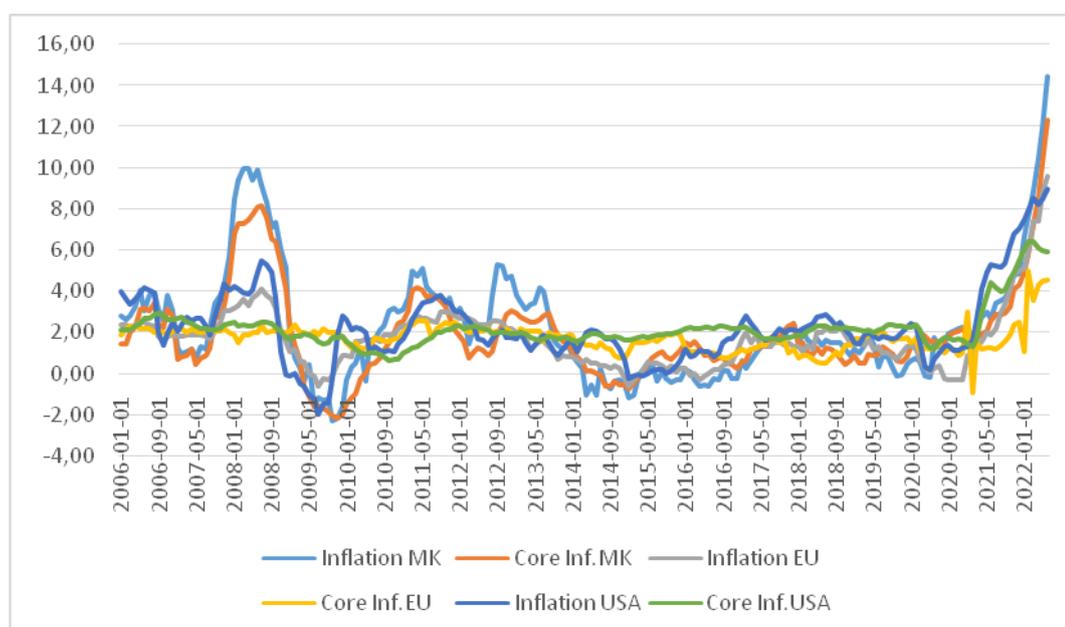


Figure 1. Headline and Core inflation, monthly: RN Macedonia, EU and USA
Source: State Statistical Office of the Republic of North Macedonia, ECB and FED Financial Statistics; Created by the Author

The problem is that any "all-items" CPI will often exaggerate the underlying trend in inflation, usually dominated by extreme changes in global energy and food prices. This can make apparent inflation over the past 12 months dangerously misleading as a guide to future policy for the next 12 months. Core inflation usually captures more persistent components of inflation relevant to medium-term trends. Hence, understanding "core inflation" has rarely been so important.

Core inflation is the change in the costs of goods and services, but it does not include those from the food and energy sectors. This measure of inflation excludes these items because their prices are much more volatile. In the

Macedonian economy is calculated using the consumer price index (CPI), which is a measure of prices for goods and services. Core inflation is a good indicator of current and future trends in inflation, and hence a viable target for monetary policy.

The historically high level of core inflation pointed to increased risks of higher inflation becoming more entrenched and more permanent. Gasmain pressures are also seen to continue to rise, increasing the chances of a stronger and faster pass-through to consumer prices.

4. Data and Methodology

The basic model of interest rate as a function of inflation rate (x) is presented at Eq. (1):

$$y_t=f(x_t) \tag{1}$$

All variables are in percentages; and data have gathered from the State Statistics Office and the National Bank of the Republic of North Macedonia between the period of January 2005 and June 2022. The time span allows us to use 222 observations in our time analysis. For all calculations the statistical software EVIEWS is used. The data are graphically shown at Fig.2:

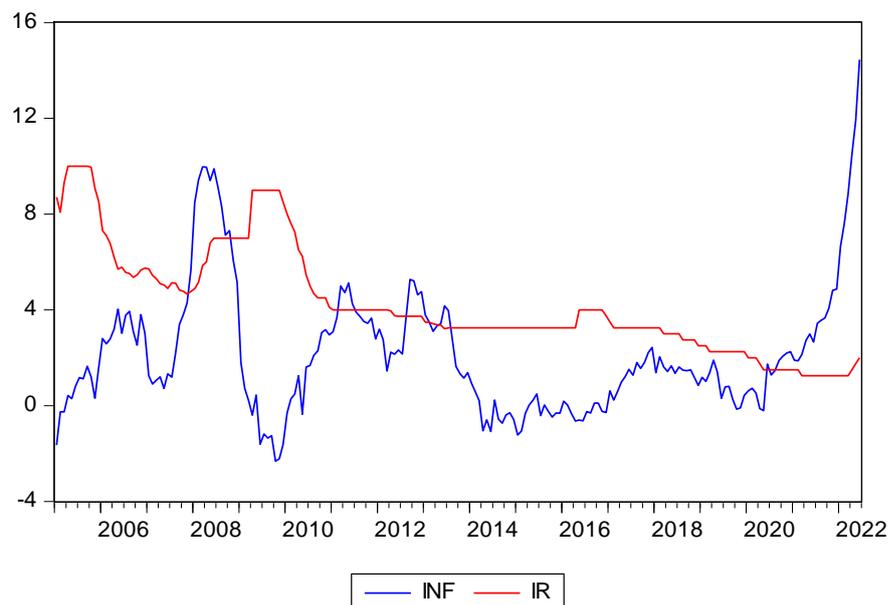


Figure 2. Inflation and Interest rate in Macedonia, 2006:01-2022:06

Source: Created by the Author

Firstly, in order to understand the stationarity (or the order of integration) of considered variables, a standard Unit root test was performed. More specifically, unit root analyses of PP (Phillips - Perron) developed by Phillips and Perron (1988) and ADF (Augmented Dickey - Fuller) developed by Dickey and

Fuller (1979, 1981) were used. Equation (2) and equation (3) functionally represent the PP unit root analysis and ADF test, respectively;

$$\Delta y_t = \beta + \delta y_t + \sum_{i=1}^p \theta_i \Delta y_{t-i} + \varepsilon_t \quad (2)$$

$$y_t = \beta_0 + \delta_1 y_{t-1} + \varepsilon_t \quad (3)$$

In these equations, the observation number was formulated with T, the distribution of the error terms with ε_t , the series where the test is applied with y_t and the trend variable with α , β and t . Hypothesis is as

H_0 : Series is not stationary (there is a unit root in the series)

H_1 : Series is stationary (there is no unit root in the series)

Secondly, as a result of the unit root analysis, after it was detected that the variables were stationary at the same level (I_1), Johansen Cointegration test was performed to test whether the series cointegrated in the long term. Following the cointegration detection, Granger Causality Analysis was applied to the series through VECM (Vector Error Correction Model) with an aim to question the causality relationship and direction of the causality in the long term.

The standard Granger causality test is based on the prediction of the two-variable VAR model given at Eq. (4):

$$\Delta y_t = \beta_0 + \sum_{i=1}^n \beta_{1i} y_{t-i} + \sum_{i=1}^n \beta_{2i} x_{t-i} + \varepsilon_t \quad (4)$$

Engle and Granger (1987) stated that the standard Granger test based on the VAR model would not be acceptable when the series were cointegrated and in this case, the causality relationships between the series needed to be examined with the vector error correction model (VECM). In this case, the VECM is established to explaining the short and long-term causality relationships. The VECM model is specified in the following Eq. (5):

$$\Delta y_t = \beta_0 + \sum_{i=1}^n \beta_{1i} y_{t-i} + \sum_{i=1}^n \beta_{2i} x_{t-i} + \beta_3 EC_{t-1} + \varepsilon_t \quad (5)$$

where, y_t represents the dependent variable, x_t represents the independent variable, EC_{t-1} is the error-correction term, and ε_t is the standard error. In the VECM model it is estimated that all variables are endogenous, the impact can be calculated through the selection of dependent and independent variables.

5. Empirical Results and Discussion

In this section, firstly, the unit root analysis results of the variables included in the analysis and then cointegration test results will be discussed. The results of the analysis where the stationariness of the series were tested are given in Table 1. According to the ADF and PP unit root results, variables are stationary at I_1 .

Table1. Unit root test (PP and ADF): inf, ir

Variable	Phillips Perron Test						
	At level		1st difference		2nd difference		Conclusion
	Adj.t-stat.	p-value	Adj.t-stat.	p-value	Adj.t-stat.	p-value	
Inf	-1.553447	0.5046	-12.62733	0.0000	-54.56348	0.0001	I (1)
Ir	-1.887997	0.3376	-11.42120	0.0000	-39.00874	0.0001	I (1)
Augmented Dickey - Fuller							
Inf	0.114622	0.9661	-6.196393	0.0000	-4.906303	0.0001	I (1)
Ir	-2.61844	0.0908	-7.025479	0.0000	-12.55855	0.0000	I (1)

*significant at 10% level of significance $p < 0.10$; ** significant at 5% level of significance $p < 0.05$; *** significant at 1% level of significance $p < 0.01$; Decision: Reject the null hypothesis of unit root at 5% level of significance

With the results thus obtained, Johansen's cointegration technique can be implemented and the VECM model can be applied. But before calculating the long-run coefficients of the basic VAR model, it is necessary to determine the optimal number of lags. We determine the optimal lag length by minimizing the Schwarz (1978) Bayesian Information Criteria (SC). The lower the SC value, the better the model. In our case, the optimal length of the delay has been calculated and is 3.

Then, with Johansen Cointegration test, Table 2, it is stated that the statistical value is smaller than the critical values; the inflation and interest rate series are cointegrated in the long term.

Table 2. Johansen Cointegration test

Variables	Trace	Max-Eigen	Lag
Inf – ir	22.49180***	19.99502***	3

*significant at 10% level of significance $p < 0.10$; ** significant at 5% level of significance $p < 0.05$; *** significant at 1% level of significance $p < 0.01$; Trace represents the Trace Test statistics and Eigenvalue is the Maximal Eigenvalue Test statistics.

Table 3. Granger Causality Test Results through VECM

Hypothesis	Prob	Direction Causality
Inf is a Granger cause of Ir	0.0085***	Inf → Ir
Ir is a Granger cause of Inf	0.0013***	Ir → Inf

**Note: significant at 1% level of significance $p < 0.01$*

Table 3 shows the Granger Causality Test results through the VECM model and the direction of the relationship determined in the short term; accordingly, there is a *bilateral causality* between the variables. It means that inflation is a Granger cause of interest rates and interest rates are a Granger cause of inflation.

6. Conclusion

Global inflation has rebounded from last year's lows faster and sooner than after any previous global recession in the past five decades. At the same time, this is the highest inflation in the recent history of the Macedonian economy. Current developments prompted the idea of examining the relationship between inflation and interest rates through the case of North Macedonia

The Granger Causality Test through the VECM model, indicates a bilateral causality between the variables in the Republic of North Macedonia. Interest rates tend to move in the same direction as inflation but with lags, because interest rates are the primary tool used by central banks to manage inflation. In general, higher interest rates are a policy response to rising inflation. And this was the response of policymakers in most countries around the world in response to current developments. But it is important that policy changes take time to affect inflation.

If the high inflation in the Macedonian economy is mainly due to the previously mentioned higher production costs and low inventories, then the Central Bank will have to continue raising interest rates to a large extent, causing commercial banks to tighten lending conditions (because up to this point most of the banks did not respond to the market signals), and thus it will significantly reduce the demand to slow down the pace of inflation. Importantly, the bigger the Central Bank raises rates, the more damaging it will be for the economy. That is the main risk of raising interest rates too quickly. Hence the uncertainty about the degree and pace of monetary policy adjustment needed to restore price stability in the medium term.

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HOW DO FIRMS AND GOVERNMENTS RESPOND TO
EXTERNAL SHOCKS? A SYSTEMATIC LITERATURE
REVIEW

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Abstract

Firms are generally quite vulnerable to external shocks because they rely heavily on exports. These shocks, which occur unexpectedly, make companies completely unprepared for them, and at the same time, they represent a significant source of business cycle fluctuations. This is why domestic adjustment is needed with an appropriate policy response from both companies and governments. This article aims to provide a systematic literature review of how firms and governments have responded to various external shocks in the latest period, 2018 to 2021. The effects of policy measures used in response to distinct terms-of-trade cycles are also evaluated here. Additionally, this review examines the appropriateness of policy instruments used in the adjustment process. Hence, some of the policy challenges that companies face today are highlighted, along with economic policy responses that would improve the country's capacity to absorb future shocks.

Keywords: firms' response, external shocks, policy response, domestic adjustment.

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1. Introduction

When external shock crises occur, the best answers are the bold ones (Lim et al., 2020). External shocks are dangerous, but the greatest danger occurs when society is unprepared to respond to the attack (Oetzel & Oh, 2021). This unpreparedness creates general uncertainty for people, firms, and countries (Oh & Oetzel, 2022). According to Courtney et al. (1997), there are four classifications of uncertainty: First classification (one explicit forecast), Second classification (alternate futures), Third classification (a range of futures), and Fourth classification (a future impossible to predict). However, according to Thungavel et al. (2022), crises are not predictable, and the most uncertainty happens when countries act alone by responding to these shocks. That is why globalization and creating international cooperation are good strategies to avoid uncertainty and better handle the shocks (Thungavel et al., 2022). Another aid to avoid uncertainty and help firms from shocks is restructuring supply chains (OECD, 2020). The restructuring of supply chains is also in the flow of firms' responses to the shock, a topic discussed in more depth below in the study. Firms that have developed more technology are more vulnerable to uncertainty and consequently have more accessible adaptation to the situation created by external shocks (Vo & Le, 2017). Uncertainty also appears in clients, making them save money, especially non-essential things (Winarsih et al., 2020). Enormous distress is when an external shock in one country can cause other subsequent disaster events (Oh & Oetzel, 2022). One of the latest shocks - the one of the Covid-19 pandemic - was followed by a sequence of events damaging the people's social life and severely damaging the country's economy (Oh & Oetzel, 2022). All of these levels of uncertainty require people who, regardless of the circumstances and level of uncertainty, are conscientious, professionally trained, experienced, and give relatively good responses in some instances of external shocks. When a firm or government officials are inexperienced, unprepared, or unqualified, this results in delayed responses or the wrong answer to these shocks (Webb et al., 2000). The Covid-19 pandemic has changed the economic circle of development and the industry frame (Sheng et al., 2020). Many studies assessed how the COVID-19 pandemic has affected the functioning of the firms and economies around the globe. One finding is particular: after these shocks create consequences, firms and economies need a structured and guided revitalization process (Amankwah-Amoah et al., 2021). This process is "far-fetching" for some firms as they suffered tremendously during a pandemic. Since the pandemic Covid-19 is among the latest crises, the firms' and governments' reactions gained research interest, with the view to define the future acts of any other crisis. The present study's central aspect is offering a literature review and providing new insights into how firms and governments responded to the external shocks. The pandemic of Covid-19 was severe to both developed and developing countries, small, medium, and large businesses, and very advanced economies such as the US and UK (Amankwah-Amoah et al., 2020). It has led to the collapse of government-backed and privately owned businesses (Amankwah-Amoah et al., 2020). However, the responses of firms and governments in developed and developing countries differed significantly due to the economy's level of development and preparedness to react (Puig et al., 2022).

That is because the developed countries support and subsidize the countries' business better, whereas, in developing countries, the survival of some small and underperforming companies has become a struggle (Amankwah-Amoah et al., 2021). It is also important to point out that external shocks can affect some industries more than others (Puig et al., 2022). Isolation measures and local bans have affected some industries more than others because different conditions can never be the same for different industries. For example, essentials and medical devices have advantages over other industries. This advantage reflects different responses from governments and firms to external shocks. Among other factors, financial support, size, ownership, and activity explain the difference between the responses of different firms (Puig et al., 2022). Identifying effective strategies for managing the crisis of external shocks is essential through exploring previous experiences from firms and the government. Aiming to summarize the firm's and government's responses that had an impact on the journey of surviving the crises, they become valuable literature for firms and governments to future experiences with cases of external shocks. Another dimension of general economic fragility during Covid-19 was the time durability, the level of uncertainty, and the realm of impact. It is associated with social and economic damages, which cause a weakening of the position of businesses and a high risk of business failure (Amankwah-Amoah et al., 2021). This review contributes to the literature by offering essential insights into firms' and governments' responses to the Covid-19 pandemic shock, which is the topic least studied by international business scholars. The study will mainly focus on the responses of firms and governments to the shock of different industries and their responses impact. The paper proceeds as follows: First, it draws upon the literature on firm's and government's responses to external shocks, specifically to the Covid-19 pandemic as the latest external shock, also, with further deliberation on the practical measures undertaken by firms and governments to fend the economy from external shocks destruction. This study will highlight the different responses to this shock in the context of intense global competition and enhanced digitalization (Brynjolfsson & McAfee, 2017). More specifically, we review the characteristics and the unique challenges of firms and governments' responses to external shocks. The results of this study have strategic, social, and economic results. They show the relationship between crisis and a firm's response by exposing the individual strategy of the firm, the impact of the response on society and the firm's future, and the response's impact on the firm's economic development. In the remainder of this article, a background of factors that have contributed to the firms and governments making the actions and responses is outlined. In the third section, firms' problems and responses are summarized. This review includes the authors' views based on accumulated evidence and arguments on the results of firms and government's responses to external shocks, focusing on responses to the Covid-19 pandemic. The effects of the Covid-19 pandemic were accompanied by a disruption of the national supply chain (Orlando et al., 2022; Khan et al., 2022). To complete our study, we have two research questions:

RQ1: Which types of responses do firms make to better cope with the crisis caused by external shocks?

RQ2: Which types of responses do governments make to better cope with the crisis caused by external shocks?

2. Range of factors of the external shocks that provoke necessary responses

External shocks are not new (Oh & Oetzel, 2022). Nowadays, mainly due to climate change, the expectation of the number and severity of external shocks has increased. Consequently, the need for a new way of thinking to respond to these external shocks has increased (Oh & Oetzel, 2022). Crises created by external shock can differ, but what they have in common is the power to damage social and economic life (Hällgren et al., 2018). This study highlights the fact that due to the different outcomes that external shocks create, consequently, the responses to different situations must be different. This heterogeneous circumstance creates a diversity of cases that causes a lack of literature for each case. This study contributes to the literature on firms and governments responses to external shocks. One of the factors caused by external shocks that provokes a response is the disruption of the supply chain. The effects of the Covid-19 pandemic were accompanied by a disruption of the national supply chain (Orlando et al., 2022; Khan et al., 2022).

3. Firms responses to external shocks

The theoretical aspect revolves around firms' responses and activities to achieve success in a crisis, overcome external shocks, and change crisis path dependence. Careful and accurate responses used in crises enable firms' faster return to a good situation (Williams et al., 2017). Also, knowledge preparedness helps firms respond better to adverse events caused by external shocks (Orlando et al., 2022). To better elaborate on this aspect, this study will discuss the strategic renewal plan of firms, the dynamic capabilities of firms, financial support, and government support. When external shocks cause economic uncertainty, the firms are reluctant to invest (Gulen & Ion, 2016). Firms respond to economic uncertainty with a delay in investment, which is the opposite of economic growth (Adelino et al., 2017). There is no doubt that firms' actions for strategic renovations and the need for support often commence after experiencing external shocks or turbulence in the business environment (Eggers & Kaplan, 2009). However, thanks to the rise of digitalization, firms' improved renewal processes are accelerated (Amankwah-Amoah et al., 2021). Besides, firms nowadays should renew themselves to remain competitive because of increasing global competition (Osei et al., 2019). A firm's responses to external shocks should be concentrated on the firm's underlying resources and expertise. Also, financial managers, firm resources, skilled employees, and external factors affect a firm's responses (Amankwah-Amoah et al., 2021). The external factors include changing consumer behavior and changes in industrial policy. Thus, the renewal plan consists of the firm's activities to ensure that the firms are ready to respond to the external forces (Knott & Posen, 2009). The search, selection, and deployment capabilities are the dynamic capabilities from which firms may outperform their rivals (Helfat et al., 2007). Still, the main one is the ability to refund resources and capabilities continuously

to address environmental threats (Teece et al., 1997). A firm's responses should fit with limited existing resources (Rumelt, 1987); they should be mobilized and integrated with the knowledge and skills of employees to respond to, soften, or decline external threats (Wright & McMahan, 1992). The responses of many firms were without prior experience, thus creating significant uncertainty in the results of the responses (Corsini et al., 2021). Considering the beginnings of the last crisis, the Covid-19 pandemic, which was and still is a major macroeconomic attack on firms in general (Hong et al., 2022), we remember that it all started in China. As China was the first to be attacked by this pandemic, it was also the first to search desperately for responses to combat it. According to Narayandas et al. (2020), China has coped well with this crisis thanks to good strategy developed before. Particular emphasis is on these responses: Transparency in times of challenges; new forms of communication; Digitalization; Collaborations; Elasticity/adaptation to remote work (Narayandas et al., 2020). Narayandas et al. (2020), during their interviews with corporations in China, encountered corporations that have chosen to respond to the pandemic by closing their centers. This response in that corporation was due to the logic that "If a company does not survive three months, there is no future." Also, this study describes cases when the organization responding to the Covid-19 pandemic has chosen different responses, which are written below in the Table 1. (Narayandas et al., 2020).

Tab. 1. Strategic responses to external shocks Source: Narayandas et al. (2020).

Firms/Organization	Function	External Shock	Respond	Conclusion
Yili Group	A leading dairy company.	Covid-19	Re-organize to enhance decision making.	This helped in the good and safe distribution of milk throughout China during the pandemic.
Ping An Bank	Chinese joint-stock commercial bank.	Covid-19	Increase the focus on digitalization.	Great performance achieved in April 2020.
New Oriental Group	Leading Education Firm.	Covid-19	Move to a live-streaming platform.	The firm increased the service even in cities that did not operate before.
Huanxi Media Group	Movie Studio	Covid-19	Live-stream the movie online.	More than 600 million views within two days.
Trip.com Group	Travel Agency	Covid-19	Developed a new "one-click" application.	It helped the firm respond, with its reputation intact.

Yum China	Food Chain	Covid-19	Asked for volunteer workers.	900 volunteers, far exceeding requirements.
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In addition to the findings of these firms' responses to external shock Covid-19, Narayandas et al. (2020) emphasized that firms that had financial reserves during the crisis did not save but invested as much as possible to create an advantage concerning competition, adaptation to the situation and progress.

3.1 Small and medium firm's responses

As for the small and medium firms, they find it hard to escape from the situation created by the pandemic. Unfortunately, many small and medium firms responded by closing their business (Hu &Kee, 2022). Another response of small and medium firms was a strategy to reduce the number of employees-downsizing (Thorgren& Williams, 2020; Hu &Kee, 2022), some of which resulted positively in their longevity even during the pandemic, others responded by creating a diversity of clientele (Marconatto et al., 2022).

Another response of small and medium enterprises is the temporary innovation of the business model (Clauss et al., 2021). According to a study by Clauss et al. (2021), these business models had positive results with five small and medium enterprises in Germany, Liechtenstein, and Austria. The complete changes in the business models that those firms have made to respond to the Covid-19 pandemic so that they can adapt, survive and emerge victorious from it were as follows: the distillery and beverage producer firm turn into disinfectants producer; creating digital value for conference sponsors; cooking firm turns to sell toilet paper, masks, and delivery service; an organic farmer turns to digital shop; a classic consulting firm turns into the retail firm (Clauss et al., 2021).

3.2 Textile firms respond to external shocks

Also significant is the response of textile firms to the situation created by the Covid-19 pandemic. Textile firm's responses are critical because they had new ways to contribute and benefit from the situation. Since they had possibility to supply and assist hospitals with necessary products for doctors and patients and with the masks and other new products adapted to the need of this crisis, textile firms might benefit from the situation with the correct responses. Conversely, textile firms were significantly affected by the Covid-19 pandemic; the lack of raw materials is the biggest challenge for textile firms (McMaster et al., 2020), including the textile giant Inditex (Dowsett, 2020). The adaptation of textile firms to the pandemic situation and the survival of textile firms is significant for the economy as a whole, as there are over 160,000 textile firms in Europe alone (Puig et al ., 2022). Textile firms are also important for the Balkan region. Puig et al. (2022), during an analysis of textile firms in Spain, found a difference between The Valencian Textile Cluster (VTC) and other textile firms. The difference is that VTCs were more effective in adapting their functioning in response to the pandemic. VTC responded to the pandemic Covid-19 situation effectively (El

Periodic, 2020). The factor such as the tradition of this company in the production of home textiles, and the responses to the shocks, such as cooperation with social media and institutional support, were the reason why VTC's response was more effective to the Covid-19 situation than other textile firms in Spain (Puig et al., 2022).

Among other factors, financial support, size, ownership, and activity explain the difference between the responses of different textile firms.

Tab. 2. Strategic responses to crisis. Source: Wezel et al., 2020

Table 2, shows the model of strategic responses to external shocks by Wezel et al. (2020). In their study of strategic responses to crises caused by external shocks, four strategic segments are analyzed: retrenchment, persevering, innovating, and exit.

Retrenchment refers to all firms' reductions (Pearce & Robbins, 1993). This effect narrows the firm's potential, and its effects are mixed as a response. Pearce and Robbins (1994) state that the retrenchment gives positive results since it stabilizes performance declines. Nevertheless, Barker and Mone (1994) see the retrenchment as an underperformance contributor. The retrenchment may be the firm's correct response only for fixed-term (Chadwick et al., 2004). In crises like the Covid-19 pandemic, in the inability to recognize its longevity, the continued retrenchment is not the correct answer because it may lead to an erosion of a firm's resources (Ndofor, Vanevenhoven, & Barker, 2013). Like retrenchment, the persevering strategic response is brutal to be productive for an extended period. It can contribute to firm survival in the medium run, but it is almost impossible to contribute if a crisis lasts longer (Wezel et al., 2020).

Persevering, in contrast to retrenchment, aims at preserving the firm's status (Wenzel, 2015). Persevering is an essential and influential strategy in crisis (Stieglitz et al., 2016; Carolic et al., 2009); bringing enormous contributions to survive a firm in times of crisis is better than changing and renewing one's business in times of crisis, which is not always the best response (Wezel et al., 2020).

Innovation is always an opportunity and inevitable response in times of crisis (Takeuchi & Nonaka, 1986). The uncertainties caused by the crises, which we have mentioned and discussed above, push businesses towards innovation and new ideas (Wezel et al., 2020). According to Brinckmann et al. (2019), innovating may be an excellent response to the crisis. In contrast to persevering and retrenchment, innovating is an essential response to long-term crises (Wezel et al., 2020).

There are firms that deliberately create crises, to drive innovation (Kim, 1998). Such strategies for creating crises and fostering innovation were also used by Steve Jobs at Apple (Isaacson, 2011). But according to Lichtenthaler (2021) and Guderian et al., (2020), there are firms that respond to external shock by choosing to reduce innovation costs. Also, in the study of Hong et al., (2022), firms in the research have responded to the Covid-19 crisis by cutting down the cost by frugal innovations; by using innovation to bring new products or services; creating value potential through human development and focusing on core values. In a similar

vein, the retail investors, in response to the crises that engulf the economy after the external shock, respond by reducing the intensity of trade (Pagano et al., 2021). These cost savings have been shown to be unproductive during the external shock of the 2008 financial crisis (Lichtenthaler, 2021). Exit refers to closing a firm's business activities as a response to a crisis (Argyres et al., 2015). The 'exit' response comes when other attempts to respond to crises fail or when beliefs that the crisis can be overcome fail (Wenzel et al., 2020). According to Dai et al. (2017), sometimes the 'exit' response to a crisis is good. The exit responses may be essential for strategic renewal (Ren et al., 2019). According to Carnahan (2017), exit responses may contribute to creating new firms.

Tab.3. Strategic responses to crisis. Source: Puthusserry et al., 2022.

Puthusserry et al. (2022), categorize responses to external shock crises into four categories: reactive, proactive, conforming, and innovative. Their findings suggest that start-up firms use reactive responses. These cases are characterized by a network of general lack of heterogeneity in the firm - staff, decision making, and organization (Puthusserry et al., 2022). Proactive responses are proactive responses of firms to market development (Lahiri et al., 2019). Proactive responses were mainly from young-growth firms that benefit from diversity but poorly formulated organizational contexts (Massis et al., 2020). With more significant development than young growing firms, medium-sized firms followed the conforming category's responses. In this category more complex and complete organizational networks are characteristic. Finally, firms categorized as mature growth firms use innovative strategic responses to the situation caused by Covid-19.

To better cope with the crisis caused by the Covid-19 pandemic, firms must respond by creating open communication and crisis management strategy, which according to Haryono&Wijaya (2022), has several steps as presented in the Table 4 below.

Table.4 Strategic responses to crisis. Source: Haryono and Wijaya, 2022.

The first step, crisis research, means a firm's research on what has happened from the crisis and what is expected to happen. So this step means gathering information on the force of the external crisis and causes. Then, the second step, which is establishing a crisis team, means organizing a team of employees who will take full responsibility for dealing with the crisis threatening the firm. This part is significant as that team will have no other work, and the responsibility of stabilizing the crisis is on them. Depending on the type of crisis and the type of business, the crisis team should come up with a concrete plan for crisis management steps, with ideas and plans to respond to the crisis created by external shock. The fourth step, or step of the new work system, means that the work system will change due to the firm's response to external shock. A nation's culture determines how firms respond to crises caused by external shock (Fernandez et al., 2021). With the new work comes the new system culture, and employees have to adapt to this new work culture.

In their study, Weber & Huynh (2021) analyzed the responses of 16,300 firms in Vietnam to crises caused by an external shock, the Covid-19 pandemic.

Tab. 5. Strategic responses to crisis. Source: Weber & Huynh, 2021.



Weber & Huynh (2021) defined several responses. Namely, some firms had changed the products to exploit changing market requirements and necessities in the new product. Other firms made e-commerce more functional to grow the electronic market resulting in overall market growth. Some of the firms responded that they had chosen new product markets as domestic demand had fallen due to the pandemic. Then, some firms responded to the crisis by seeking new input markets, as the pandemic broke supply chains. And the final response of some other firms was training labor, by some companies that in these crises also know how to face labor shortages.

Salunke&Rajan (2021) have analyzed the responses by the firms according to the main operations and processes. Their classification is given in the Table 6 below.
Tab. 6. Strategic responses to crisis. Source: Salunke&Rajan, 2021.

When faced with external shock, a firm needs to make transformations in marketing must-have skills. That is, it needs to develop a strong sense of the opportunities to respond to the market by creating a new approach to a new problematic situation for the firm. According to Gartner (2020), the firm's skills and flexibility positively impact marketing and quickly overcome crises. Transformations in technology have a bearing on the survival of firms in times of crisis. Technology plays a crucial role in the development of the economy during external shocks. Few of its components, such as electronic remittances, digital currencies, work from home, the online school-education system, and the online dating system are just some of the technological innovations developed of late. The financial processes that cost the company must be re-evaluated in times of crisis. This form creates an economic transformation adapted to the situation to have fewer adverse effects on the firm. One of the economic transformations that some retail firms have made is the extension of days to make original payments. The production process has been especially attacked by the recent crisis caused by Covid-19.

The transformations of production enter the industrial term "Industry 4.0," which includes innovative and intelligent products (Kumar, 2021). Medical device production is also considered a transformation of production (Longhitano et al.,

2021). Transformations are more visible in the operations part. The pressure from the crisis to find new ways and forms to survive pushed firms to make transformations in the operating system.

4. Government responses to external shocks

This section has explored the responses of governments to external shocks. Overall, governments have responded to the latest external shock - the pandemic Covid-19, by facilitating payments, increasing the debt repayment period, and supporting firms financially (Khoury et al., 2022). The firms' and the governments' responses were challenging, hoping for good results but without any convincing certainty. During the Covid-19 pandemic crisis, government responses must be life-saving and economically responsible. This situation puts governments under pressure (Itani et al., 2020). Economic crises caused by external shocks make firms reluctant to respond in such times. Hence, governments take care to respond by securing economic welfare because solid responses from the government to the COVID-19 crisis play an essential role for firms and the country's economy (Hoang et al., 2022).

Government-reconfirmed wider responses to the Covid-19 pandemic were: border restrictions; border restriction policy; school closures (Salunkhe&Rajan, 2021; Torsello& Winkler, 2021). These measures created difficulties for the firms of a country.

Indeed, government responses impact the future of firms during external shocks. This review examines what those responses were, how they were implemented, and finally, what impact they had on the socio-economic sphere. In the US, despite the decrease in investment during the latest external shock- the pandemic Covid-19- the government response has positively affected the US economy (Hoang et al., 2022). According to Hoang et al. (2022), the economic support packages from the government are vital for economic recovery after an external shock. Government responses do not have the same impact on all firms alike, firms that are not politically dependent tend not to affect the development of their business by government responses to external shock (Xu, 2020). According to Hoang et al. (2022), US government safeguards and economic support have had a positive impact by increasing investment by firms.

Conclusion

This article aimed to examine how firms and governments respond to external shocks. Using multiple sources, we could deduce a straightforward narrative of how the firms and government responses have manifested during and afterward the external shocks crisis, specifically during the Covid-19 pandemic. The two particular points of analysis were synthesized and integrated into one broad overview identifying the similarities and differences between the two.

The answers to the first and second research questions in this study, RQ1, and RQ2, are solved from the sources we have gathered. RQ1: Firms have different responses to better cope with the crisis caused by external shocks. Financial managers, firm resources, skilled employees, and external factors affect a firm's

responses. Some of the responses are: Reorganizing decision making, digitalization, new technology, developing new applications, reducing employees, changing product line, closing the firm, innovating, new work system, new work culture, and transforming these systems: financial, marketing, production.

As for the second research question, the government responds to better cope with the crises caused by an external shock; we have: by facilitating payments, increasing the debt repayment period, and supporting firms financially, border restrictions, border restriction policy. Drawing critical insights from the two subjects completed the review. This comprehensive literature review offers valuable insight for organizational renewal in light of future external shocks.

In this article, the light is shed on which firms and governments respond to external shocks, what the circumstances affected the responses and the difference in responses in different countries. It can be deduced that firms respond to external shocks with differing results. Similarly did the governments, with different measures and different outcomes. Developed countries had more significant support for economic support packages from the government. While for developing countries, the measures and bans were rather penalizing for firms. Responses found by firms and governments in this study help future strategic decisions regarding organizational design during and after external shocks and crises.

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THE ROLE AND SIGNIFICANCE OF THE CAPITAL
MARKET FOR FINANCING BUSINESSES

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Abstract

Financing is a process of managing financial assets, that is, providing, using, reproducing, analyzing and controlling the use of monetary assets, necessary to maintain the continuity of the reproduction process. In fact, financing in any business entity is a very complex process that involves planning, securing and using the necessary funds for current and development operations. Financing includes several activities, namely: collecting money, which is its basic component, but not the most important one, because it is only the initial phase of the complex process. Digital change is shaping the economy worldwide and markets are developing more dynamically than ever before. Included represents the digital revolution "Industry 4.0". SMEs face new challenges with various business models and products. Speed and the availability of financial resources become a success factor. Midsize companies operating in an age of disruptive change. If they want to survive, they often have to make high financial advance payments in order to make the necessary strategic investments, technical innovations and finance shorter product life cycles. It takes ambition and good planning to change and development an appropriate financing strategy. Raising capital through an IPO makes it possible to finance your company on a large scale, which can be repeated through a capital increase. This is especially helpful for medium-sized companies. The IPO also presents itself as an opportunity for medium-sized family businesses. Because in a listed stock corporation, corporate and shareholder spheres are clearly separated in the ecosystem for growth. The Macedonian Stock Exchange also offers interesting opportunities to enter into dialogue with start-ups that are looking for interesting partners.

Key words: internal financing, external financing, Macedonian Stock Exchange, Self-funding

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Introduction

In the conditions of a global economic crisis, the problems related to the provision of adequate sources of financing for businesses are becoming more pronounced. It is necessary for business entities to optimize funding sources, which will enable the maximization of final financial effects, on the one hand, and the minimization of initial investments, on the other hand. The interest of business entities in the optimization of funding sources stems from their influence on liquidity and profitability. Self-financing is the cheapest form of financing the reproduction process, because the business entity is not burdened with interest, nor with the obligation to return the principal, which is not the case with other sources of financing. This type of financing enables (Vitanova.G,2003, pp 25-28) a high degree of financial independence when making financial decisions, as well as flexibility in conducting financial policy and profit distribution. However, business entities cannot finance their growth and development exclusively from their own sources. Namely, they often rely on borrowed sources, that is, on loans from banks and other financial institutions, the issue of securities, specific forms of financing such as: factor financing, forfeiting financing, leasing and franchise financing. When making a decision to choose an appropriate source of financing, the business entity should take into account certain factors, the most significant of which are the following: the current conditions of the capital market, the degree of indebtedness of the business entity, the price of the shares, the tax policy, the degree of development of business entities, etc.

Business entities in the Republic of North Macedonia (Jovanoski.T,1997. pp. 29-32) are forced to ensure the continuity of the reproduction process by using bank loans, which are very unfavorable, both in terms of the amount of the interest rate, and in terms of the terms for their return. As a result of this situation, however, the final financial results of the operations of the business entities are very unfavorable, because the interest participates with a high percentage in the total costs of the operation, means: taking into account the previous indications regarding the role and significance of the capital market for the financing of business entities, the stock market and its role in financing businesses, the advantages and disadvantages of financing business entities through the issue of long-term securities, the current situation related to the financing of business entities in the Republic of North Macedonia, the role and significance of the Macedonian Stock Exchange of long-term securities, proposals and measures for optimizing the capital structure of business entities in the Republic of North Macedonia etc.

1. Theoretical Framework

Financing is a process of managing financial assets, that is, providing, using, reproducing, analyzing and controlling the use of monetary assets, necessary to maintain the continuity of the reproduction process. In fact, financing in any business entity is a very complex process that involves planning, securing and using the necessary funds for current and development operations. (Trajkoski.B,1997, p.99). Financing, as a complex process of planning, providing

and using financial resources, is necessary for the establishment and further operation of business entities (Jovanoski,1997. pp. 159-170).The financing function consists of making three basic decisions: investment decision, financing decision and dividend policy. The basis of the financing process is the determination of the relationship between funds and sources of funds. Financing, as a complex process of planning, providing and using financial resources, is necessary for the establishment and further operation of business entities. (Akram, T. and Li, H. 2020). pp.24-27). Financing includes several activities, namely: collecting money, which is its basic component, but not the most important one, because it is only the initial phase of the complex process. The other stage is the investment, which includes the binding of already acquired assets in the form of non-current or current assets. The return of the invested money is the third stage in the financial process, where the invested funds are released from the funds flow and reinvested in accordance with the needs and plans of the business entity. Self-financing refers to those processes and procedures when the business entity provides funds for financing from its own sources without the obligation to return them. Self-financing is one of the basic and most used ways of financing. In fact, it is one of the oldest ways of financing investment ventures. (Trajkoski.B.1997, p.42). Self-financing is such a form of financing, where the investor himself provides financial means for the realization of his investment projects. Sources for providing financial resources for self-financing are the net profit and depreciation of the business entity. Self-financing is a very convenient and stable way to finance the investment, because it is provided by the positive result of the business entity's operation. The use of self-financing as a way of self-financing the investments of the business entity ensures relative independence in decision-making in its own development and in the realization of the defined development strategy. (Vitanova,2003, pp.45-56). Self-financing occurs in two variants: self-financing from internal sources and self-financing from external sources. Another form of financing is the loan. The loan represents the transfer of a certain amount of funds to the beneficiary by the banking institution with the obligation for the client to return the approved funds within the agreed term, with the payment of interest in the manner and terms stipulated by the loan agreement. Banks approve short-term loans (Vitanova,2003, pp.77-89), mostly to meet the needs of users with working capital. There are several types of short-term loans, namely: loans for seasonal supplies, credit lines, bridging loans, loans with pledge of working capital, etc. Long-term loans, as a rule, are approved for financing the needs of extended reproduction (business development). (Auer, R., Cornelli, G. and Frost, J. 2020.p.57). These loans are approved for a period of several years, with the maturity period having to be in line with the lifetime of the asset being financed. Long-term loans belong to the group of secured loans, and upon their approval, customers are required to participate in the total value of the asset being financed, i.e. the amount of the loan is lower than the value of the collateral (Vitanova,2003, pp.92-95).

1.1 Self-financing from internal sources

Self-financing refers to those processes and procedures when the business entity provides funds for financing from its own sources without the obligation to return them. Self-financing is one of the basic and most used ways of financing. In fact, it is one of the oldest ways of financing investment ventures. Self-financing is such a form of financing, where the investor himself provides financial means for the realization of his investment projects. Sources for providing financial resources for self-financing are the net profit and depreciation of the business entity. Internal sources of self-financing are those that the business entity, as an independent legal entity, creates in its operations either by amortization of the basic assets, by long-term reserves, by creating accumulation, etc. (Trajkoski, B., 1997, p.65). The sources that the business entity creates, includes the following types: depreciation, collection of principal from long-term placements, long-term provisions made at the expense of the total income, accumulated net profit effects of the revaluation compensated by the total income. (Patel, K., 2018, pp. 31–33).

1.2 Self-financing from external sources

External sources of self-financing are defined as all those legal and physical entities that provide funds for financing the business entity and their domicile or headquarters is outside the business entity. (Tymoigne, 2014, p.67). External types of self-financing occur in several types: self-financing by issuing shares, permanent deposits from third parties, invested capital from owners of foreign enterprises, sale of long-term bonds above the nominal value. If a higher price (Sissoko, 2020, pp 73-79) of the shares is realized than their nominal value, that price is known as issue profit and is a liability position from the balance sheet that represents an external source of financing of the business entity. If the dividend is converted into dividend shares, in that case the share capital will increase in the business entity, and thus the external source of self-financing. (Johnson W. Richard, 2012 pp.78-103). Third party permanent deposits as a source of self-financing, it finds greater application in business entities that are not joint-stock, that is, which are partnerships, where two entities establish a business relationship and invest their funds either as founding capital or as capital that will encourage development. Permanent deposits as a source of self-financing exist as long as the business entity exists. Investments in permanent stakes can be in money or in material values (Lorenz J. Gitman, 1976, pp.122-126). Investment of capital by owners of foreign enterprises: the increase in capital (own permanent sources of the result) imposes the logical conclusion that in case of bad performance and loss of funds, the negative result should reduce the own capital by the amount of the loss. (Purić Stevo, 2004 pp.107-132).

2. The importance of the stock market in financing businesses

The stock market is an organized institution that trades securities, various material goods, services or foreign currency in an organized manner. (Van Horne James, 1997 pp,56-87). The stock exchange can also be defined as an organized

institution that represents a permanent place for concluding contracts for the sale and purchase of typed goods, services, effects, money, currencies, foreign exchange and securities, under a regime and special rules and regulations, and with the participation of authorized intermediaries, such as agents, sensors, brokers, etc.(Van Horne James,1997.pp,56-87).The stock markets are extremely important for the development of every national economy (Eakins S .1998, p.145). Their meaning can be seen from the following: the stock market mobilizes domestic savings and supplies economic entities with fresh capital, in market-developed economies, stock exchanges are financial institutions that contribute to the inclusion of the national economy in international capital flows and acquire the character of international stock exchanges (Trajkoski, 2002,pp.102-104).The stock market has a direct impact on the efficient operation of business entities, the improvement of the living standard of the population, as well as on the economic growth of the country. (Johnson W. Richard ,1972,p.184). The long-term securities market can be organized as a primary and secondary market. On the primary market, business entities, through the issue of shares and bonds, mobilize free cash from investors and, in this way, obtain the capital necessary for financing current and development operations.(Vitanova.G,2003,pp.56-72).The owners of ordinary shares have the right to dividends, that is, they have the right to participate in the distribution of the net profit intended for dividends. Financing through the issuance of ordinary shares provides a series of benefits to business entities. (Van Horne James,1997, p.23). (VunjakNenad,2003, p.192). The type of bond that will be issued by a particular business entity mostly depends on its capital structure, the conditions prevailing in the capital market and the decision of the management. (Trajkoski.B,1997, p.23).

2.1. The possibility of financing businesses in RNM

The Macedonian economy did not remain immune and isolated from the influence of the world economic crisis. The global recession caused a decrease in the export of products, a reduced foreign investments, a drop in the Macedonian stock market index, as well as an increase in unemployment. However, despite this unfavorable economic environment, the Republic of North Macedonia is trying to implement them economically– political reforms (reforms in the judicial system, dealing with corruption, public administration reforms, measures to create jobs and improve the general business climate, protection of intellectual property rights, maintaining macroeconomic stability, increasing investor protection, etc.) and thus fulfilling the conditions necessary for membership in Western European institutions: the European Union, NATO etc.The financing of business entities in the Republic of North Macedonia is most directly determined by the degree of economic development of the country. According to the data of the State Statistics Office, the number of active business entities in the Republic of Macedonia in 2014 was 70,659. The capacity utilization rate of business entities in Republic of North Macedonia is at a low level and ranges between 52% and 62%. Business entities also face a relatively modest level of liquidity and operate with a low turnover of assets, which implies relatively long periods of tying up assets in the

operational process of the business. The financial system, on the other hand, in the Republic of Macedonia is characterized by a poor financial infrastructure, weak connection between individual segments and the absence of complex financial instruments and services. (Vitanova.G,2003).Namely, banking institutions have a dominant share in the financial sector, that is, at the end of 2013, they occupy 87.6% of the total assets of the financial sector. This means that the stability of the banking sector is the most important factor for maintaining the stability of the other institutional segments and the entire financial system in the Republic of North Macedonia. One of the sources for financing businesses in Macedonia is the Macedonian Stock Exchange. The Macedonian Stock Exchange is a joint-stock company with a basic capital of 500,000 euros (Stock law Nr.95/2005). Only the authorized participants of the securities market who are registered in the trade register can be members of the stock exchange. (Jovanovski.T.2005,pp.67-102). Despite the long existence of the Macedonian Stock Exchange, it still does not have a significant place in the economy of the Republic of North Macedonia, and for that there are a number of factors both on the supply side and on the demand side. (Vitanova.G,2003, pp.84-96).

3. Empirical results

At the end of 2013, non-deposit financial institutions participated with only 11.7% in the total assets of the financial sector, that is, pension funds participated with 6.4%, insurance companies with 3.3%, leasing companies with 1.4%, investment funds with 0.2%, financial companies with 0.2% and brokerage houses with 0.1% , and thus their participation in the financing of business entities is insignificant. According to NBRM data, the total indebtedness of business entities in 2013 was about 2/3 of GDP. Namely, the total debt of business entities in 2013 increased by 5.5% on an annual basis, which represents the lowest annual growth rate in the past five years. The reasons for this slowdown in debt growth are: the existing level of indebtedness of business entities, the modest turnover of assets, as well as the caution of banks when approving loans to business entities. However, despite this slowdown, the relative importance of the debt of business entities for the economy as a whole was at the historically highest level, i.e. its participation in GDP at the end of 2013 was 66.1% and on an annual basis it increased by 1.3% (Central Bank 2015,pp.12-15). During 2013, the foreign currency indebtedness of the business entities was the most pronounced, and it amounted to 70.7% in relation to the denar indebtedness, which in turn amounted to 19.4%. From the aspect of the contractual maturity of the debt of the corporate sector, the bearer of the growth in 2013 year was long-term debt (59.1%). Compared to 2011/12, long-term indebtedness was at the highest level, as a consequence of the new long-term debt agreements, but also the transformation of short-term into long-term instruments. The progressive non-functional indebtedness is a clear indicator of the reduced creditworthiness of the domestic corporate sector and the reduced capacity of existing credit users for new credit activity. According to the type of interest rate, the largest growth in 2013 was recorded by debt with a fixed interest rate, which was the reason for half of the total debt growth. This result is due to the growth of loans from external

financiers. (Ministry of Finance,2015). In contrast to this, in the case of debt with variable interest rates, the amount of financing costs is determined depending on the movements of the basic interest rates on the domestic or international financial markets. The biggest drop, that is, the lowest demand according to the type of interest rate, was observed in debt with a variable interest rate. Given the more difficult operating conditions and the limited volume of liquid assets available to domestic business entities, it is difficult to realize a more noticeable growth of their savings in the banking system or of claims from abroad. The credit support of the banking system of the Republic of North Macedonia to business entities in 2013 was higher than most countries in the region. However, banks still consider business entities in our country as risky for financing. (Clews, R. and Salmon, C. 2010, p.35). The double-digit annual growth rates of non-performing loans to business entities speak of the reduced creditworthiness of business entities in 2013, so the credit offer from domestic banks to business entities in 2013 was also modest, but still somewhat more favorable compared to 2012. (Ministry of Finance, Report 2020). Joint-stock companies in the Republic of Macedonia mostly issue securities through private offers. Thus, during 2013, the Securities Commission of the Republic of Macedonia issued eight approvals for the issue of shares, seven of which were realized as private offers, and only one offer was realized as a public offer. In 2013, the total value of realized issues of long-term securities was 38.8% lower compared to the previous year. So, in 2013, the corporate sector limited itself to receiving financial support from banks and remained restrained in providing capital and long-term financial support through new issues of securities. The capital market in the Republic of North Macedonia is characterized by a small number of low-liquid capital financial instruments that are issued and traded on the Macedonian Stock Exchange. The credit support of the banking system of the Republic of North Macedonia to business entities in 2013 was higher than most countries in the region. However, banks still consider business entities in our country as risky for financing. This shows that the financial market in the Republic of North Macedonia is very homogeneous. Most business entities are financed from their own resources with their own capital. Banks are another source of financing. The Macedonian stock market is not seen primarily as a source of financing. This shows the level of participation of business entities in the various forms of financing offered by the financial market.

Conclusions

Financing is a complex process of planning, providing and using the necessary financial resources necessary to maintain the continuity of the reproduction process. In market economic conditions, the need to achieve an optimal capital structure, which will enable the maximization of the final financial effects, on the one hand, and the minimization of the initial investments, on the other hand, is more present among business entities. Achieving an optimal capital structure is not a simple problem faced by businesses, as they operate under conditions of risk. The degree of risk determines the quality of the expected returns, so business entities try to minimize it. The interest of business entities in the capital structure (the relationship between own and other sources of financing)

stems from its influence on liquidity, economy, as well as on profitability in operations. The capital market represents a significant segment in every national economy, which enables business entities to secure the funds necessary to finance their investment projects, and offers investors the opportunity to actively use free funds and receive an appropriate return. In this way, the optimal allocation and use of financial resources is carried out, thereby accelerating the economic development of the national economy. The capital market has a direct impact on the efficient operation of business entities, the improvement of the living standard of the population, as well as on the economic growth of the country. The degree of development of the capital market is an indicator of the involvement of the national economy in modern world economic flows. A large number of business entities in the Macedonian economy, in the current complex economic and social conditions, are facing problems in providing adequate sources of financing for their operations. The dominant participation of the short-term in the total sources of financing is a reality in the Macedonian economy. In the Republic of North Macedonia, the most frequently used sources for financing operations are bank loans, which is the result, first of all, of the insufficient development of the money market and the capital market and, in general, the low level of economic development. The capital market offers the following opportunities for meeting capital needs, i.e. providing additional funds for financing the current and development operations of business entities, namely:

- engagement of borrowed capital, i.e. financing through long-term loans or issuance of long-term bonds;
- increase of own capital through issue of shares.

When making a decision to choose an appropriate source of financing, the business entity should take into account certain factors, the most significant of which are the following: the current conditions of the capital market, the degree of indebtedness of the business entity, the price of the shares, the tax policy, the degree of development of business entities, etc. (Eric Dejan.2005) So, it can be concluded that business entities in the Republic of Macedonia, for the most part, provide the lack of capital through expensive bank loans, and this negatively affects their capital structure and their long-term financial balance. The situation in this domain would radically improve with the reduction of interest rates on long-term loans, for which there are positive tendencies in the future. This research paper showed how the companies used the stock market as a source of their financing. In that context, the opportunities for debt reprogramming and the possible conversion of short-term to long-term loans, increase of autonomous sources of financing, use of sources of financing that are specific to market management (issuance of long-term securities), should be used, because only in that way they will be able to optimize the capital structure. (Tihomir.J.1994).

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SOCIAL MEDIA AND LOCAL SELF-GOVERNMENT: AN
EFFECTIVE WAY OF INFORMING AND
COMMUNICATING WITH CITIZENS IN THE PROCESS
OF DELIVERING MUNICIPAL SERVICES

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Abstract

Social media is an important part in the communication process of the local self-government units , primarily, in the area of services to citizens in the local community. municipal government is obliged to find the best way to inform the public. Precisely with the growing power of digital media, especially social networks in society make room for direct communication between citizens and local self-government. The functionality of social media in the units of local self-government depends on the final product received by the citizens in the initial contact with the local self-government. In the area of public services, citizens eventually create and have the overall picture of the local self-government. Local self-government units should use the opportunity to respond to the citizens' needs in a way that contributes to the benefits of the local community. The offer of programs and services increases the interest of the citizens. By improving the services and bids on the part of the performances through reporting and communication, the local self-government units acquire support. Easy access to services of local self-government units increases the interest and utilization. By timely, daily, and precise information to its citizens about their work, each local self-government can expect their trust, support and active participation of its residents in the policymaking and decision-making process.

Keywords: social media, communication, local self-government units, municipal services, citizens

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Introduction

We live in an era of continuous investment in new technologies, development of innovative social networks that enable interaction and socialization and provide opportunities for expressing opinion electronically in created group forums, blogs, pans, virtual communication tutorials, etc. Citizens often browse the websites of various institutions and social networks whenever they are in need of particular services, and they frequently take the opportunity to comment on their satisfaction or non-parenting of the products' utility, to rate them as well as to maintain interaction within institutions via the so-called electronic communication tools of their websites. In this context, the standard and well-known mouth-to-mouth communication scenario between citizens has changed due to the development of the internet and social networks in a so-called electronic mouth communication or communication through online messages. It is a "positive or negative statement made by a citizen of a particular service that is visible to many online users through various Internet applications. Local policy making and adoption are of particular interest to the citizens since they affect their well-being and everyday life. Interaction between the municipality and the public mostly occurs on several levels:

1. Informing the public (printed and electronic media, etc.);
2. Consulting of citizens (focus groups, surveys, public meetings, etc.);
3. Involvement of citizens in public policy processes, to ensure that they will be understood and that the opinions of the various stakeholders will be taken into account;
4. Cooperation with citizens - concluding partnerships with various interest groups at every stage of public policy development, from identifying the problem to evaluation, (e.g. counseling, various committees and participatory decision-making);
5. Strengthening the role of various interest groups by the public policy implementation authorities, so that the decision and responsibility to achieve the determined goals are transferred to these groups, whereas the adoption of the ultimate decisions is reached by public participation.

Municipal authorities are obliged to inform the citizens about their work without compensation. Therefore, municipal bodies the Council committees and the public services established by the municipality are obliged, without compensation, to inform the citizens about their work, the plans and programs that are important for the municipality's development.

The right to inform the public and its significance are guaranteed by the Law on Local Self-Government, which stipulates that the work of the Council, i.e., the Council's sessions are public. Exclusion of the public from a council session can occur under exceptional circumstances if two-thirds majority of the total number of Council members have reached such a decision on the grounds of justified reasons provided for in the Statute.

The public cannot be excluded from the Council's sessions when issues of extreme importance are on the agenda (e.g., municipal budget, annual accounts or urban plans). Aside from continually informing the public about the activities of the municipal authorities, it allows the citizens direct involvement in the decision-

making process - the essence of local democracy. This contributes to increased transparency and motivates local officials to be diligent and accountable in the decision-making process. It is a constant process that covers the period between two local election cycles and in which two-way sharing of information on local policies and local government is carried out.

1. Rise of social media

Early networks on social media like AOL Chat Rooms, LiveJournal, and MySpace appeared in the late 90s. Current, popular social websites include Facebook, Twitter, LinkedIn, Instagram, Snapchat, YouTube, Google+, WeChat, Pinterest, Snapchat, Tumblr, Viber, WhatsApp, Wikipedia, Reddit, VKontakte in Russia, Weibo in China, and others. The greatest impetus for social media occurred with the introduction of smartphones that allow billions of users to flawlessly connect daily. From the early evolution of social media, users of the Internet continuously increase the time spent on the social media web pages. The benefits of participating in social media have expanded out of simple social sharing. Users are now focusing on building reputation, expanding career opportunities, business, and earning income. By mid-2022, the global population was about 7.91 billion people, and 4.59 billion people had internet access. Currently, over 3 billion people use at least one social network_(Statista, 2022)._Nowadays social media consists of thousands of social platforms. While some social media platforms are more popular than others, each platform offers something different. For example, Instagram hits people through photography, and those who use Instagram are usually under the age of thirty. People over thirty are likely to use Facebook to share their personal experiences and connect with people from their social circle and beyond. Twitter is perfect for those who wish to communicate with short messages of 280 characters or less. Facebook has over 2 billion users. Other social media target users from certain countries or areas with a language similarity to a much smaller number of users, yet they impact the local environment and the population they serve. For instance, the Russian network VKontakte (VK) counts 477 million users from the Russian -speaking world, while the most popular Chinese social network, Weibo, has over 500 million users (Smart Insights, 2022). There are hundreds of other social networks connecting users interested in specific topics and areas of interest; Although less popular in the use of members and social influence, they are still useful and important.

1.1, Types of Social Media Network

Even though social media has changed individual and organizational communication, it differs in many aspects from communication and printed media (e.g., magazines and newspapers) or traditional electronic media (such as television). Such differences include quality, reach, frequency, usability, immediacy, and effect. Social media has many sources of content and many recipients of that content, whereas traditional media such as radio or newspapers have only one source and many recipients. The biggest difference between traditional and social media is that social media enables everyone to create and

share their content, whether it's a blog, image, video, or status update. Due to the Internet's impact and reach, social media profiles, blogs or YouTube channels can be easier than the case with traditional media in some countries.

Search Engines Journal defines social media as: "Digital platforms that allow user interaction and sharing user-generated content through an online app for networking purposes" (Search Engines Journal, 2022).

Encyclopaedia Britannica defines social media as: "media, communications on the Internet (such as on websites for social networking and microblogging) through which users share information, ideas, personal messages, and other content such as videos."(Encyclopaedia Britannica, 2022). It notes that "users usually access social media services through web-based technologies on work computers, laptops, tablets or smartphones. When dealing with these services, users can create highly interactive platforms through which individuals, communities, and organizations can share, collectively create, discuss and change content generated by users or previously prepared and published online. The following social media pages are particularly popular in central and eastern Europe:

Facebook: is a popular, free social network that allows registered users to create profiles, upload photos, and videos, send messages and maintain contact with friends, family, and colleagues. Facebook is constantly developing and is currently available in more than 37 different languages. It offers public content as what are:

- Marketplace - allows members to publish, read and answer classified ads.
- Groups - allows members who have a common interest in finding each other and communicating.
- Events - allows members to publish an event, invite guests, and follow who plans to attend
- Pages - allows members to create and promote public

A page that refers to certain topics.

Each user can edit the privacy and visibility settings (or invisibility) on their Facebook page and post. All interactions are published in a source of news that is distributed to members in real-time. Facebook has introduced a variety of options that users can use to respond to posts. Based on the user's privacy settings, others can see what you like wanted or otherwise respond. This issue is very important when considering possible conflicts of interest.

Instagram: Instagram is a social network (owned by Facebook) for posting photos and videos. Instagram has the opportunity to apply a large number of photo filters for your photos to look more professional. Users can "like" and comment on the posts of other users and can synchronize the posted photo on Instagram, and immediately place it on Twitter Feed's profile and/or on the Facebook user profile. Based on the number of users (above one billion), Instagram is positioned as one of the most popular social networks.

LinkedIn: LinkedIn is a social network designed for professionals to present their business profiles. Allows you to set up a profile that will present your education, professional qualifications, and membership in professional groups and associations. LinkedIn profiles are professional biographies that give an overview of customer business collaborators, current customer engagements, and contact

information. LinkedIn users can build a network of professional contacts with other people in their work environment. Users can become members of various professional/thematic groups on LinkedIn, which serve as a platform to exchange views on various professional topics.

Twitter: Twitter is a social media for posting messages with up to 280 letters and numbers. It also allows you to post photos and links to other pages and receive messages from followers. The popular Twitter option is "retweeting" or re-posting another user's "tweets". Hashtags can be used to track how many people tweeted or published a particular topic, and Twitter lists the most popular themes of the day as "Trending Topics". In some countries, Twitter applies to a network through which information is collected faster. Twitter is also recently used as a tool for organizing numerous high-level social and political events worldwide.

2. Decentralization in the Republic of North Macedonia

The decentralization process began shortly after the state's independence in 1991, when the government adopted a strategy of centralization to strengthen its control over the entire territory. This strategy changed after the 2001 conflict with the Ohrid Framework Agreement and The Law on Local Self-Government in 2002. Nevertheless, to ensure a better distribution of local government among the various communities living in the villages across the country, the Ohrid Framework Agreement demanded reforms of decentralization of power. Such reforms supported by the European Union and the key international factors in Macedonia led to major legislative changes in 2004, particularly with the adoption of the Law on Territorial Organization of the Local Self-Government of the Republic of Macedonia. Thus, the process of decentralization began with the division of 84 municipalities (including the City of Skopje which consists of 10 municipalities). With this law, the municipalities have gained greater responsibilities in decision-making and budget management. Municipalities have received jurisdiction and increased authority in the local economic development, environmental protection, education, social protection and child protection, culture, urbanism, and sports. However, the overall process also implied a need for better communication with the citizens, primarily in the field of approaching the needs for a better life for the citizens in the local community.

2.1. Communication between local self-governments and citizens

Online communication as part of the communication process is an essential element in the management of a transparent and responsible local government. With their implementation in the work, it acquires a positive reputation and builds the image of any local organization. Continual two-way communication between citizens and the media is a duty and challenge for an organization whose task is to inform its citizens about their work in a timely, truthful and open manner, and thus gain their confidence and support. Local self-government units have understood the importance of public relations in their work as their practice contributes to creating an image and a positive reputation in their work environment. Communicating through social media is a challenge to the

work of local communities, above all, the citizens' need to be well informed about the activities undertaken to improve life and living conditions in the local community, ranging from the opportunities for economic development, construction of local road infrastructure, investment in education, child protection, culture, sports, etc. Successful implementation will take its step forward towards professional planning, creating and realizing two-way communication with citizens. By providing timely and daily information about its work, any local government can expect confidence, support and active participation in the policymaking and decision-making process. The use and performance of communication in local self-government units depends on the final product that citizens receive in the initial contact with the local government and the public services, affects the overall image citizens develop about the local self-government. Local self-government units should seize the opportunity to respond to the people's needs in a way that contributes to the local community. The programs and services offered increase the interest of its citizens. By improving the services and offers in the area of the achievements of the municipality and by reporting them, the local self-government units gain public support from the citizens. Providing easy access to services increases the citizens' interest in local self-government units and their utilization. According to Article 36, paragraph 1, item 15 of the Law on Local Self-Government (Official Gazette of the Republic of Macedonia No. 5/02), the manner of communication of the local self-government units is precisely explained. The Municipal Council, at a session, adopts a rulebook that regulates the establishment of public standards in the work of the municipality. It is a foundation for transparent, quality, and organized implementation of the municipality's competencies, obtaining a response from its citizens and raising it at the level of responsibility and accountability of the local self-government to the citizens. This Rulebook regulates the information flow within the municipality (internal information), the information flow from the municipality to the public (external information), as well as the rights and obligations of the municipal authorities and the municipal administration in their public work. According to the research on the PR activities of municipalities in the Republic of Macedonia conducted by the Community of Local Self-Government Units of the Republic of Macedonia (ZELS):

- The Internet is one of the media most commonly used for communication purposes (94.7 %) not only because it is the easiest (88.9 % they ranked as very easy or easy to use), but because some of its aspects are expected of the wide population (website) and because it connects the municipality to its crucial internal or external stakeholders (a website that allows citizens to access the basic services or allow tourists to locate interesting sights or places they would like to visit).

- Also, the Internet is easy to use and immediately available to PR in the workplace, to respond to or contact citizens by email or other social devices. On the other hand, while social media (Facebook) are ranked as the second easiest type of medium to use (very easily or easily 81.9%), their coverage is limited to certain population segments (16 to 30 years). This may explain why only 64.9% of municipalities are use it for PR purposes. Moreover, the use of television, newspapers, and radio together (of 86%, 77.2% and 68% of municipalities)

guarantees municipalities appropriate cover the largest number of population segments.

- Finally, an equal degree of pragmatism and realism is obvious about publication: municipalities prefer brochures (71.9%) in second place (57.9%) and newspapers in third place (50.9%). Since brochures are relatively easy to design and produce with many suppliers or bend in a competitive tender, they can be published in tours of different quantities, they can be reproduced, are easy to transport or carry, and can be distributed to various locations as contact points with citizens (e.g., at public buildings' entrance, etc.). Reports, on the other hand, may need to be published mostly because of accountability, yet are difficult to write, while newspapers require high level of effort and coordination of input/ investing by different authors. (ZELS conducted a survey between its members in May-June 2012 where 58 municipalities out of 84 plus the City of Skopje or 68.2% of the target population answered the questionnaire.)

2.2, Applying the principles of transparency and accountability in the work of municipality

The basics of transparency and accountability in the work of Municipal councils are provided by the Law on Local Self-Government, The Law on Free Access to Public Information, and The Law on the Use of Public Sector Data. Under the Law on Local Self-Government, Council sessions are public. To exclude public presence at a session is decided only if there are justified reasons set forth with the statute of the municipality. To declare the session closed is decided by a two-thirds majority vote of the total Council members/ members. According to the Law on Free Access to Information by Public Character holders of public information are the authorities of Municipalities, the City of Skopje, and the municipalities in the City of Skopje. Public information refers to information in any form at the disposal of public institutions i.e. information arrives at the respective institution in accordance with its competencies. Accordingly, the information applicant may be any legal entity or a person without discrimination on any basis, in the manner and under the conditions determined by law. The Law on the Use of Public Sector Data establishes the obligation of the public sector authorities and institutions to publicly publish the data they create in the realization of their competencies in accordance with the laws. The goal is to use public sector data to encourage, among other things, social inclusion, increased accountability and transparency of the public sector. The principles of democratic management require citizens to be constantly informed and consulted in implementing programs that are of the utmost importance for improving the living conditions in their local community. Concerning the degree of realization of the programs promised, citizens must be timely informed in order to increase the level of trust in the work of local government, which, in turn, is an investment to gain support in the following period. Transparency implies a free flow of information in local self-government units. Public office holders are obliged to share and seek feedback on all activities that contribute to changes in community well-being. Transparency is required in timely publishing information on planned activities, decisions taken and steps realized. The municipal government itself is obliged to

find the best way to inform the public. Citizens can be informed through public bulletin boards, public meetings, newspapers, radio, television, internet, etc. Depending on the population structure in distinct parts of the municipality, one should find the most convenient way to get the information through to the citizens. In some cases, the municipality will use electronic media as means of communication, but in other cases - due to the limited access to the internet parts of the municipality - this option may prove to be completely inadequate. In such a case, alternative channels such as printed media are be used, bulletin boards, direct meetings in urban communities, etc. Citizens have the right to know how the authorities implement the promises given during their election campaign, what decisions have been taken, which decisions are not implemented and for what reason, and how much the annual projects are executed. Municipal authorities should consult citizens when setting priorities regarding the use of public resources to meet the public needs of majority of the population. This obligation equally affects the Mayor and the Council members.

Conclusion

Social media is a key tool in modern communication for presenting activities and creating their image. What is particularly important is the fact that institutions know that in the present living conditions rules of communications are very important for creating public opinion. The Internet as an irreplaceable communication tool is a very important channel to reach the public. Through social networks, citizens can get in touch much faster and exchange opinions. Exchange of opinions, on the other hand, is done not only through the media but also through social networks that are a real potential for debate and contribute to greater democracy in society and community. Social media took over the role of a forum in public hearings and interaction between the audience. Public opinion has the power to influence certain issues, and can initiate action in a variety of ways. That is why social media has taken over the role of a forum for communication between people that certainly contributes to concrete action. Practice in recent years show that local governments can greatly affects public opinion through social media. Programs and services offered by the local self-government increase the citizens' interest of. By improving the services and offers in the area of the achievements of the municipality and by reporting them, the local self-government units gain public support from the citizens Providing easy access to services in local self-government units increases their utilization and raises the citizens' interest in them . We can conclude that the constant use of social media between the municipality and the citizens will achieve the desired effects. Citizens will be pleased with the obtained information, services, needs, etc. On the other hand, local government will improve its public image among the citizens, especially when creating public opinion. Therefore, it is recommended that social media be considered an unbreakable part of any local government so that a positive image can be built and influence public opinion.

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THE IMPACT OF MOBILE APPLICATIONS ON HOTEL
SERVICE QUALITY

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Abstract

With the arrival of the fourth industrial revolution, automation is becoming more important in all aspects of our lives and businesses in general. The field of service automation in the tourism and hospitality business is attracting a lot of attention because it has already started to proliferate in this industry. Additionally, tourists have become more demanding, placing a higher value on their time and expecting a service that is completely tailored to their needs. With all of this in mind, implementing technological solutions such as mobile applications is one method to improve the quality of hotel services and improve guests satisfaction and experience.

The purpose of this study was to determine how important it is to implement and use mobile applications in the hospitality industry as a way to automate business. The paper explains what are the benefits of using mobile application for tourists, but hoteliers as well in order to meet or exceed guests expectations. The paper strive to illustrate how tourists are using mobile applications in all phases of their travel, and how the value of these applications have increased even more during the Covid-19 pandemic. Finally, we will compare the mobile applications of 5 largest hotel chains by number of rooms, highlight their capabilities, and analyze the satisfaction and frequency of use by guests. The findings of this study are notable for both researchers and innovative tourist and hospitality companies.

Keywords: Mobile applications, Hospitality, Service automation, Service quality, Tourism.

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1. Introduction

The fourth industrial revolution has increased the relevance of service automation in our daily lives. Going shopping, paying bills at the bank, waiting in line at the doctor's office, purchasing match tickets at the box office, collecting tolls at tollbooths, and other activities that were once considered normal are now frequently seen as a waste of time and a source of stress. Additionally, the Covid-19 pandemic's rise emphasized the need to keep a safe distance from others and stay away from crowds. The number of home meal deliveries has grown, followed by online purchases of goods from pharmacies, hardware stores, and grocery stores. The need to reorganize the economy, create new employment, and enhance the technology infrastructure itself was affected by all of the aforementioned factors.

On the other hand, regardless of the type of business involved, a market crisis always poses a threat and an opportunity. This might result in greater competition, a lack of demand, adjustments to the price of goods and services, and other issues. When the production industry faces an increasingly fierce market competition, the question of effectiveness and efficiency is continually brought up. The only thing that matters now is the quality of a product and how quickly it will be delivered to consumers, not whether or not it is on the market.

All of the above left a deep mark on tourism. Tourism as a predominantly service-oriented industry reached its peak in 2019 talking about the number of arrivals in international tourism and the number of overnight stays. Over time, tourists have become more educated, better informed, more demanding, and they know what value for money is. Regardless of the fact that the tourist offer is inelastic, there is a need for constant adjustment in order to satisfy tourists' needs. The pace of life has changed, and tourists nowadays value their free time more than ever. Because of all of the above, they want a service of adequate quality, and they want an to experience something new, something they will never forget. As one of the ways to provide additional value for tourists, with numerous benefits such as personalized travel, time saving, cost reduction, etc., the automation of services in tourism and hotel industry appeared. It caused the use of chatbots and robots to increase in the tourism sector, and mobile applications are being used more frequently in the hotel industry.

2. Mobile applications in hospitality industry

Mobile technology has the ability to change how people travel generally by altering the nature and function of travel planning, creating and destroying the idea of tourism, and reconfiguring travelers, locations, and other people (Wang & Fesenmaier, 2013). The first mobile hotel application was released in 2009 by Intelity to improve guest service and business operations (DeRise, 2021). In the beginning, they were based on reserving accommodation at one of the hotels. Now tourists may utilize cellphones while traveling for social interaction, information gathering, information search, and entertaining (Dorcic *et al.*, 2019). Additionally, a feature of the emerging hospitality industry is that it allows

travelers to quickly and easily customize their vacation to suit their needs with the use of mobile applications.

Tourists utilize mobile applications during the whole travel, including the prearrival, arrival, stay, departure, and assessment stages (Lukanova & Ilieva, 2019). Prior to their journey, visitors utilize technology solutions to research the tourist destination and accommodation, make reservations, and pay for services. When they arrive, they inquire about the hotel's amenities, the check-in time, and whether remote check-in is available. Their objective is to quickly and easily modify the room's lighting, music, temperature, and other features while they are staying at the hotel. They also want to receive current information about the tourist spots. Checking out and paying for the utilized services are steps in the process of the visitor leaving the hotel. Every moment is valuable to visitors because they frequently have to leave early for a bus, flight, meeting, etc. Additionally, it might occasionally happen that entire parties of visitors wish to leave at the same time, which can lengthen the wait for those who traveled alone. Mobile application-based remote check-out and payment is one of the options. If they are included in the same application, additional features like a flight reminder, weather forecast, or a report on probable traffic congestion might be very helpful. After departing the hotel, guests may have the chance to rate their experience by completing a survey, emphasizing both the positive aspects of their trip and the areas that might need improvement. A discount on the next visit, a spa center gift card, a free meal, a free upgrade when that option is available, and other incentives could be used to encourage the client to complete the survey.

There are considerable advantages for hoteliers as well as benefits for guests who utilize mobile applications, but there are also challenges. The level of happiness and fidelity of both customers and staff in the hotel sector is a key indicator of success and has a significant impact on the bottom line of the business. As we previously mentioned, the advent of mobile applications creates prospects for time savings and visitor experience customization. On the other hand, it gives the employed staff more room for more creative activities and gives them the opportunity to concentrate more on specific needs and prospective issues. By doing this, we may affect how satisfied both guests and staff are with one another. Furthermore, applications connected to travel, namely, make marketing activities, product customisation, distribution, advertising, supplemental services, destination guidance, and customer relationship management easier (Huang *et al.*, 2019). Hoteliers must figure out how to both convince visitors to download and utilize an app while they are there and prevent them from uninstalling it when their trip is done. Due to the aforementioned, it is essential to develop an application that draws users in first and foremost with its functionality before moving on to its appearance, usability, and other factors.

Wu *et al.* (2018) came to the following conclusions regarding the use of mobile applications in the tourism and hospitality industry:

- In the context of mobile hotel booking, functionality performance significantly influences customer satisfaction.
- Customer satisfaction is significantly impacted by usability performance in the context of mobile hotel booking.

- In the context of mobile hotel booking, perceived value has a favorable impact on customer satisfaction

The growing privacy concerns among consumers also have an impact on their willingness in using mobile applications. Unfortunately, we are seeing that data and information appear to be easier to get than ever because to the growth of the Internet and modern information technologies. On the other side, if a guest requests a customized experience and hotels work to meet their expectations, a lot of data about the guest will be gathered. If we want to greet the guest at the hotel right away upon his arrival, if we want to keep his car in the hotel garage and want to surprise him with his favorite dish, information like the planned time of arrival at the hotel, car registration number, and favorite dish are examples of the valuable information. On the other hand, the disclosure of such information may at the very least cause discomfort for those who value their privacy and security greatly, including public personalities, but also other regular travelers. Due to the aforementioned factors, it is essential to have proper security mechanisms so that hoteliers may gain the trust of customers while discussing this subject by using ethical business practices. Another issue is that users only interact with applications when they want to use them. For instance, the majority of people who use mobile software download travel applications, yet almost half of them are subsequently deleted (Lee, 2018).

2.1 Mobile applications in tourism during Covid-19 era

At a global basis, there was a large drop in tourist activity following the Covid-19 pandemic. In contrast to 2019, there was a 74% average decline in the number of international arrivals in 2020, going from 1.5 billion to 381 million (UNWTO, 2021). Although there were 15 million more visitors in 2021 than in 2020, there were still 72% fewer arrivals than in 2019 (UNWTO, 2022). The sum of overnight stays, tourist expenditure, and the number of jobs in the tourism industry were all negatively impacted by the aforementioned factors. One of the things limiting the return of tourism was people's worry for their own safety and the protection of their family and friends, even while the borders were open. This profession has been greatly impacted by the demand for physical distance between people. The challenge of utilizing tourist services while protecting both visitors' and employees' health has emerged.

Going back to the travel phases, we can draw the conclusion that using mobile applications while traveling not only relieves the workload on tourism industry employees, saves time for tourists, and contributes to the development of personalized service, but also improves the health of all tourism participants. Tourists are advised about the tourist destination and accommodation during the pre-arrival phase. On this occasion, he discovers various information on the same tourist spot, travel up until the end, and accommodation in one of the facilities. If the tourist has access to enough pertinent information, they will first decide on their trip. Conditions for accessing travel service providers using mobile applications, social networks, or by sending emails are better than ever today. The traveler might avoid making unnecessary visits to hotels or travel agencies in this

way. Additionally, implementing a chatbot on a travel agency's or hotel's website, social media pages, or mobile application offers many advantages, including (Dickinson, n.d.):

- Help enhance guest communication
- They are always on, and provide guests with 24/7 smart communication
- They can be multilingual, catering for international guests
- Bots help move guests along the booking path faster and more efficiently
- Reduce workload of your staff
- Improved profiling of guests to help you later in your efforts to boost loyalty

If the tourist chooses remote check-in upon arriving at the tourism destination, he will avoid crowds at the reception. On the other side, if they let the hotel know their expected arrival time using the application, they will spend less time waiting at the front desk or in the public areas of the hotel.

The mobile application can take the place of the real key, which the guest would have used to access the room and control the lights, temperature, and television channels while staying at the hotel. Despite disinfection, widespread use of remote controllers and coded keys can still be a source of infection. Additionally, scanning a QR code or a digital menu and drink list within a smartphone application in a restaurant will improve the health and safety of customers and staff. Furthermore, if it were feasible to order food and drinks with the possibility to make notes, food service efficiency would be much increased, and in situations where the customer knows exactly what he wants, he could order right away upon entering the restaurant.

Regarding staying at the destination itself, the availability of a mobile application that allows users to purchase tickets and access basic information about the main tourist sites will restrict the amount of individuals who can visit particular attractions during a specific period of time. Furthermore, China provided a successful example of crowd management in which an application with a QR code and passes represented the possibility of entering busy locations like malls, bus and train stations, airports, and other such places. Access was restricted to those who were infected, others who came into contact with them were warned to be aware of their health, and the safety of healthy individuals was considerably increased.

2.2 Mobile applications of largest hotel chains by room number

The following five major hotel chains are distinguished by the number of rooms, according to data from September 2021⁴:

⁴ Source: Statista. Retrieved July 10, 2022, from <https://www.statista.com/statistics/197859/total-number-of-guestrooms-of-us-hotel-companies-worldwide/>

1. Marriott International (1,429,171)
2. Hilton Worldwide (1,041,154)
3. IHG Hotels and Resorts (883,819)
4. Wyndham Hotel Group (795,909)
5. Choice Hotels International (601,245)

In the sections that follow, we'll examine the mobile applications of these hotel chains, compare their features, and take a glance at the reviews and download counts on the leading application stores in the world - the Google Play Store for Android devices and the App Store for iOS devices. According to statistics, the Google Play Store (around 3.5 million, Q2 2022) has by far the most applications available, followed by the Apple Store (around 2.2 million, Q2 2022)⁵.

2.2.1 Marriott Bonvoy

The following advantages are available to Marriott Bonvoy application users:

- Remote check-in i check-out
- Using the phone as a digital key
- Communicating with employees before arrival, during arrival and after leaving the hotel
- Possibility to reserve rooms at more than 7000 hotels across 30 different Marriott brands
- An option to send questions and requests to completely tailor the stay at the hotel to the visitor's needs (e.g., choosing a specific type of pillow, asking for an extra blanket, toothpaste, or additional towels).
- Ordering food and drinks from the hotel restaurant (room service);
- Tracking location of the hotel for easier orientation during the stay at the destination

More than 5 million Android users downloaded the app, posted more than 180,000 reviews, and gave it a high rating of 4.8/5. (where 5 is the best). When it comes to iOS mobile phone users, the scenario is comparable. They have rated the app highly, giving it a score of 4.9, and have left over 1.2 million reviews. In the travel category, the Marriott Bonvoy app is also placed 19th.

2.2.2 Hilton Honors

The Hilton Honors mobile application offers following features:

⁵ Source: Statista. Retrieved July 10, 2022, from <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>

- Booking rooms at more than 5700 hotels
- Digital key
- The option for making special requests
- Guest check-in and check-out via the app
- Access to information about the hotel, tourist destination, weather forecast, and similar things
- Earn 500 Hilton Honors points for every booking made through the application
- By installing the application, you can access cost-free wireless internet.

When it comes to Android devices, the Hilton Honors app has more than 5 million downloads just like the Marriott Bonvoy app. Additionally, we can infer that users are satisfied based on 118,000 reviews with an average rating of 4.7. The Hilton Honors app is clearly much more popular than the Marriott Bonvoy app when it comes to iOS users: The Hilton application has more reviews (1.7m), has a similar average rating (4.9), and is rated 16th in the travel category. In addition to everything said above, it's crucial to keep in mind that this application is used to make more than 20% of all reservations at Hilton Worldwide hotels (Liffreing, 2017).

2.2.3 IHG Hotels and Resorts

IHG Hotels and Resorts, the third-largest hotel chain by number of rooms, introduced the IHG Hotels & Rewards application. In addition to the advantages listed in the previously examined applications (remote check-in and check-out, acquiring the required information, making specific requests etc.) we would highlight the following (IHG, n.d.):

- Gaining access to exclusive offers
- Daily health tips
- Fitness videos
- A digital magazine on healthy living
- A calendar of hotel events

In this way, they encouraged guests to use the app both while they were traveling and after they checked out of the hotel. The removal of applications from mobile phones once a guest leaves the hotel, as we've already discussed, presents a significant difficulty for hoteliers. The IHG Hotels & Rewards app is not far behind the aforementioned mobile applications in terms of statistics and customer satisfaction. It has also received over 5 million downloads for Android operating systems, although there are less reviews and a lower average rating (43,000 reviews, 4.4 rating). Furthermore, 245,000 reviews with an average rating of 4.9 have been submitted by users of the iOS operating system. When it comes to the travel category, this mobile app came in 49th place.

2.2.4 Wyndham Hotel Group

We were unable to identify any unique advantages for the Wyndham Hotels & Resorts mobile application that would make it stand out favorably when compared to the previously examined applications. This application provides travelers with:

- Direct booking in around 9000 different hotels across 80 countries.
- Collecting loyalty points
- Offering hotel and travel destination information

On the Google Play Store, the app has received over 1 million downloads, over 33,000 reviews, and an overall rating of 4.6. The app acquired over 93,000 reviews from iOS users, who gave it an average rating of 4.8, and it came in at number 92 in the travel category. The problem we encountered into was that the application cannot be downloaded in Serbia.

2.2.5 Choice Hotels International

The Choice Hotels mobile application is fairly comparable to the previously studied applications in terms of functionality and design. They hope to entice customers with the promise that they would receive the best pricing through the app as their key marketing slogan. Using this app gives users access to several advantages:

- Finding a suitable hotel and all relevant information about the trip's destination
- Gaining access to reviews of prior hotel guests
- Making payments via the app
- Accruing points and awards.

Over a million Android users have downloaded this smartphone application. They had an average rating of 4.5 and more than 48,000 reviews. Contrarily, guests using iOS have left slightly over 5,000 evaluations with an average rating of 4.6. This application is currently 151st in the travel category.

2.2.6 Hotel mobile applications in the future

We have seen that changes in the tourism industry can occur suddenly, which has an adverse effect on all service providers who are unable to adapt. The demand for innovations expanded as a result of increased competitiveness, but also due to tourists' higher levels of education and more varied experiences. Although communication was once the only use for mobile phones, they have since evolved into portable computers that are always with us. In what ways does this affect travel industry?

First and foremost, we're considering a greater chance to acquire a competitive advantage in the market by tailoring the service to the demands and requirements of the traveler. The hotel industry, which at least partially relies on the automation of services through the introduction of various technological solutions, experiences many advantages, including time savings, a positive impact on sales, the elimination of the problem of a labor shortage during the off-season, and many others. The demands of tourists are also likely to change in the future. We may anticipate additional service automation advancement while discussing the hotel sector. Guests want to feel as comfortable as they would at home, therefore they should have access to technology on travel that is comparable to what they already use (Bilgihan *et al.*, 2016). In addition, it is projected that tourists will want to spend as much time as they can consuming goods and services due to the shrinking quantity of free time. Giving the guest total control over their stay might be one of the hotelier's competitive advantages. On the other hand, since check-in, check-out, payment, and similar bureaucratic procedures can be time-consuming, a visitor may desire to avoid them or expedite them as much as possible. Technology seems like a reasonable solution in the situation. People are drawn to new technologies because they think they will make them happier or because they like the idea of utilizing something different (Ivanov *et al.*, 2018).

On the other side, as time goes on, people's worry for their own privacy increases, it becomes more difficult to gain over tourists' trust, and it's possible that people will become overwhelmed of technology. Our workdays don't end when we go home because we are overloaded with information that we receive via email, social media, or in the form of online adverts. Due to excessive notifications, people have already begun to mute their phones, and slow technological burnout is rapidly approaching. Regardless of what decisions are made, hoteliers need to make an appropriate prediction based on which we will make further business moves (Borovčanin *et al.*, 2017). They should carefully plan the environments in which it provides services, both physically and virtually, in order to maintain its business success (Lee, 2018).

3. Conclusion

The competition for competitive advantage was emphasized as a result of the rise in international tourists and the consequent concentration of travel service providers on the market. The guest has become the center of attention, and meeting his demands has become the primary directive for producing services of appropriate quality and attaining professional success. Over time, his life and needs change, which leads hoteliers and other tourism companies to continuously adapt.

The use of mobile applications in business is one of the technological strategies employed by the most successful hotel chains. Although the automation of services in the tourism industry is still in its early stages, advantages like time and money savings, better sales, and personalized services are already apparent. We can see that for the largest hotel chains, mobile applications mainly offer the option of remote check-in, check-out, and payment for hotel services, as well as information about the hotel and tourist destination and the ability to accrue loyalty

points. With the opportunity to utilize the app as a digital key, Marriott International and Hilton Worldwide took things a step further and IHG added a special fitness area to its app.

The privacy risk and figuring out how to convince guests to download the app and use it outside of the hotel are the key problems that raise concerns. Given the foregoing, it is crucial to acquire the confidence of tourists, insist on business ethics, assess the market, and strategically place oneself on it through innovation and high-quality service.

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THE IMPACT OF DIGITAL TRANSFORMATION ON THE
RETAIL FOOD BUSINESS

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Abstract

Accelerated evolution and continuous improvement of digital technologies challenge retail companies to change and restructure their business models. Digitalization becomes a concept which transforms societies, economies and ways of doing business, including the retail food business. The research on transformation of retail companies due to the impact of digitalization is a relatively new issue. More and more retail companies are looking for ways to understand and use the opportunities of digital transformation. Despite the potential of digital transformation to generate significant economic benefits, many businesses do not undergo successful digital transformation. The main goal of the study is to interpret the impact of the digital transformation on the retail food business, considering the change in consumer behavior, and on this basis to derive the emerging dependencies. The method of single linear regression and correlation is used to measure the manifested dependencies. The highlighted method is applied using IBM SPSS Statistics (Statistical Package for the Social Sciences). Respondents in the survey are individuals from the 27 Member States of the European Union. The data for their budgets refers to the period 2016-2021. Eurostat is used as the main information source of data as a statistical service of the European Union. The obtained results allow revealing the impact of the digital transformation on the business models of food retailers, as well as on the change of consumer behavior in the process of ordering and buying food. In the study, the approach of focusing on the costs of individuals for online food purchases is of particular importance. It is this approach that determines the relevance of the study.

Keywords: Retail food business, retailers, digital transformation, online food purchases by individuals.

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1. Introduction

Retail companies are increasingly looking to understand and implement a cost-effective digital transformation of their business with modern communication and computer technologies. Digital transformation has the potential to generate significant economic benefits for retailers' businesses.

The main goal of the present study is to interpret the impact of digital transformation on the grocery retail business, considering the change in consumer behavior, and on this basis to derive the emerging dependencies. To achieve the goal, the following research tasks are set: bringing and examining conceptual ideas and judgments about the impact of digital transformation on the grocery retail business; interpreting empirical aspects of the impact of digital transformation on the grocery retail business; formulation of more important conclusions and generalizations from the theoretical-empirical study.

The single linear regression and correlation method is used to measure the emerging dependencies. The highlighted method is implemented using IBM SPSS Statistics. Respondents in the survey are individuals from the 27-member states of the European Union. The data on their budgets refer to the period 2016-2021. The determined duration of the period ensures tracking of the dynamics and trends in the development of the phenomenon being studied. Eurostat as the statistical office of the European Union is used as the main data source. The obtained results allow revealing the impact of digital transformation on the business models of food retailers, as well as on the change in consumer behavior in the process of ordering and purchasing food. In the research, the approach of focusing on the expenditure of individuals for online food purchases is of particular importance. It is precisely this approach that determines the relevance of the study.

The transformation of the grocery retail market towards omnichannel, including offline and online ordering and purchasing, is a relatively recent phenomenon. Consumer preferences and attitudes towards ways of buying groceries are changing. Technological advances and the ability of retailers to invest in infrastructure for online shopping, storage and delivery of goods are helping to increase the speed and convenience of digital consumers.

2. Digital transformation and its impact on the grocery retail business

Digital technologies are electronic tools, systems, devices and resources that generate, store or process data (Deloitte, 2019). These technologies are having a profound impact on businesses and their digital transformation capabilities. Digital transformation is changing consumer behavior and transforming the grocery retail landscape towards omnichannel or omnichannel. In the specialized literature, a number of authors devote their research efforts to reinventing innovation management in the digital world. A group of theorists including S. Nambisan, K. Lyytinen, A. Majchrzak and M. Song, define digital transformation as the creation and subsequent change of market offers, business processes or models that result from the use of digital technologies (Nambisan, et al., 2017). This necessitates, as confirmed by J. Brownlow, M. Zaki, A. Neely and

F. Urmetzer, companies, including retail companies, to rethink the role and value of data in the business models they implement (Brownlow, et al., 2015).

At its core, digital transformation should be seen as much more than technology deployment. In most cases, according to S. Gupta, this type of transformation brings about a fundamental change in the basic mindset of retailers, approaches and tools to reposition parts or the entire business design (Gupta, 2018). Focusing only on the selection and implementation of appropriate digital technologies is not the only condition that leads to market success. Digital transformation involves changes in the organizational dynamics of business. Researchers led by G. Kane, D. Palmer, A. Philips, D. Kiron and N. Buckley, derive a multifaceted approach to representing the considered transformation. The cited authors emphasize that digital transformation encompasses leadership, talent development, culture, organization and the company's adopted strategy (Kane, et al., 2017).

Digital transformation is a significant change in the core business model of how a retail company creates value. According to the analyzes and evaluations of A. McAfee and E. Brynjolfsson data-driven companies are on average 5% more productive and 6% more profitable than other competitors in the market (McAfee & Brynjolfsson, 2012). The so-called digital masters are characterized by visionary management and digital capabilities that provide them with a 26% higher profit margin compared to their main competitors. Along with the highlighted economic benefits, digitally mature companies generate 9% higher value amounts of revenue from their physical assets (Westerman, et al., 2012).

Considering the potential of digital transformation to generate significant economic benefits, some retailers are not undergoing the type of change that leads to market success. At the same time, in their developments, authors such as P. Mugge, H. Abbu, T. Michaelis, A. Kwiatkowski and G. Gudergan, bring out the following more important criteria for digital maturity: commitment, investment and leadership (Mugge, et al., 2020). In this regard, digital leaders should build trust and credibility by taking differentiated actions that distinguish them from other market participants (Abbu, et al., 2020). Along with this, as H. Abbu and P. Gopalakrishna point out, synergistic effects of implementing digital transformation and business internalization should be sought. In the context of retail companies that are involved in international markets, the relationship between the digital transformation models implemented in practice, the levels of internationalization and the reported market successes is important (Abbu & Gopalakrishna, 2019).

Retailers are powerful stakeholders in the food chain, using digital technologies and digital marketing strategies to make food supply chains safe, healthy, efficient and sustainable. Through the digital technologies used, product availability and pricing processes are controlled, sustainable consumption is improved and food losses and waste are reduced, and the range of healthy and affordable food choices is expanded (Pulker, et al., 2018).

However, many transnational food retailers market highly processed, cheap, and conveniently packaged foods and beverages purchased by high-, middle-, and low-income consumers. As a rule, energy-dense, nutrient-poor products contain excessive fat, added sugars, and sodium, which contribute to

poor-quality diets associated with malnutrition, obesity, and consumer disease (Baker & Friel, 2016).

Consumers choose online grocery shopping for a variety of reasons. For example, a portion of consumers are more likely to use online services motivated by convenience, time savings, competitive pricing, enjoyment, and previous online shopping experience (Yeow, et al., 2017). There is research in the literature that online grocery shopping can increase unhealthy choices, as consumers buy mostly processed foods and are less likely to buy fresh fruits and vegetables online (Jilcott Pitts, et al., 2018).

Digital technologies are transforming the grocery retail environment by giving consumers choices in ordering and acquiring food in new ways based on their preferences, income and time constraints (Food Marketing Institute (FMI) & Salmon, 2017). In the omnichannel world, consumers can buy and consume food both in physical stores and online. In a number of high- and middle-income countries, such as Canada, China, Germany, India, the United Kingdom, transnational food retailers are digitizing the ordering and payment process to synchronize the experience of physical stores and online transactions (Deloitte, 2019). Digital technologies provide an intuitive, easy and efficient online grocery shopping process where consumers can use digital touch screens to place an order (Barrett, 2019).

When tracking the status and changes in the digitalization of the grocery retail business, the issues related to highlighting the key factors having their impact occupy an important place. In this direction, the changing attitudes and behavior of consumers, technological progress and competitive pressure are identified as key factors predetermining digital transformation in the grocery retail business. Thus, the change in consumer behavior - price, convenience and speed, together with the advancement of technology, cloud computing, mobility systems and the analysis of large databases are determined as basic for the digital transformation of the grocery (Evins, 2017) retail business.

The main result of transforming to a digital business is the ability to engage and satisfy the consumer. It seeks to boost consumer loyalty, revenue and retailer profitability. An essential component of user satisfaction is a seamless and convenient mobile shopping application. This app should provide the expected online grocery ordering in individual product categories, the ability to save and reuse shopping lists, and pre-schedule food deliveries. Therefore, the reasoning thus given shows that it is the digital consumer who is defined as one of the centers in the food chain in the process of its digitalization.

3. Empirical aspects of digital transformation in the grocery retail business

In the current development, the research emphasis is placed on interpreting more significant manifestations of the digital transformation affecting the grocery retail business, as well as on the change in consumer behavior and online food purchases by individuals. On this basis, certain dependencies are deduced, corresponding generalizations and conclusions are formulated.

The respondents of the research are the natural persons as consumers in the European Union. The data on their income, expenses and consumption refer to

the period 2016-2021. The specified period provides tracking of the dynamics in the development of the research phenomenon. A particular research focus is placed on online food purchases by individuals in the EU-27. The data for this type of purchase is based on the results of a 2021 Eurostat survey on the use of information and communication technologies by individuals.

Methodologically, the single linear regression and correlation method is the basis of the study of the budgets of individuals from the 27 countries of the European Union. The application of the method is implemented using the statistical software product IBM SPSS Statistics. The analysis of the expenditure of individuals on online purchases goes through two successive steps: first step, estimating the total expenditure of individuals on groceries, i.e. purchased both offline and online, considering dependence on disposable income; second step, looking at consumer behavior and attitudes towards the Internet, and estimating the amount of spending on online grocery shopping. Such a methodological approach allows for an assessment of the economically related phenomenon - "expenditures of individuals for the consumption of food products purchased offline and online - disposable income of individuals".

The main hypothesis adopted is that consumer spending is a function of disposable income. Through the prism of the outlined research objective, it is assumed that the dependence of the total cost of purchasing food on the income available to consumers is manifested by relative similarities in terms of both the magnitude of the expenditure on food purchased offline and the magnitude of the expenditure for food ordered and purchased online.

In specialized theory and practice, judgments are made that modern European users clearly state their position regarding the use of the Internet. For consumers, the Internet is an extremely important tool for online ordering and purchasing. According to Eurostat estimates, in 2021 more than 7 out of 10 Internet users will make online purchases. In general, the share of this type follows an increasing trend, with the highest share observed in the youngest age group 16-24 years (80%), followed by the age group 25-54 years (79%) and the age group 55- 74 years (59%) (Eurostat, 2022). Within the European Union, the relative share of Internet users shopping online in 2021 varies widely. The reported values range from 42% in Bulgaria, 44% in Romania, to 94% in the Netherlands. Considering all individuals aged 16 to 74 in the European Union, the relative weight of online users in this group equals 66%. Denmark is among the European countries with the highest relative share, amounting to 91%. A survey of shopping frequency shows that in a given quarter of 2021, one-third (33%) of e-shoppers make purchases once or twice, another third three to five times, while 16% say they do so from six to ten times (Eurostat, 2022).

Users appreciate that it is convenient to shop anytime anywhere, as well as to have access to a wider range of products, to compare prices, and also to share their opinion about the purchased goods with other users. In response and as a reflection of online consumer demands, grocery retailers are moving towards implementing business models based on digital transformation. This process is accompanied by the manifestation of a number of challenges and difficulties.

As retail companies evolve, they must continually refine their business model to the changes in the market environment that offer them opportunities

increase user engagement and improve the overall shopping experience. In this direction, as experts confirm, digital transformation is expected to have a profound impact on both retailers and consumers (Deloitte, 2019). The process of transition to digital technologies requires significant changes in the so-called "omnichannel retail landscape" or 'retail system'. Findings from experts show that the retail industry has a long way to go to effectively implement omnichannel strategies and digital platforms.

For example, according to the results of a global IBM survey among 1,900 retail leaders and manufacturing companies, conducted in 23 countries around the world, it was found that in 2021 (Orchestra, 2021):

- nearly 85% of retailers say they plan to use intelligent automation to better digitally engineer their supply chain;
- about 79% of respondents expect to use smart automation for smart users;
- over 67% of respondents predict sales revenue growth of over 10% as a result of future use of digital technologies.

The given data are visualized using Fig. 1.

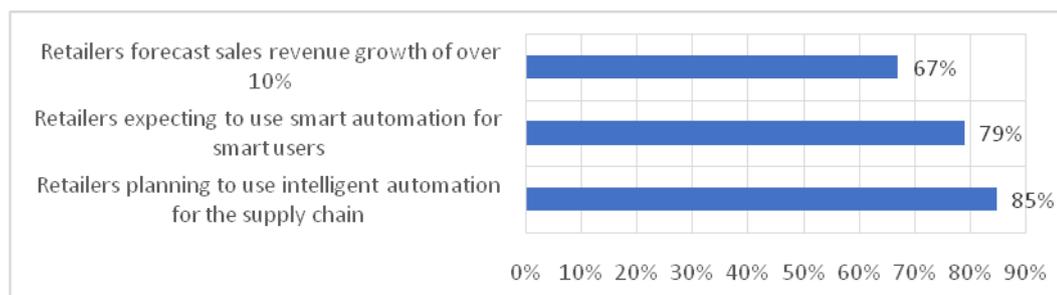


Figure 1. Opportunities for retailers in the use of intelligent automation

Source:https://www.orchestra.com/en/resources/ebook-white-paper/10_trends_changing_omnichannel_retailing_in_2021

Presented and visualized by means of Figs. 1. data allow the generalization that the difference between the importance of using digital technologies and the extent of their application is substantial. The lack of appropriate digital technology can be identified as one of the key issues for building an omnichannel strategy.

Retailers need digital tools including messaging apps, artificial intelligence, digital payments and visual builders, security that support e-commerce, especially for grocery and prepared food. A part of the retailers does not have a reliable strategy and sufficient financing of the transformation process towards digitalization. Retailers are digitizing the grocery ordering and acquisition environment, considering consumer preferences and emerging changes in consumer behavior. In this direction, the European Union Consumer Budget Survey is a useful tool for analyzing and evaluating the costs of groceries purchased online.

By its very nature, reaching effective market solutions imposes on retailers the need for precise knowledge of the specific characteristics and peculiarities of consumers, as well as the patterns of consumption they follow, including food products. Analysis of food consumption patterns can be based on the budgets of European consumers. The research emphasis on grocery consumption, including online, rests on the belief that this consumption is of paramount importance in explaining changes in an economy, in the case of the European economy. In this research direction, the teaching of J. Keynes confirms that consumption is an important element of any macroeconomic model (Keynes, 1993).

In the sequence of the first analytical step set in the present study, before the analysis of the costs of individuals for online purchases, as consumers, from the 27 countries of the European Union, the total costs of consumers for food can be evaluated goods purchased both offline and online. Such a methodological approach allows for an assessment of the economically related phenomenon - "expenditures of individuals for the consumption of food products purchased offline and online - disposable income of individuals". The results of the study of the relationship between the income of individuals in the EU-27 and their expenditure on groceries purchased offline and online are visualized by means of the following tables and a figure: Table 1. Model Summary, Table 2. ANOVA, Table 3. Coefficients and Figure 1. Relationship between food consumption expenditure and disposable income of EU-27 households.

Table 1. Model Summary

R	R Square	Adjusted R Square	Std . Error of the Estimate
,492	,242	,090	283076,380
The independent variable is available income .			

Source: Eurostat, 2022. E-commerce statistics for individuals. [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals&oldid=554700 [Accessed 25 June 2022].

The variance estimation is performed according to the data shown in Table 2.

Table 2. ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	127861572364,897	1	127861572364,897	1,596	,262
Residual	400661185393,681	5	80132237078,736		
Total	528522757758,578	6			
The independent variable is disposable income.					

Source: Eurostat, 2022. E-commerce statistics for individuals. [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals&oldid=554700 [Accessed 25 June 2022].

The following data, visualized through Table 3., allow the presentation of the coefficients that are calculated on the basis of the single linear regression and correlation method used.

Table 3. Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
available income	1,368	1,083	,492	1,263	,262
(Constant)	5622897,478	1040642,440		5,403	,003

Source: Eurostat, 2022. E-commerce statistics for individuals. [Online]

Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals&oldid=554700 [Accessed 25 June 2022].

The following Figure 2 visualizes the relationship between EU-27 individuals' expenditure on offline and online food consumption and their disposable income.

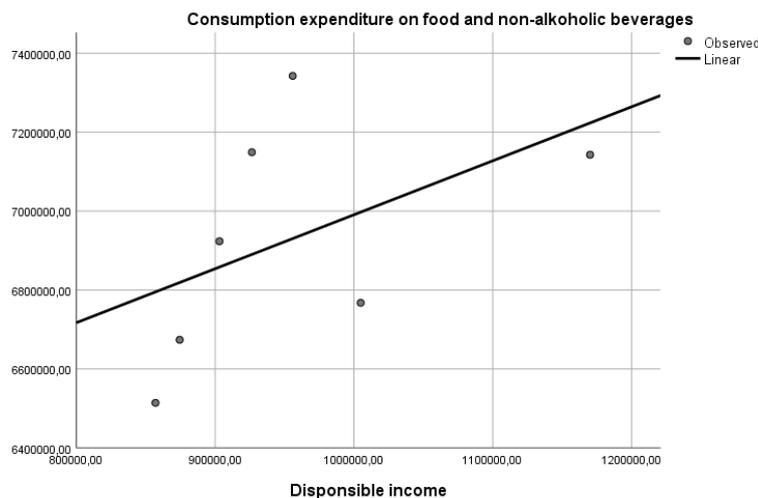


Figure 1. Relationship between food consumption expenditure and disposable income of EU-27

Source: Eurostat, 2022. E-commerce statistics for individuals. [Online]

Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals&oldid=554700 [Accessed 25 June 2022].

Conducting a one -factor linear regression analysis requires testing the hypothesis of model adequacy. This verification constitutes a basis for its acceptance and further application.

The main measures of dependence, which have a cognitive significance in an analytical aspect, are the regression coefficients, the correlation coefficient and

that of determination. In turn, the regression coefficient measures the average change in the outcome variables for a unit increase in the factor variable. As can be seen from the data in Table 3., this coefficient takes the value 1.368 and the assumption can be accepted that with an increase in the disposable income of households by 1 euro, an average increase in the cost of consumption of groceries purchased offline and online is established, with about 1,368. According to the data from Table 1., the correlation coefficient is 0.492. This coefficient is perceived as a measure of the degree of dependence, which is also called the "strength of the relationship" between the two variables. From the review of the specialized literature, it is established that at $0.3 < R \leq 0.7$, an average strength dependence is determined, i.e. moderate degree of dependence or moderate correlation. Therefore, the value of the correlation coefficient established in this way allows to determine an average degree of dependence between the disposable income of individuals in the EU-27, in their capacity as consumers, and their expenditure on groceries purchased offline and online. In essence, the coefficient of determination measures the relative weight of variation in food consumption expenditure. This variation is explained by the change in the disposable income of individuals. According to the data from Table 1., the analyzed coefficient of determination takes the value as follows: $R^2 = 0.242$. This means that more than 24% of the differences between European consumers in their spending on food consumption - offline and online - is associated with differences between them in the magnitude of disposable income.

From what is shown in Figure 2, it is clear that the values of household disposable income are plotted on the abscissa axis, and the values of the consumption costs of food products purchased offline and online are plotted on the ordinate. The existence of a dependence between the two quantities is a basis for the statement that the actual values of food consumption costs tend to be distributed around or close to the regression line.

Along with the analysis and evaluation of the relationship between the disposable income of individuals in the EU-27, as consumers, and their spending on food purchased offline and online, both consumer behavior and their attitude towards the Internet, as well as the amount of spending on online grocery purchases. This aspect corresponds to the second analytical step set in the present study.

According to Eurostat data in 2021 (Eurostat, 2022):

- nearly 74% of Internet users shop online;
- over 42% of consumers make an online purchase worth between 100 and less than 500 EUR in the last three months before the survey;
- about 18% of individuals online order and purchase food or soft drinks from stores or food vendors.

According to Eurostat, the 16-24 age group has the highest share of online food shoppers, followed by the 25 to 54 age group (Eurostat, 2022). The 55 to 74 age group remains the lowest relative weight of online grocery shoppers.

5. Conclusion

At its core, digital transformation is revolutionizing the way goods, including food, are designed, manufactured and delivered to consumers. This process has huge implications and impacts for the value chain. Digital grocery shopping and changing consumer behavior from the European Union rely on consumer values related to favorable shopping experiences, fast and easy transactions, price comparison capabilities. Digital technologies are blurring the lines between the physical and digital worlds by providing real-time user access to new and existing data sources. Combined with powerful analytics, visualization and algorithmic tools, this access to data is fundamentally changing the way retail companies do business.

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WOMEN'S ENTREPRENEURSHIP IN RURAL AREAS IN
TURKEY

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Abstract

The development of a country can be realized by bringing together many factors such as economy, education, health and justice and executing these factors in the best way. The effective implementation of these factors primarily depends on the equal rights of men and women living in the society. For this reason, the increase in the labor force participation rate of women living in approximately half of Turkey's population, will also contribute to Turkey's development. Because the more women's employment in a country increases, the higher the development level of that country will be. In addition, for the development of countries, the differences between urban and rural areas should be minimized. When Turkey's demographic and economic structure is examined, it is seen that agricultural activities make a great contribution to the country's economy. In order to ensure rural development in Turkey, it is necessary to develop and support women's entrepreneurship. Entrepreneurial activities of the female population, who are among the disadvantaged groups especially in rural areas, will make a great contribution to the country's economy. For this reason, in this study, the current situation of women entrepreneurs operating in rural areas, the problems they encounter and solution proposals will be emphasized.

Keywords: Women Entrepreneurship, Rural Development, Rural Entrepreneurship, Agricultural Entrepreneurship.

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1. Introduction

Throughout history, except for extraordinary situations such as war, famine, and epidemics, the male and female populations of the world have been equal to each other. Even after these extraordinary conditions, nature has balanced itself and made the ratio of the male and female population always close to each other. Because naturally, both sexes are needed for the continuation of humanity. Acting with this awareness, societies that give equal rights to men and women have also developed.

Today, it is observed that societies that realize economic growth and development in the world attach great importance to entrepreneurship. In a study conducted by the Global Entrepreneurship Network (GEN) among 29 countries, it was revealed that the economic growth of the countries that value and implement entrepreneurship is positively affected (Albayrak, 2022).

The rate of female employment in Turkey is around 32% of the total workforce (TURKSTAT, 2021). According to the results of the Address Based Population Registration System (ABPRS); Considering that in 2021, the female population is 42 million 252 thousand 172 people and the male population is 42 million 428 thousand 101 people, it is clear that almost half of the population is women. However, more than half of the workforce is made up of men. In this case, it shows us that Turkey should increase the female employment rate for its growth and development. The fact that women living in rural areas are among the disadvantaged groups has made women entrepreneurship in rural areas even more important.

Cooperatives are of great importance for women's entrepreneurship, women's employment and rural development. Cooperatives are important economic development tools in terms of solving poverty and increasing employment in the world. The disadvantaged group most affected by poverty and unemployment is women. Women are trying to overcome this situation with women's cooperatives (Ozdemir and Yilmaz, 2010).

Entrepreneurship in Turkey is affected by many factors such as awareness, education level, social structure, urban and rural differences (Soysal, 2013). Considering women's entrepreneurship, these factors are affected more with the inclusion of gender difference (Arikan, 2008). When it comes to women's entrepreneurship in rural areas, these obstacles stand out even more intensely. The European Union and other developed countries have aimed to eliminate this negative situation by developing policies related to women's entrepreneurship and rural development. The rate of women entrepreneurship has increased with similar policies in Turkey's adaptation process to the European Union. According to the Organization for Economic Cooperation and Development (OECD), women's employment participation rate in Turkey is in the last place among the member countries. While it is 77% in Iceland, 73% in Germany and 59% in the OECD average, this rate is only around 29% in Turkey (OECD, 2021).

In addition to supplying the food needs of societies, the agricultural sector is also the basic requirement of sectors such as industry and tourism. For this reason, in order to realize economic growth and development, the labor force participation rate and welfare level of the population living in rural areas should

increase. Rural development is an important issue that needs to be emphasized in order for economic growth and development to take place in Turkey. In rural development, women's entrepreneurship is an issue that needs to be examined separately. Therefore, in this study, it is aimed to evaluate the current situation of women entrepreneurs living in rural areas, to determine the problems they experience and to offer solutions. In order to better understand the subject, first of all, the concept and scope of rural areas in Turkey and the concept of entrepreneurship will be discussed.

2. The Concept and Scope of Rural Area in Turkey

The Turkish Language Institution defines the rural area as “the place where the production activities are based on agriculture, where agriculture and animal husbandry is intense, where the rural population lives and works”. Another definition of rural area is the regions where the market mechanism that combines production and consumption has not been developed, and the production is made to meet the needs of individuals to a large extent (Tolunay and Akyol, 2006). A different definition is the places where production activities are carried out using natural resources, social life is shaped according to traditions and customs, and technological and cultural innovations take place more slowly and therefore later (Tekeli, 2016). According to the OECD, places with a population density of less than 150 people per square kilometer are defined as rural areas (Soysal, 2013).

According to the 2021 TURKSTAT data, the total population of Turkey is 84 million 680 thousand 273 people. While 78 908 631 of these people live in cities, 5 771 642 live in towns and villages defined as rural areas. According to these data, the ratio of people living in rural areas to the total population is around 6.8%. Table 1 shows the rural and urban population and the percentages of change between 2011-2021. The reason for the rapid decrease in the rural population in 2013 compared to the previous year is the transformation of villages into neighborhoods connected to cities with the metropolitan law enacted. When the table is examined, it is seen that the rural population has decreased over the years. The main reasons for this are the widespread mechanization in agriculture, the decrease in agricultural employment and the decrease in the income obtained from the agricultural sector due to the increase in production costs.

Table 1. Numerical and Percentage Distribution of Turkey's Rural and Urban Population Between 2011-2021

Years	Rural	City	Rural (%)	City (%)
2011	17338563	57385706	23,2	76,8
2012	17178953	58448431	22,7	77,2
2013	6633451	70034413	8,7	91,3
2014	6409722	71286182	8,2	91,8
2015	6217919	72523134	7,9	92,1
2016	6143123	73671748	7,7	92,3
2017	6049393	74761132	7,5	92,5

2018	5115275	76808607	6,2	93,8
2019	6003717	77151280	7,2	92,8
2020	5878321	77736041	7,0	93,0
2021	5771642	78908631	6,8	93,2

Source: TURKSTAT, (2021). For land under permanent meadows and pastures 2001 General Agricultural Censuses, for other Ministry of Agriculture and Forestry

The most distinctive feature of rural areas is that their economy is based on agriculture. The total agricultural area of Turkey is 38 089 thousand hectares. Approximately 14 600 thousand hectares of the total agricultural area consists of meadow and pasture areas (TURKSTAT, 2022). Due to Turkey's geographical location, the agricultural production pattern is quite wide. Being surrounded by the sea on three sides also allows fishing activities to be carried out.

Turkey's total Gross Domestic Product (at buyers' prices) is 1 538 578 051 thousand TRY in 2021 (TURKSTAT, 2022). There are various branches of economic activity in the gross domestic product. The share of agriculture, forestry and fisheries in Gross Domestic Product is 95 619 830 thousand TRY. The largest share belongs to the service sector with 357 112 850 thousand TRY. Figure 1. It shows the distribution of Turkey's Gross Domestic Product by sectors.

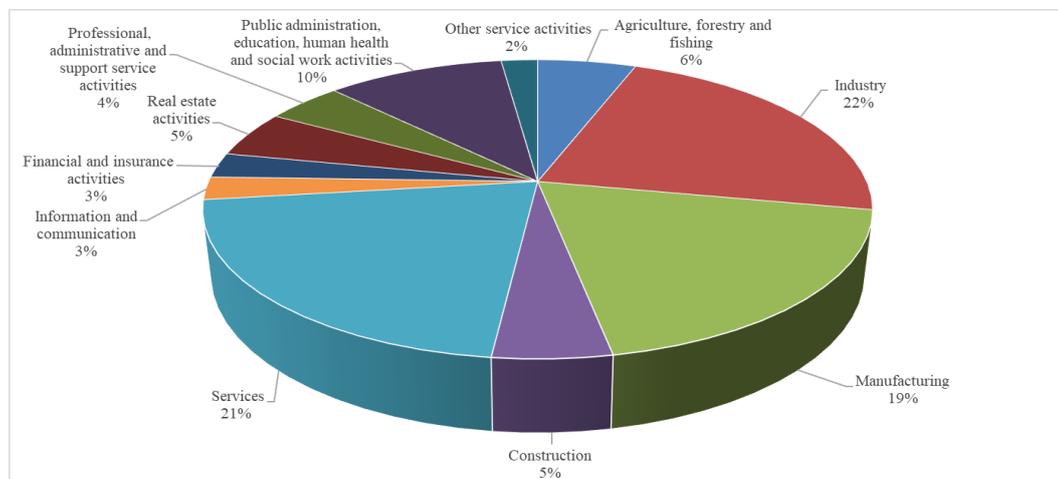


Figure 1. Distribution of Turkey's Gross Domestic Product by Sector
Source: TURKSTAT, (2021). Labour Force Statistics.

In the Household Labor Force Survey of TURKSTAT, new regulations have been introduced in order to comply with the decisions of the 19th Conference of Labor Statisticians (ICLS) of the International Labor Organization (ILO) and the relevant EU regulation, simultaneously with the European Union (EU) countries as of 2021. With the arrangements made, it has been determined that the employment rate in Turkey is 45% and the unemployment rate is 12%. Figure 2 shows the number of people employed by economic activity and gender

in 2020 and 2021. When the data are examined, it is seen that female employment is quite low among all sectors. The reason why women's employment in the agricultural sector lags behind men is the informal employment of women as family workers. From this point of view, while the number of people working in the agricultural sector increased in the previous year, the rate of increase was much lower than in other sectors.

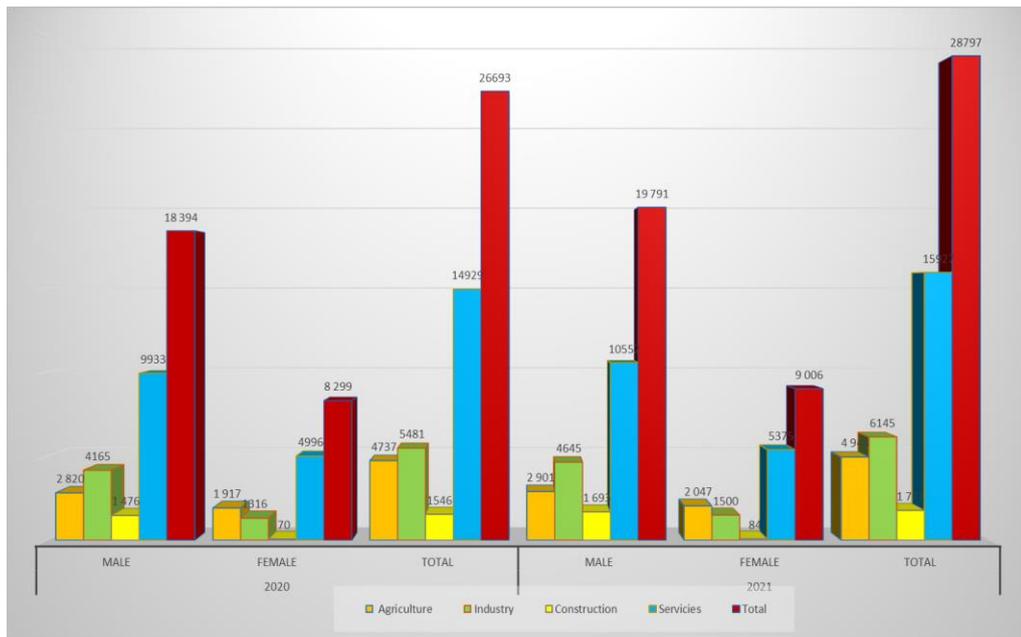


Figure 1. Distribution of Turkey's Gross Domestic Product by Sector
Source: TURKSTAT, (2022). TurkStat, Quarterly Gross Domestic Product, Quarter I: January-March,

In order for the development in rural areas to be sustainable, first of all, agricultural policies should be formed correctly and development plans should be made more functional. While planning, it should not be forgotten that the effective and efficient use of natural resources is also necessary for sustainability.

3. Entrepreneurship and Women Entrepreneurship

An entrepreneur is a person who is the owner or operator of a business, can take risks by discovering new products and production methods with innovative ideas, and contributes to the establishment of supply and demand balance by following the market well (Tyson et al., 1994). Although entrepreneurship is defined in different ways in terms of sectors, it is possible to make a general definition. It is an activity process carried out by people who can create value, are profit-oriented, find new ideas and take risks while implementing these ideas, establish and grow a new business, and market the products they produce (Bird, 1989; Jhonson, 2001; Zhao, 2005).

Basically, entrepreneurship can be grouped under four main headings. These are social entrepreneurship, digital entrepreneurship, senior

entrepreneurship and women's entrepreneurship (Dibek, 2022). Women's entrepreneurship keeps the economy alive in developed societies. It ensures the economic and social emancipation of women in developing societies. It also contributes to the economic growth and development of developing countries.

Social and cultural differences between the genders in society have led to the emergence of the concept of female entrepreneurship (Bingol, 2014). Some studies have revealed that male and female entrepreneurs have fundamentally common characteristics. However, in the comparative study of the characteristics of female and male entrepreneurs conducted by Shmailan in 2016, the different characteristics are listed as follows.

1. They make decisions more difficult than men, they work quality-oriented, they are more conservative against financial risks, they focus on establishing good relations with employees, they operate more in the retail and service sector.
2. They avoid failure more than men, they want more social support when starting a business, they want to have more detailed information about the sector.
3. They are more positive and cautious in terms of motivation.
4. They engage in entrepreneurial activity by taking less capital and less debt.
5. They are intuitive thinkers. Communication skills are stronger. They are more careful and restrained in business growth.
6. They form a smaller circle and this circle usually consists of family and friends.

Through entrepreneurship, women can discover their talents and potential. These women make significant contributions to the development of the regional, national and global economy. Women become entrepreneurs for different reasons. Desire to start a business, earning economic income, social status, contributing to the family budget are some of them. In addition, high school graduate or higher education level women who cannot find a job may prefer to be an entrepreneur in order to integrate into economic and social life (Yilmaz et al., 2012).

One of the main reasons pushing women to become entrepreneurs in Turkey is the effort to reduce the negative effects of macroeconomic conditions on household income. It has been determined that women engage in entrepreneurship in order to contribute to their families, provided that they adhere strictly to their feminine roles (Yilmaz et al., 2010).

4. Women's Entrepreneurship in Rural Areas in Turkey

Women and children living in rural areas in Turkey are in the disadvantaged group. Therefore, women and children are important groups, especially in sustainable rural development. Research on sustainable rural development has revealed that women's entrepreneurship primarily increases the social and economic well-being of these disadvantaged groups (Bakay et al., 2020).

Women's entrepreneurship has emerged in different ways in different parts of the world according to regions. The reasons for the emergence of women's entrepreneurship in rural areas in Turkey can be listed as earning additional

income, contributing to meeting the school needs of children, insufficient education to find a job, and loyalty to their regions (Orhan and Scott, 2001; Aslan and Atabey, 2007; Soysal, 2010).

In rural areas, women mostly work in the agricultural sector. According to 2021 TURSTAT data, the situation of women working in the agricultural sector is given in Figure 4.1. According to the data, the number of paid and salaried women is 196 thousand, the number of employers and self-employed women is 186 thousand and the number of women working as unpaid family workers is 1535 thousand. The fact that women have many workloads in rural areas, such as housework, cooking, childcare, winter food preparation, other than agricultural activities, causes women to get tired more than men. However, women in rural areas have almost no say in decision-making processes (Ozyilmaz, 2016).

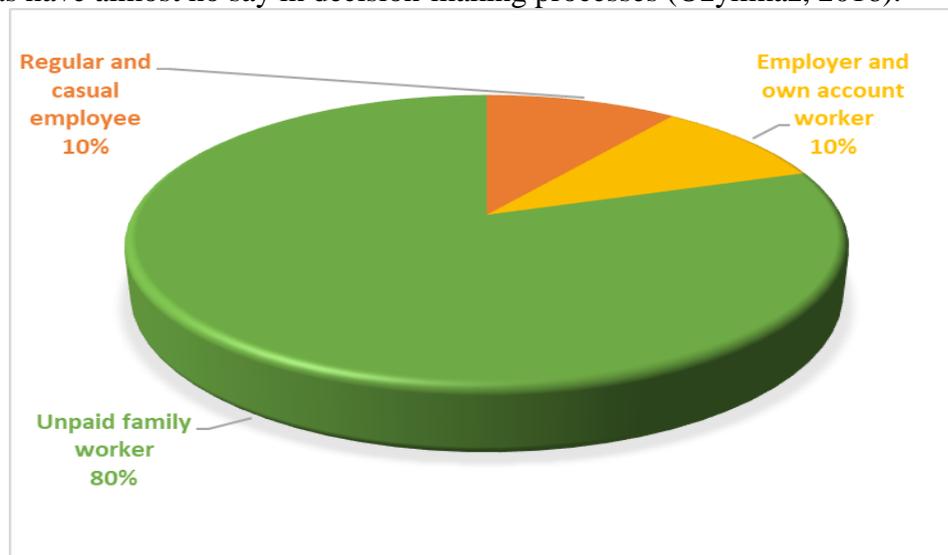


Figure 3. Female employment in agriculture sector by employment status TURKSTAT, (2021). Agricultural Structure (Production, Price, Value) Publication

Most of the women work as unpaid family workers as the agricultural business structure in Turkey is generally small family business. However, with the introduction of organizations supporting women entrepreneurs and the internet into all areas of life, women's entrepreneurship has started to increase in rural areas in recent years. Especially with the existence of social media, women have started to find more place for themselves in economic life (Bayrakci and Kose, 2019). In addition, while social media encourages rural women entrepreneurs, it also enables them to reach distant places and market their products (Kusay, 2017). Turkish Women Entrepreneurs Association (KAGIDER) is one of the leading organizations supporting women entrepreneurs in Turkey. KAGIDER, a non-governmental organization aiming to empower women through entrepreneurship, carries out many projects and activities to strengthen women's position in economic and social life. It also contributes to sustainable rural development by supporting women living in rural areas with the Women Entrepreneurs Development and Acceleration Program in Agriculture (KAGIDER, 2022). Another organization that supports women entrepreneurs in Turkey is the

Foundation for the Evaluation of Women's Work (KEDV). This foundation creates employment opportunities suitable for women's knowledge and skills through economic empowerment programs, vocational training, consultancy and marketing services. In addition to supporting women who are entrepreneurs on their own, it also helps to establish cooperatives (Adman and Bulut, 2007). Small and Medium-Sized Industry Development and Support Administration (KOSGEB) creates employment opportunities for women entrepreneurs by providing grant support and vocational training on machinery, equipment and office expenses, especially to women and disabled entrepreneurs living in rural areas (Cansiz, 2008).

Another important organization that supports women's entrepreneurship in Turkey is Rural Development Agencies. It has a total of 26 agencies in different regions of Turkey. These organizations have two main objectives: to increase competitiveness in agriculture and food sector and to diversify economic activities in rural areas. In line with these purposes, it provides both consultancy services and incentives to many projects (Anonymous, 2022).

As a result of environmental problems, effective use of natural resources and sustainable environmental conditions have become even more important issues today. Therefore, there is a need for eco-friendly economic activities. Activities such as rural tourism, eco-tourism and agricultural tourism are also opportunities for women's entrepreneurship in rural development. In addition, these activities are nature friendly. Entrepreneur women find the opportunity to meet people from different cultures while increasing their welfare level by earning income economically (Pezikoglu, 2012). Agritourism, in particular, provides a positive experience for both hosts and visitors as it provides tourists with the opportunity to work on the farm (Holland et al., 2003).

5. Problems Faced by Female Entrepreneurs in The Rural Area

One of the most fundamental problems faced by women entrepreneurs operating in rural areas is gender-based problems. The most obvious problems are the traditional family structure and the inability of women to have a say in the management processes, especially in rural areas. In addition, the division of business lines into men's and women's jobs is among the important problems faced by women entrepreneurs both in rural areas and in cities (Bakay et al., 2020; Adinolfi et al., 2020).

Most of the problems faced by women entrepreneurs in rural areas stem from their aversion to risk, especially their inexperience in sales and marketing, and the difficulties they encounter while providing financial resources (Mehta and Mehta, 2011).

Another problem faced by rural women while carrying out their entrepreneurial activities is the lack of education. Especially in rural areas, women do not have the same right to education as men. Their self-confidence is not high due to the lack of education (Ozar, 2005). In addition, they have difficulty in keeping up with technological innovations due to lack of education. This situation causes them to lag behind development and change. If technological innovations are followed, it can contribute to rural initiatives (Anoteli et al., 2020).

Women entrepreneurs need financing to bring their business ideas to life. Women entrepreneurs in rural areas cannot provide collateral to financial institutions and often do not have capital. In general, they do not know the legal regulations. They are not brave enough to bring the idea of entrepreneurship to life by solving the financing problem. In this case, it appears as a problem in the process of carrying out entrepreneurial activities (Yilmaz et al., 2019).

Although rural tourism is an opportunity as a rural entrepreneurship activity, it also brings some problems. Incoming tourists teach many new ideas to women entrepreneurs, but they can also cause cultural degeneration and deterioration of the rural fabric. In addition, some of the daily tourists may cause the deterioration of the optimum use of natural resources. On the other hand, since these people do not stay, it can cause the profits of entrepreneurs to decrease significantly (Pezikoglu, 2012).

Another problem that women face in rural entrepreneurship activities is that women take care of children. For this reason, they cannot spare enough time for entrepreneurial activities (Albayrak, 2022). In addition, the fact that all the workload belongs to women, especially in the Black Sea Region and some other rural areas in Turkey, causes women to not find enough time for entrepreneurial activities.

The high number of unregistered women working in the agricultural sector, especially in rural areas, brings with it the fact that women do not have social security. Women without social security also have to live in the shadow of a man.

Being able to market the products produced is another problem for women entrepreneurs. Logistic channels, one of the marketing components, are not sufficiently developed in rural areas. For this reason, women are afraid of not being able to sell the products they produce.

6. Conclusion

In order to develop women's entrepreneurship in rural areas, women and men should have equal education rights. Well-educated women can easily carry out their entrepreneurial activities. With a good education, they can easily solve their financial problems. For this reason, it would be a correct approach to focus on trainings such as entrepreneurship training for women while making rural development plans.

Well-educated men can take more responsibility for household chores and child care. For this reason, emphasis should be given to education for the male population. Thus, women's employment will be increased by allocating more time to entrepreneurship activities. In addition, gender equality will be ensured in social life.

Financial problems are one of the biggest obstacles to women's entrepreneurship. The current situation of institutions that solve the financing problem should be evaluated, deficiencies, if any, should be eliminated and more financial support should be given to women living in rural areas. In this way, the employment level in rural areas will also increase.

Increasing entrepreneurial activities in rural areas will increase the welfare level of both individuals and the region. For this reason, activities such as eco-tourism, rural tourism and agricultural tourism need to be planned better. In order for women entrepreneurs to reach more people, platforms should be created where they can use social media effectively.

It should not be overlooked that the highest number of unregistered workers is in the agricultural sector while creating agricultural policies. For this reason, a new premium payment system should be arranged for women working in the agricultural sector in rural areas. Thus, the number of women in rural areas who have no security for their future will decrease.

The products produced as a result of rural women's entrepreneurship should be easily marketed. Therefore, a good logistics network is required. The increase of women's cooperatives will enable them to increase their production volumes and eliminate marketing problems.

Increasing women's employment in rural areas will ensure that future generations are raised with the right consciousness. Thus, many social problems will be solved. Therefore, governments should increase regulations and practices to increase women's entrepreneurship in rural areas.

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THE IMPACT OF THE COVID-19 PANDEMIC ON THE
LABOR PRODUCTIVITY IN NORTH MACEDONIA

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Abstract

In March 2020, the World Health Organization declared a pandemic. Preventive measures were promptly introduced all over the world including in the Republic of North Macedonia to prevent the spread of the coronavirus. A number of companies reduced or stopped their activities and had to lay off some employees. Many companies have introduced a different way of working, which has reduced interpersonal contact between employees such as work from home. Over time, the economic effects of the pandemic began to manifest themselves in certain sectors of the economy, tourism and gastronomy being the most affected. However, the coronavirus pandemic not only had negative effects, but also had a positive impact on the acceleration of digitalization, as companies had to adapt quickly to issued preventive measures. To do this, they took advantage of the opportunity for employees to work from home and therefore it was necessary to digitize work as much as possible. The recent economic crisis undoubtedly affected the labour productivity in majority of the economic sectors. The main goal of the paper is to analyse the labor productivity in the Republic of North Macedonia with focus on the changes that have occurred in Macedonian companies due to the coronavirus crisis. For this purpose available data from the databases of the State Statistical Office, the National Bank of the Republic of North Macedonia and the Ministry of Labor and Social Policy will be used.

Keywords: Covid-19 pandemic, labour productivity, North Macedonia.

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1. Introduction

"The growth of a nation's productivity is the central factor in raising real wages and living standards," said Paul Samuelson, the father of modern economics and winner of the Nobel Prize in Economics. Another Nobel laureate in economics, Krugman says that "Productivity is not everything, but in the long run, it is almost everything."

Labor productivity is an important labor indicator. All enterprises strive to increase it, because the number of employees, the level and salary fund, the volume of production and the development of society and the level of well-being of the population depend on its level and dynamics. To date, many ways to increase labor productivity have been proposed, and several groups of factors influencing its level have been identified: material-technical; organizational; economic; and socially. All four groups of labor productivity growth factors act in close interrelation, complementing each other. The source of labor productivity growth, which has no limits, is the technical-technological improvement of production under the influence of scientific and technological progress. Over the past few decades, in developed countries, the level of extensive use of labor has more than halved, the intensity of labor has not increased, and productivity has increased several times, which has manifested itself in a significant increase in welfare and the level of consumption of all segments of the working population.

According to data from the World Bank, the Republic of North Macedonia produced 43,883 dollars per employee in 2020. Compared to the countries of the Western Balkans, we are all relatively close according to this indicator. Namely, for the same period, Montenegro produced 50,865 dollars per employee, Bosnia and Herzegovina 47,051 dollars, Serbia 43,874 dollars, and Albania 31,883 dollars per employee. In comparison with other countries near us, a bigger difference is already noticeable, for example, in the same year, Slovenia earned \$79,612 per employee, while Croatia earned \$67,138. Compared to the average of the European Union (\$93,073 per employee), we lag behind almost twice. Germany, as the largest economy in the EU, produced \$100,765 per employee in 2020.

During the pandemic, productivity in the Republic of North Macedonia fell by -4.5 compared to the last ten years before the crisis, which is due to the fall in labor productivity (understandable, considering the closure of entire economic branches due to preventive health measures). For comparison, in other countries of Southeast Europe, the decrease compared to the pre-crisis period is -2.6. Also, while in the region in the post-pandemic period this indicator becomes positive (1.5), which shows that productivity has reached and exceeded the pre-pandemic level, in our country it is still negative, primarily due to the slower recovery of the quantity and quality of labor productivity.

2. Literature review

The COVID-19 crisis has led to what can be considered the most dramatic global recession since World War II. It created an economic shock that has impacted both demand and supply, and curtailed large areas of activity

intermittently over months, as measures on the part of both governments and individual actors were implemented to limit the spread of the virus. The pandemic has also caused a significant increase in uncertainty for an extended period of time, with important consequences for corporate investment and durable goods consumption. The pandemic has affected virtually every firm, in every sector and country in the world. The impacts have been both direct, from the pandemic itself, and indirect, from factors such as the repercussions of economic recession; decrease in travel; changes in consumption behaviour and production modes; impaired movement of individuals; etc (Criscuolo, 2021).

The OECD says that the Covid-19 pandemic has caused one of the worst job crises since the Great Depression. There is a real danger that the crisis will increase poverty and widen inequalities, and the impact will be felt for years to come. Countries must now do all they can to prevent this jobs crisis from turning into a social crisis. The reconstruction of a better and more resilient labor market is an essential investment in the future and future generations.

B. Carnevale and Isabella Hattak (2020) in their study "Employee Adaptation and Well-Being in the Era of Covid-19: Implications for Human Resource Management" say that today's organizations need to remain alert and adaptable to unforeseen events, such as external crises, which create increased insecurity in their workforce and pose immediate threats to the performance and sustainability of organizations. However, with the recent Covid-19 pandemic, organizations suddenly have to navigate the unprecedented and thus find new solutions to the challenges arising in many areas of their operations.

Production disruptions have now reached supply chains around the world. All companies, regardless of size, face serious challenges, especially those in the aviation, tourism and hospitality industries, with the real threat of significant declines in revenue, insolvency and job losses in certain sectors. Maintaining business operations will be especially difficult for small and medium-sized enterprises. Following travel bans, border closures and quarantine measures, many workers are unable to get to their workplace or do their work, which has a domino effect on incomes, especially for informal and temporary workers. Consumers in many economies are unable or unwilling to purchase goods and services. Given the current situation of uncertainty and fear, businesses are likely to postpone investments, purchases of goods, and the hiring and employment of workers (ILO, 2020). According to the European Trade Union Confederation, at least one million people in Europe lost their jobs during the second half of March.

Within-firm productivity growth is benefiting from the acceleration in digital uptake brought about by the pandemic. Containment measures obliged firms to adjust quickly to remote working and establish new channels for sales and customer contact, which had an impact on their working and business arrangements. It can therefore be said that the pandemic has accelerated the trend for digitalisation that had already started well before the crisis.

Survey-based evidence suggests that these sector-specific developments reflect rapid productivity gains from digital adoption, particularly in those firms and sectors that are relatively less technology-intensive (ECB, 2020). Although part of the shift to remote working might reverse over time, some is likely to

persist, at least in some areas, and could potentially open the door to substantial gains in terms of productivity and employee well-being.

Increasing the quality of human capital is extremely important for more sustainable and inclusive economic growth and development, productivity growth, inclusion in the labor market and aging of the population. By definition, human capital represents the amount of education, knowledge, skills, and health that people invest in and accumulate throughout their lives, enabling them to realize their full potential and be productive members of society. Hence, human capital is the most important resource for a country, which combines other factors of production, i.e. physical capital. Investing in human capital affects total future earnings. Research shows that an additional year of schooling increases earnings by 9% annually (Ministerstvo za finansii, 2022).

The quality of the human capital of the Republic of North Macedonia has improved from 0.54 to 0.56 between 2010 and 2020, according to the Human Capital Index of the World Bank. However, this level is also quite low because it means that a child born in North Macedonia today, when he grows up, will use only 56% of his potential productivity. In comparison, a child born in developed economies will reach 80% of their productivity, while the EU average is 0.75, or 75% of potential productivity.

The government in the Republic of North Macedonia adopted a package of economic measures that should preserve the liquidity of the economy and jobs (Ministry of Finance, 2022). The measures were greeted with the approval of some employers' associations and unions, but also with reservations and even criticism from certain experts and unions. The first set of measures included economic measures intended for companies, one of which referred to the granting of interest-free loans to micro, small and medium-sized enterprises, and the other to subsidizing contributions for employees from the sectors affected by the corona virus.

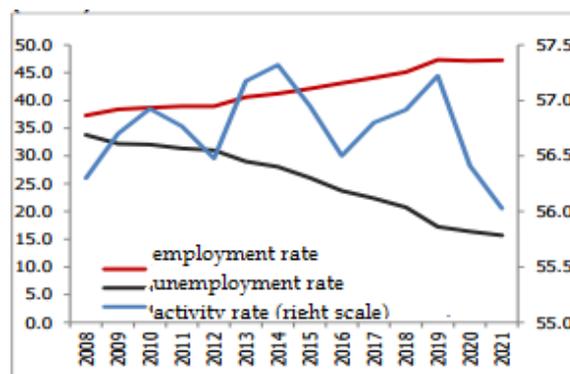
Faced with challenges and risks looming on the horizon, business leaders are rightly concerned about the impact on their employees and their business in the immediate future, as well as the impacts in the more distant future. To respond to crisis and prepare for recovery, experience and best practices learned through past crises can be used, adapting these solutions to the new context. That's why it gathers ideas from leaders in the most affected areas around the world and derives from observing the behavior of their customers and their ecosystem, to offer practical suggestions to serve leaders and their teams to respond to the emergency. Leaders are familiar with crisis management because they are used to overcoming difficulties and unexpected events; their resilience lies in adapting to the new emergency and the experience gained from overcoming past adversities. Even knowing that companies find themselves in different situations depending on the temporal spread of the virus and that the impacts vary both by geographical area and by sector, we can identify several basic qualities that characterize an effective leader, able to conduct his business activity in time of pandemic.

3. Labor productivity in Republic of North Macedonia during a pandemic

In 2021, the labor market saw stabilization and a gradual reduction of the transferable negative effects of the Covid-19 pandemic on this market segment. A decrease in the number of employed persons was observed only in the first quarter, while in the rest of the year the number of employed persons recorded annual growth. These shifts are consistent with the recovery of economic activity after the first pandemic hit in 2020. However, given the prolonged pandemic, the recovery is not yet complete, and the number of employed persons has not yet returned to the pre-pandemic level. In addition, during 2021, the number of the inactive population increased, with which the activity rate recorded a decrease for the second year in a row.

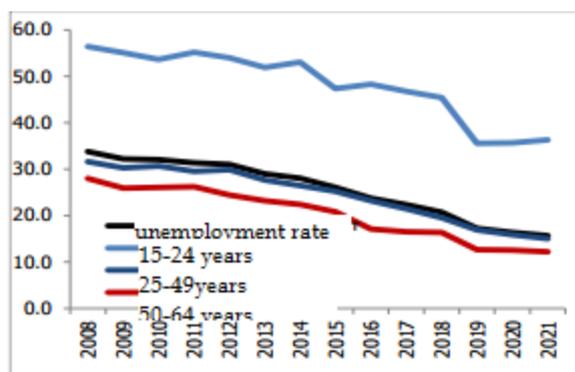
During 2021, several anti-crisis measures were adopted to further mitigate the impact of the crisis on the labor market, and the implementation of active employment measures to support employment growth continued. The number of employed persons during 2021 remained the same, with a simultaneous increase in the employment rate by 0.1 pp, to the level of 47.3% (Chart 1). Analyzed by sector, employment growth was observed in the service sector, there was a decrease in the number of employees in the agriculture and construction sectors, while in industry the number remained unchanged. Looking in more detail by activity, positive movements were observed in several service activities, above all in the activities related to wholesale and retail trade, healthcare, "public administration and defense; mandatory social insurance", as well as information and communications. On the other hand, a further decrease in employment is observed in the activities related to hotels and restaurants, agriculture and "transportation and storage".

Chart 1. Selected labor market indicators (in %)



Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

Chart 2. Unemployment rate by age group (in %)

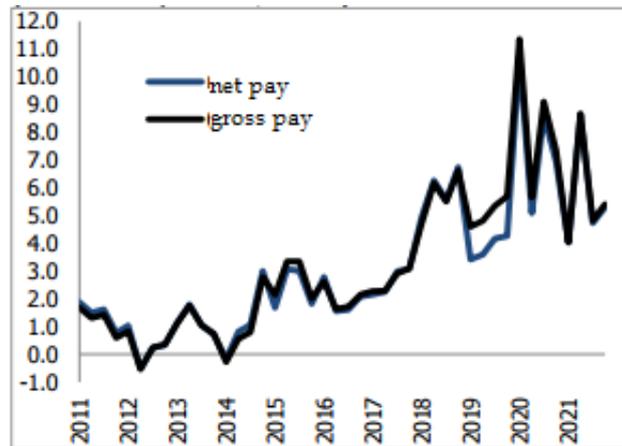


Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

From the aspect of labor supply, in 2021 the total active population recorded a decrease of 0.8%, which, with a simultaneous growth of the inactive population of 0.7%, led to a downward shift in the activity rate (by 0.4 p. p.), which was 56%. Despite the unfavorable movements on the supply side, the stabilization of the labor demand side led to a decrease in the number of unemployed persons by 5.2%, and the unemployment rate was reduced to the historically lowest level of 15.7% (an annual decrease of 0.7 p.p.). At the same time, looking at age groups, the decrease in the total unemployment rate is explained by the lower unemployment among the age groups from 25 to 49 years and from 50 to 64 years, while unemployment in the category of young people from 15 to 24 years saw an increase (Chart 2).

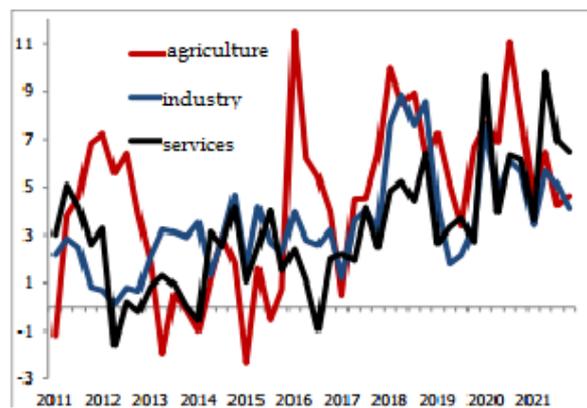
Growth in average wages continued in 2021, in part due to the carryover effect of minimum wage increases in 2020, as well as the regular minimum wage increase from April 2021. Certain structural factors, such as the lack of labor force in certain segments, but also as an effect of the crisis which comes to the fore through the reduction of the number of employees with a salary lower than the average, had an additional influence on the increase of the average salary. Thus, nominal net and gross wages recorded an annual growth of 5.7% (Chart 3), respectively (7.8% and 8.3% respectively, in 2020). An upward correction of net salaries was observed in all sectors of activities, and a particularly high growth was observed in the activities that were initially most affected by the pandemic, as well as the activities that can be connected to the trend of ever greater digitization, further emphasized in pandemic conditions. Thus, the highest growth was observed in the wages of the activities related to "accommodation facilities" (10.9%), "art, entertainment and recreation" (10.7%), other service activities (10.5%), "information and communications" (10.1%). Further growth was also observed in professional and scientific activities (9.4%), mining and quarrying (7.7%), administrative and auxiliary service activities (7.8%), as well as wholesale and retail trade; the repair of motor vehicles and motorcycles (7.4%). Moreover, in conditions of growth in the general level of consumer prices, net and gross salaries recorded a real growth of 2.4%, respectively (Chart 4).

Chart 3. Average gross and net salaries (annual changes, in %)



Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

Chart 4. Average net salaries by sector (annual changes, in %)



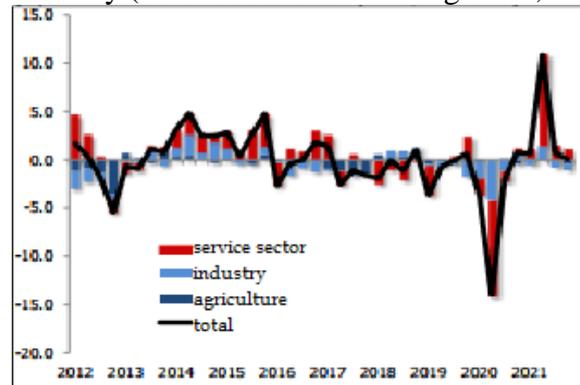
Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

From the point of view of competitiveness indicators, an improvement is observed in 2021 (Chart 5). Productivity and labor costs per unit of product for the entire economy are calculated based on the data from the State Statistics Office for: GDP, the number of employed persons and average gross salaries. The total productivity is calculated as a weighted sum of the calculated productivity at the individual sector level. Within each sector, productivity is calculated as the ratio between the added value in that sector and the number of employed persons.

Namely, during the year, labor productivity increased by 2.8% (after a drop of 4.6% in 2020), as a result of the growth of added value, in conditions of unchanged number of employed persons. Looking by sectors, the positive contribution comes from the service sector, while industry and agriculture have a minimal negative contribution. Consistent with higher wage growth than productivity growth, unit labor costs in 2021 are moderately higher by 2.6% (vs. 13.8% growth in 2020), with a larger increase in service labor costs sector, and to

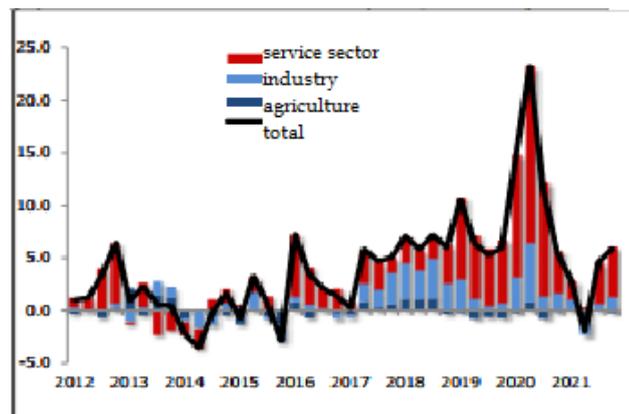
a lesser extent in industry, while a slight decrease in labor costs was observed in agriculture (Chart 6).

Chart 5. Labor productivity (contributions to annual growth, in pp)



Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

Chart 6. Labor costs per product unit (contributions to annual growth, in pp)



Source: State Institute for Statistics and Calculations of the National Bank of the Republic of North Macedonia.

The observed growth in productivity is due to the anti-crisis measures of the Government. The first set of measures included economic measures intended for companies, one of which referred to the granting of interest-free loans to micro, small and medium-sized enterprises, and the other to subsidizing contributions for employees from the sectors affected by the corona virus. For the first measure, 5.7 million euros were provided for loans in the amount of 3 to 30 thousand euros, which provides direct financial support for the liquidity of micro, small and medium-sized enterprises that will be credited due to illiquidity, i.e. companies whose economic activity is affected by the corona virus. The second measure is to support companies in the area of salary payment and contributions in companies from the tourism, transport, catering and other affected companies

for April, May and June 2020 and it is carried because every job must be kept. Apart from these measures, a measure was adopted for the release, ie. non-payment of advance payments from the profit tax for three months: April, May and June for the affected companies, such as tourism, catering and transport, but also other affected sectors (Samardziski, 2020).

With the reduction of the pressures from the health crisis, the gradual return of investor confidence and the improvement of the expectations of business entities, in the coming period growth in the demand for labor force is predicted, stimulated by active measures and programs for employment and the support of domestic and foreign enterprises. to create new jobs. According to the basic macroeconomic scenario, in the period 2022-2026, employment is expected to grow at a higher pace, that is, an average annual growth of 3.6% is projected. The growth of employment in this period is expected to be reflected on the labor supply, which is projected to increase by an average of 1.9% per year. Such movements in the labor market will contribute to the average unemployment rate in 2026 decreasing to 8.6%, while the employment rate will increase to 54.1%. The growth of the average net salary in this period is expected to be 4.6% per year on a nominal basis.

3. Conclusion

The coronavirus pandemic has hit the world and changed the lives of many people around the world overnight. Many industries are literally paralyzed. The economic impact is high and the uncertainty associated with it threatens to threaten the crisis and the drop in performance due to the coronavirus has led many companies to take certain austerity measures. With the pandemic, the golden times of the labor market are coming to an end. Finally, it can be concluded that solving the problem of economic growth and labor productivity for the Macedonian society means increasing the rate of production, revival and growth of the economy, significantly improving the investment climate and providing stability to social relations. In this past period, the problem of labor productivity was raised almost to the level of public policy, but with the beginning of economic reforms, the level of prices and profits took the first place. It is impossible to solve the main macroeconomic problems without increasing labor productivity. Without changes in this area, it is impossible to ensure the recovery of the country's economy. Circumstances require that issues of labor productivity become central to the scale of Macedonian society. Increasing labor productivity provides enterprises and all social production with further development and favorable prospects, and in combination with a competent marketing and sales policy, competitiveness, which is an irreplaceable condition for a market economy. And, ultimately, the increase in labor productivity leads to an increase in the standard of living of the population.

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FINANCING ROMANIAN SMES – CHALLENGES AND
OPPORTUNITIES DURING THE PANDEMIC CRISIS

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Abstract

The small and medium-sized enterprise sector (SMEs) is considered an essential factor for growth and economic development. But despite its economic, social and innovative role, the SME sector is confronting with many vulnerabilities. Access to finance represent one of the main problems facing the SME sector. The new economic context imposed by the pandemic crisis has further highlighted these vulnerabilities and imposed new solutions for resilience and post-crisis recovery.

The paper presents the characteristics and evolutions of the Romanian SMEs, the effects generated by the crisis on small and medium enterprises, the main measures adopted to support and to provide liquidity for SMEs affected by the crisis. This challenge comes both with restrictions and negative aspects, but also with some positive aspects, which can be turned into real opportunities for this sector so important in the economy.

The main sources of finance for the Romanian SME sector as well as the major financing programs and instruments at the national and European level are analyzed in light of the role that financing plays in supporting and developing small and medium-sized enterprises.

The measures adopted (greater financing flexibility, credit guarantees, public and private investment), the financing programs and instruments but also ensuring a stable legal and juridical framework, can contribute to the development of SME sector in Romania, after the pandemic crisis.

Keywords: SMEs, financing, pandemic crisis, Romania

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1. Introduction

The Small and Medium Enterprises (SMEs) sector is considered the engine of the economy and represent an important source of economic growth, job creation, entrepreneurship and innovation, in a modern and dynamic economy.

In an interdependent and integrated economies, the SMEs became an essential component of the economic growth process. SMEs represent an important part of the European economy (99.8% of all enterprises) which played an essential role for the economic development (52% of economic value added) and job creation (64% of employed persons) in 2021 (EC, 2022a).

The SME sector is considered the backbone of the European economy and the support for small business and represents for many years one of the priorities of the European Commission which adopted many supporting measures and programmes for this sector. Despite all of these, one of the main problem the SMEs have to face is the financing access which is related to the ability of SMEs to obtain the most appropriate source of finance for each stage of development. Also, it is related to the supply of equity at all stages of business development as well as of a range of alternative forms of finance (loans, grants, etc.) for businesses; the quality of management; the financial culture and attitude of business owners (Popescu, 2008).

The international financial crisis represents another threat for SMEs financing and development and has highlighted many structural weaknesses in the European economy. The COVID-19 pandemic has affected the SME sector and many employees faced the risk of losing their jobs in the firms struggling to survive. In this context, financial instruments were essential to provide the necessary support to SMEs, thus helping to mitigate the negative economic effects of the coronavirus crisis on EU states (EC, 2021a).

Therefore, all EU Member States adopted measures for softening the impact of the Covid-19 pandemic and the imposed restrictions on business. Most measures have been aimed to help SMEs to maintain employment and get access to finance and there is a necessity for continuous investment, integration of research, innovation and smart fiscal consolidation for the recovery (Kraemer-Eis et al, 2020).

2. Romanian SMEs – an outlook

SMEs from European Union are firms with less than 250 workers and an annual turnover below 50 million Euro or a balance sheet total of less than 43 million Euro. The categories of SMES include micro (less than 10 employees), small firms (10-49 employees) and medium firms (50-249 employees) (EC, 2020).

The sector of small and medium enterprises in Romania recorded a fluctuating evolution in the period 2008-2020. Thus, after the 2008 crisis, there was a decrease of the number of SMEs (the lowest number of companies registered was 450,521 in 2011) but later the number of companies recorded a slightly increasing trend (Figure 1).

Before the Covid 19 crisis, the Romanian small and medium-sized enterprise sector was on an upward trend, with an increased number of SMEs in 2019 (by 6.9%) compared to 2017. This trend was continued in 2020 when was registered an increase by 5.8% of the SMEs number compared to the previous year (NIS, 2021). But, in terms of SMEs number per 1,000 inhabitants, with 29 SMEs per 1,000 inhabitants, Romania is below the EU average (58 SMEs per 1,000 inhabitants in 2019) (EC, 2022a).

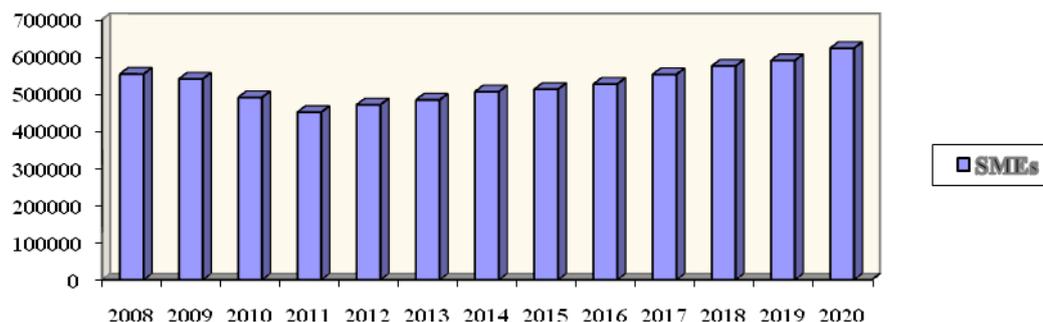


Figure 1. Evolution of the total number of SMEs in Romania, 2008-2020

Source: National Institute of Statistics - INS (2021), Romanian Statistical Yearbook, Time Series

By firm category, the highest increase was recorded by micro-firms (14.55% in 2020 compared to 2017) while small firms registered a slight increase in the period 2017-2019 (2.2%) so that in 2020 their number decreases to 47.9 thousand companies from 49.9 thousand companies in 2019. Medium-sized companies also registered a downward trend, the number decreasing by 5.57% in 2020 compared to the previous year (table 1).

Table 1. Evolution of the number of SMEs in Romania, by firm category

Years	Micro	%	Small	%	Medium sized	%	Total SMEs
2017	494636	89.58%	48835	8.84%	8697	1.58%	552168
2018	517134	89.95%	49148	8.55%	8613	1.50%	574895
2019	531232	90.10%	49921	8.47%	8451	1.43%	589604
2020	566745	91.02%	47905	7.69%	7980	1.28%	622630

Source: National Institute of Statistics - INS (2021), Romanian Statistical Yearbook, Time Series

Considering the structure, the weight is held by micro enterprises (approx. 90% of all SMEs, slightly increasing in 2020). Small firms (about 8.5% of all SMEs in the period 2017-2019) decreased in weight in 2020 (7.69%) and

medium-sized firms (1.5% of all firms) decreased slightly in the period 2017-2020, representing 1.28% of all Romanian SMEs, in 2020.

By activity, the most active SMEs are in the field of industry, trade and services, construction (95.44% from total, in 2020), with a slight upward trend, while in the field of agriculture and insurance finance there was a slight decrease (table 2). However, Romania has an important potential for the development of SMEs in the agricultural sector due to the high percentage of the rural population.

By type of company, there is an orientation of micro companies and small companies towards the field of industry, trade and services, construction.

Table 2. The evolution of SMEs in Romania, by activity

Year	Activity	Micro	Small	Medium
2017	Industry, construction, trade and services	94.97%	93.83%	96.06%
	Agriculture	3.48%	5.05%	2.70%
	Finance and insurance	1.55%	1.12%	1.24%
2018	Industry, construction, trade and services	95.02%	93.94%	96.17%
	Agriculture	3.45%	4.97%	2.54%
	Finance and insurance	1.53%	1.08%	1.29%
2019	Industry, construction, trade and services	95.33%	94.14%	96.15%
	Agriculture	3.21%	4.81%	2.58%
	Finance and insurance	1.46%	1.05%	1.27%
2020	Industry, construction, trade and services	95.54%	94.21%	96.10%
	Agriculture	3.08%	4.78%	2.49%
	Finance and insurance	1.38%	1.00%	1.40%

Source: National Institute of Statistics - INS (2021), Romanian Statistical Yearbook, Time Series

As can be seen from the developments recorded by the SME sector, Romania presents a significant economic and social potential for the development of entrepreneurship and the SME sector. However, SMEs in Romania have specific strengths and weaknesses that require specific measures and policies. That is why, in the last decades, strategic measures, programs and projects have been adopted and implemented at the national level, important public resources being allocated, thus supporting the entrepreneurial spirit and increasing competitiveness on the foreign markets.

3. Romanian SMEs during the pandemic crisis – effects and implications

Data regarding the dynamics of company incorporations are among the tools that can quickly measure the impact of the COVID-19 pandemic on the business environment.

Therefore, as an effect of the pandemic crisis, the business environment in Romania registered a drastic decrease in 2020 compared to the same period of the previous year, the number of start-ups reaching the lowest level in the last 10 years (figure 2). Accordingly with the data from National Trade Register Office (NTRO), the number of new companies decreased by 18.09% in 2020 compared to 2019.

Instead, in 2021, the number of newly established companies increased by 34.89%, growth trends being recorded in almost all fields of activity. The highest growth rate being recorded in the field of production and supply of electricity and thermal energy, gas, hot water (218.28%), agriculture, forestry and fishing (262.41%), public administration and defense (118.18%), information and communications (53.43%), real estate transactions (50.84%). The only field that registered a downward trend in 2021 was the extractive industry (-5.13%) (NTRO, 2022).

The entrepreneurial environment in 2020 recorded decreases compared to 2019, not only in terms of the establishment of new companies, but also in terms of dissolutions and suspensions.

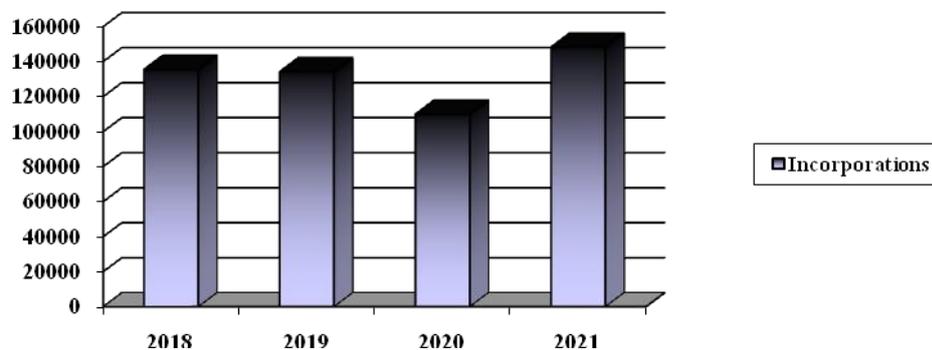


Figure2. Evolution of the total number of incorporations (2018-2021)

Source: National Trade Register Office (NTRO), Incorporation of natural and legal persons <https://www.onrc.ro/index.php/ro/statistici>

Regarding the company dissolutions, their number decreased by 24.09% in 2020 compared to 2019 (figure 3). Accordingly with the data from National Trade Register Office, the areas of activity with the highest recorded dissolution rates were: public administration and defense (100%) while the other fields registered decreases in dissolution rates: extractive industry (-45.45%), water distribution; sanitation, waste management (-36.41%), construction (-35%).

In 2021, the dynamics of company dissolutions recorded an upward trend, reaching 30,369 compared to a number of 24,172 dissolutions in 2020 (figure 3).

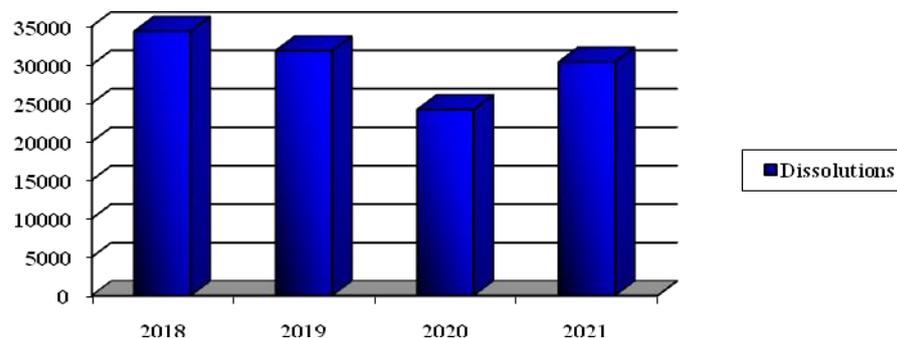


Figure 3. Evolution of firms dissolution in the period 2018-2021

Source: National Trade Register Office (NTRO), Dissolutions: <https://www.onrc.ro/index.php/ro/statistici>

By field of activity, the highest growth rates were recorded in the extractive industry (129.17%), other service activities (33.08%), hotels and restaurants (30.41%), areas that were greatly affected by the pandemic crisis. The only field that recorded a decrease in the number of dissolutions in 2021 was public administration and defense; social insurance from the public system (-83.33%) (NTRO, 2022).

A downward trend is also found in the case of suspensions, their number decreased by 22.14% in 2020 compared to the previous year. Thus, in 2020, a number of 10,866 suspensions were registered, compared to 13,956 in 2019. Similar to the evolution of dissolutions, in 2021 the number of suspensions increased by 19.8% compared to 2020, registering a number of 12,939 suspensions. (NTRO, 2022).

The COVID-19 pandemic has affected the economy and the SME sector, both from a supply and demand point of view. The lack of demand represented a growing problem during the crisis period as a result of decrease of consumption because the necessary restriction measures imposed by the authorities among the population, to prevent the epidemic effects. Structurally, the lack of demand is felt as a particularly pressing problem by the services and utilities sectors, while the construction and real estate sectors are the least affected by the negative demand shocks that have occurred at the aggregate level (BNR, 2020).

On the supply side, almost a quarter of the companies were significantly affected by the reduction in sales (CNIPMMR, 2021). At the sectorial level, companies from the services and utilities sectors felt more the effects of the pandemic on their turnover. Also, many companies have experienced a reduction in labor supply (dismissals, employee health affected by pandemy).

The negative effects of the pandemic were felt also at the level of foreign trade companies and importing companies. In fact, the decrease of exports and imports took place mainly as a result of the decrease of demand for machinery and transport equipment, which has a significant weight in the structure of both trade flows. As new technologies and globalization reduce the importance of economies of scale in many activities, the potential contribution of smaller firms is enhanced.

4. Financing SME sector in Romania - challenges and opportunities

The crisis generated by the pandemic represented a challenge for all fields of the economy but especially for the SME sector. In the emerging situation, companies faced new difficulties or an aggravation of the already existing ones (lack of financing, production costs, lack of skilled labour, technological difficulties, reduced demand, managerial capabilities, low productivity, legislative obstacles). Thus, it was necessary to adopt a set of measures in order to reduce the negative effects of the pandemic on the business of SMEs.

The most common measures taken by companies, at an aggregate level, were the partial reduction of activity, the suspension of activity or technical unemployment. Only a small part of SMEs (8%) used the telework regime for some or all employees, not having the availability or the necessary infrastructure to resort to this solution (BNR, 2020).

At the opposite side, the least popular measures concerned the insolvency or judicial reorganization proceedings, suspending the payment of bank installments or dismissing partially or totally the employees.

The main sources of financing used by companies remained internal, becoming more important in this interval than external resources, mainly due to the substantial advance recorded by profit reinvestment and asset sales. Bank loans remain a much less used option, and the number of companies which used trade loans and bank overdrafts continued to decline over the crisis period.

The share of companies which did not use banking credit remained at a high level (75% in 2020), however this slightly decreased compared to the previous period. The most frequently obstacles for accessing finance from banks are the high level of interest and fees charged, requirements regarding the amount or type of collateral, red tape and contractual clauses (BNR, 2020).

In addition to the negative aspects generated by the pandemic crisis, this challenge also comes with some positive aspects, which can turn into real opportunities for this very important sector in the economy of each country.

Thus, the destabilization of import chains led to an increase in sales of local products. In order to increase sales, a relaunch of production is necessary, correlated with the relaunch of consumption to get out of the crisis. In this context, the state should focus on supporting the value chain to stimulate consumption and on systemic and support investments (Antonescu, 2020).

Relaunching businesses through viable investment plans is another objective that should be pursued by SMEs as long as the banking system is not facing a shortage of capital.

The context of the pandemic crisis and the efforts to find treatment solutions creates the possibility for SMEs active in these fields to promote innovative products and services (medical devices, logistics, etc.). Also, pharmaceutical companies have obtained massive capital investments or substantial share increases on the stock market.

SMEs from technological and IT fields could take advantages as a result of the increasing needs for remote communication, the role of technology components in business and daily activities. There are long-term opportunities for technological companies that provide online services or facilitate the provision of

online services. The crisis had an impact on the way of working at the level of companies but also on consumers, who access more online services.

The work from home system has been implemented by most companies with office activity and this practice will be able to be maintained in the future, which could positively change the dynamics of the work schedule, increasing the productivity of employees and reducing the overcrowding of cities. These aspects will cause an increase in concern for environmental protection and business sustainability with positive consequences on the environment.

In the attempt to support the SME sector during the crisis, a series of actions were promoted, at national and community level, as follows: payment deferrals, non-refundable aid from the state budget, bank loans, national investment funds, European funds.

Thus, a first measure that was taken to support the Romanian SME sector during the medical crisis was the postponement of utility payments (electricity, natural gas, water, telephone and internet services), at the same time as rent payments schedules of buildings for registered and secondary offices. This delay in payment was also completed by the three-month extension of the Declaration on the sole beneficiary (this being suspended during the state of emergency).

A particularly useful tool for companies was the SMEs Invest Romania Program through which state guarantees were granted for the following categories of loans: loans for making investments and loans or credit lines for working capital, at a maximum 80% of the financing value (excluding interest, commissions and bank charges related to the guaranteed loan).

Also, in 2020, programs financed by the state budget were carried out, such as: the Start-up Nation Program (credits for approximately 5,000 SMEs), the Microindustrialization Program 2020 (for industry), the Trade Program 2020 (for commercialization of market services), the Internationalization Program 2020, for companies in fields such as information technology, the food sector, furniture, the textile industry, research, scientific and medical innovation.

Along with the national funding sources, an important role in SMEs financing have the allocations from European funds. A special category is represented by the community funds allocated through the Regional Operational Programme, for micro-enterprises and small/medium-sized companies (urban SMEs and rural medium-sized companies), which can obtain European funds with a value between 200,000 euros and 1 million euros, under certain conditions.

For the period 2021-2027, Romanian SMEs could access the regional operational programs, such as: investments in the digitization of local public services, smart city, smart specialization and technological transfer, innovation, smart parks, SMEs, robotics, digitization (Antonescu, 2020).

Also, the operational program Smart growth and digitization for smart specialization projects at the national level include: internationalization projects, industrial transition, nanotechnologies, robotics, research-development-innovation infrastructure, as well as financial instruments for financing companies.

Another initiative is the first cooperation agreement between the European Investment Bank Group and Deutsche Leasing Romania (February 2021), representing private sector financing of 370 million Euro in order to support small

and medium-sized enterprises affected by the pandemic to benefit from cheaper leasing financing (EC, 2021b).

This initiative, guaranteed by the European Fund for Strategic Investments, aims to increase financing for investments in agriculture and equipment, support borrowers in rural and less developed areas, provide an alternative tool for capital management and is intended to strengthen the resilience of Romanian enterprises against the impact of the COVID-19 pandemic on the economic, social and health sector.

5. Conclusion

In Romania, the SME sector represents 99.7% of the total number of enterprises, it is an important source of job creation (65.8%), innovation and have an important contribution to Romania's economic development (58% of value added) (EC, 2022b).

The unprecedented COVID-19 pandemic crisis caused challenges for the economic, medical and social system in the European countries. For these reasons, it is necessary to manage the economic and social problems and to find solutions to support the sectors affected by the pandemic crisis. One of the sectors heavily affected by the pandemic crisis was the SME sector and the evolutions recorded in 2019 and 2020 by SMEs in Romania highlighted this trend. However, in 2021, SMEs registered an upward trend, they grew by 3.1% in the number of enterprises, 13.3% in value added and 2.6% in employment (EC, 2022b).

The Romanian SMEs presents specific strengths and weaknesses that require specific measures and policies. As new technologies and globalization reduce the importance of economies of scale in many activities, the potential contribution of smaller firms is enhanced. However, many of the traditional problems faced by SMEs in Romania – lack of financing, labor shortages, difficulties in exploiting technology, reduced managerial capabilities, low productivity and legislative obstacles – are exacerbated during the crisis.

In that context, measures are needed not only European and state levels but also at the company level. Thus, the small companies in Romania must improve their managerial skills, informational capacity and technological base. For this, the governments must improve SMEs' access to finance, information infrastructures and international markets.

An essential role is played by public policies and the legislative framework that supports the development of SMEs in Romania through legal and financial regulations that stimulate entrepreneurship and start-ups. It is also important to encourage the establishment of a network of business support structures to help SMEs (clusters, business incubators). But despite certain positive developments in the business environment, related to starting a business and taxes payment, there are still difficulties which can be eliminated.

The developments in the area of access to finance have been mixed. The main sources of financing used by SMEs from Romania remained internal, becoming more important in this interval than external resources, mainly due to the substantial advance recorded by the profit reinvestment and asset sales (BNR, 2020). Bank loans remain a much less used option and the number of companies

opting for trade loans and bank overdrafts continued to decline over the analyzed period. On the positive side, the funding of Romanian start-ups has become more sustainable and diversified (EC, 2022b).

The measures adopted at the national level must also be complemented by the initiatives at the European level to support the SME sector. The European Union can provide financial instruments through financial intermediaries in the member states to support their policies and programs and these take various forms: equity and debt, loan guarantees, venture capital, risk-sharing mechanism.

Financial instruments were essential to provide support to SMEs that needed it most, thus helping to mitigate the negative economic effects of the pandemic crisis. Thus, financial instruments have proven to be very useful, particularly due to the flexibility provided by the Coronavirus Response Investment Initiative and the Coronavirus Response Investment Initiative plus, which have allowed Member States to allocate resources according to the changing needs of beneficiaries. Another essential characteristic of financial instruments is their leverage effect, being able to attract additional investment from investors but represent also a cost-effective enforcement mechanism (EC, 2021a).

Considering the important share that the SME sector has in the Romanian economy and its development potential, this sector should benefit from considerable allocations from national and EU funds, but in parallel with an increase in allocations, certain steps are necessary for the SME sector to have a higher absorption rate in the future along with an adequate framework to support entrepreneurial initiatives and small business development.

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LSTM FORECASTING ON THE MACEDONIAN STOCK
EXCHANGE (MSE)

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Abstract

Stock market forecasting defines a guiding role for investors decision making, therefore it is an important topic of research in academia and finances. With the advancement of artificial intelligence and deep learning, its inclusion into the financial world became imperative. Machine learning algorithms focus on training models over large amounts of available stocks data and making an accurate stock forecast is challenging as the market is volatile. However, it is necessary for reducing risk in market decision-making.

This research attempts to explore the potential of a forecasting model using Long Short-Term Memory (LSTM) in order to predict stock prices for several companies traded on the MSE. This multivariate time series forecasting, focuses on the maximum, minimum, starting and last stock price. We train the model using the monthly reports provided by the MSE for the past 15 years and in order to understand the long term market, we forecast the next several months. The conducted experiments focus on observing the error in order to assess the consistency between the predicted and the actual stock prices, showing the viability of this model for forecasting on the MSE.

Keywords: MSE, LSTM, Forecasting, Machine Learning.

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1. Introduction

Forecasting stock exchange prices has always been a challenge. Having a referent information flow for the future, promises a reduction in risk for any future decision making regarding stock prices. Forecasting stock exchange prices by considering its dynamic factors is an important part of a business investment plan.

With the focus of this paper being the MSE, an exchange with limited research, (Okičić, 2015) investigates Central and Eastern Europe transitional and underdeveloped stock markets and explains the behavior of financial time series whilst focusing on returns and conditional volatility. Related to the investigation from (Kovačić, 2007), where MSE stock return time series displayed stylized facts as volatility, clustering, low starting and slow decaying autocorrelation function of squared returns.

Applications of techniques for stock prices forecasting is a often researched subject; (Shah et al., 2019) they categorized them in statistical, pattern recognition, machine learning sentiment analysis and hybrid. With this research we focus on the machine learning aspect, which in (Soni et al., 2022) furthermore is categorized as traditional machine learning, deep learning and neural networks, time series analysis, graph based approach.

Focusing on the premise of the MSE with its volume of trades and its volatility, we investigate how a deep learning model acts when presented with the limited data from the monthly reports for several companies. A variation of the LSTM model previously trained over daily stock prices (Jain et al., 2018), is now presented with less data for training expecting viable forecasting of stock prices.

2. Related Work

Monthly forecasting is not an unknown research topic (Agung, 2019), which research is well established in sales, climate data and living expenses forecasts. Having the focus on the stock market with its volatility usually follows investigations over the future trend of the stock (Gong & Sun, 2009).

Machine learning techniques for stock price predictions categorize as reinforced, supervised and unsupervised learnings are summarized in (Shah et al., 2019) and deep learning methods in (Soni et al., 2022), one of which are the LSTM networks. The authors of (Lv et al., 2022) introduced their hybrid model based on LSTM and show its improvements over other LSTM models.

2.1 LSTM

LSTM introduced in (Hochreiter & Schmidhuber, 1997) used in the field of deep learning represents a variety of recurrent neural networks (RNNs) which can learn long-term dependencies, usually focused on sequence prediction problems. Analogous to RNN which has both long-term and short-term memory, LSTM has feedback connections; thus, it can process the entire sequence of data, apart from single data points. LSTM driver is a memory cell with its known state. Information can be added to or removed from the cell state in LSTM and is regulated by gates. These gates optionally let the information flow in and out of

the cell, known as input gate, forget gate and output gate. The model in this research is a variation of the LSTM architecture mentioned in (Jain et al., 2018).

3. Methodology

Designing a model for predicting fluctuating stock prices is an interesting and challenging problem. With the increase of data availability, we can extract information from multiple perspectives regarding the stock price, thus offering different approaches to predict it. Although similar machine learning models focus on short-term investment decisions (Soni et al., 2022), we present an alternative approach to understanding the long-term market. With this model we forecast up to several months in the future with the expectation of progressive loss of accuracy and increased error. Focusing only over the monthly values implies less input data, therefore we require an increase on the time-period considered before the forecasting. With those preconditions we focus our forecasting over companies which are offered on the MSE for more than 15 years. We consider their stock prices as time series analysis over the monthly economic variable changes. The technical implementation of the model is based on Keras v2.9.0 (Chollet, 2015) and Tensorflow v2.9.1 (TensorFlow Developers, 2022) using python as programming language.

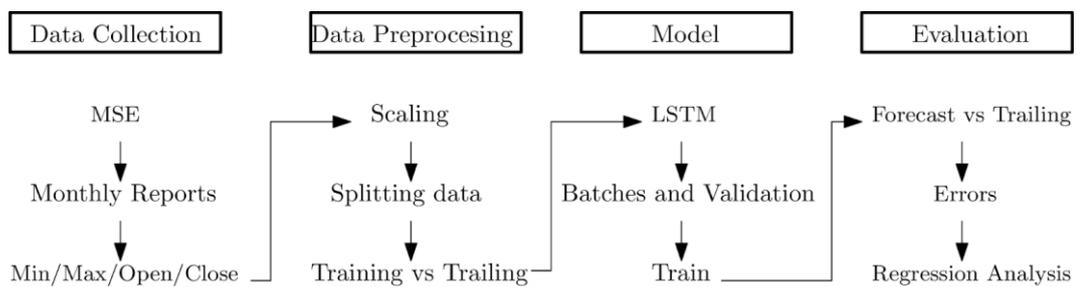


Figure 1. Method flow-chart

As depicted in (Figure 1) initially we fetch the monthly reports from MSE considering the maximum, minimum, opening and closing price as the input data for the financial multivariate time-series. With an initial observation over the descriptive statistics including Augmented Dickey–Fuller (ADF) test we check the stationarity of the time-series.

After the extraction of data from the monthly reports, we linearly transform the “Max”, “Min”, “Open“ and “Close” values using a standard scaler. To evaluate our model, we separate the data between training and trailing data, with the intent for the trailing data to represent the comparison we forecast using our model. Therefore, when we want to forecast n -months we evaluate and measure our model over those trailing n -months, thus allowing for calculations and comparisons against the estimations. Following the idea of mini-batches as frames in a movie (Khodabakhsh et al., 2020), we reshape the training data considering every three months of data to predict the forth.

The LSTM is based on the (Jain et al., 2018) architecture visualized with (Figure 2) using the same activation function - rectified linear unit (ReLU), same

loss function - mean squared error (MSE) and different optimizer - stochastic gradient descent (SGE). To prevent overfitting, we use the regularization method Dropout to ignore some weight updates and activation while training the network. Ending in two dense layers which allow for deep connection to the preceding layer focusing on the multivariate output of the network.

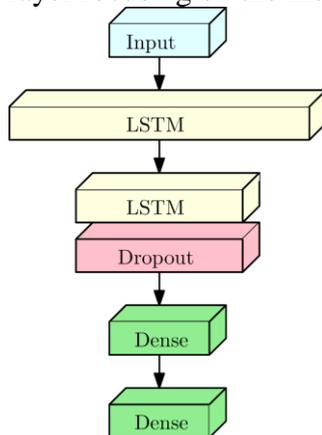


Figure2. LSTM Architecture (Jain et al., 2018)

By fractionating the input data to enable for validation split, we allow for the model to train over one partition and validate against the other. With each propagation through the network we consider mini-batches. Training of the model runs over many epochs considering minimizing training loss and validation loss.

The forecasted output focuses only on what would be the next value in the time-series which in our case is the next month. Therefore, we consider multiple steps in the future using an iterative-based method, with the output of each previous step as one of the inputs for the next step. The main disadvantage of this method is that the error accumulates with each successive step later to a very large number, as noted in (Yunpeng et al., 2017).

We evaluate the proposed model using the forecasted values compared with the trailing real values for all variables together, by calculating the errors as in (Lv et al., 2022). With p_t as predicted, y_t as real and \bar{y} as average of the real values for the forecasted n -months. We choose following statistics to assess the consistency and deviation between predicted and observed stock values. Equation (1) Mean Absolute Error (MAE) measures the average magnitude of errors in the forecasted set. Equation (2) Root / Mean Square Error (RMSE/MSE) is a quadratic scoring rule that also measures the average magnitude of the error. Equation (3) Mean Absolute Percentage Error (MAPE) measures the percentage error of the forecast in relation to the real values. Equation (4) R-squared (R^2) is a statistical measure in a regression model that determines the proportion of variance in the dependent variable that can be explained by the independent variable, with higher value usually meaning higher prediction accuracy.

$$MAE = \frac{1}{n} \sum_{t=1}^n |p_t - y_t| \quad (1)$$

$$RMSE = \sqrt{\frac{1}{n} \sum_{t=1}^n (p_t - y_t)^2} \quad (2)$$

$$MAPE = \frac{1}{n} \sum_{t=1}^n \left| \frac{p_t - y_t}{y_t} \right| \times 100 \quad (3)$$

$$R^2 = 1 - \frac{\sum_{t=1}^n (p_t - y_t)^2}{\sum_{t=1}^n (p_t - \bar{y})^2} \quad (4)$$

By conducting a linear regression with regression line $y=ax+b$, we assess the correlation between the real and predicted values for all variable's min, max, open and close stock prices. The standard error (SE), p -value and t -value are used to quantify the relationship of the regression analysis. With n -months considered, we observe the slope a with expectation of low SE for a , p under the standard cutoff of 0.05 and high t for a .

4. Experimental Results and Discussions

In this section, we present the forecasting ability of the model for the MSE datasets, with specific model parameter settings including the metrics, forecasted results, errors and analysis.

4.1 Datasets

The dataset is collected from MSE for several companies: KMB, ALK, GRNT and MPT. These companies are present in the MSE monthly reports in the range from 01-2006 to 06-2022. We consider the statistical analysis of the opening price of each company with the count, average, maximum, minimum, standard deviation and ADF test results found in (Table 1). We can see a large gap between minimum and maximum and a large standard deviation, indicating that the opening values present good volatility within the research range. In the ADF test for KMB and ALK p -values are greater than significant value 0.05. Thus, the series is non-stationary and volatile. GRNT and MPT exhibit the opposite characteristic.

Table 1. Descriptive statistics of the opening stock price

Company	count	mean	min	max	std	ADF*
KMB	198	4374.262	1700	12800	2555.358	0.996
ALK	198	7150.914	3000	18849	3906.562	0.951
GRNT	198	795.590	263	2717	452.281	0.040
MPT	198	43301.348	12000	173000	29958.697	0.047

* $p > 0.05$

4.2 Model Parameters and Metrics

To build the LSTM network we use Keras (Chollet, 2015) and its sequential model structure and train it with the model parameters listed in (Table 2).

In (Figure 4) the plot represents the number of epochs, the training loss, validation loss and accuracy. With each epoch, the training models are modified over time with the intent to minimize the loss with each successive batch. The training loss is a metric used to assess how a learning model fits the training data, and the validation loss is a metric used to assess the performance of the model on the validation set. Here we observe that the validation loss and training loss decrease, and their difference tends to minimize with each successive epoch. However, KMB and ALK margins are lower and have some overfitting, compared to MPT and GRNT larger margins and some underfitting. For KMB and ALK the training loss is larger than the validation loss, and opposite for GRNT and MPT.

Table 2. Parameter details for the model

Parameter	Explanation	Values
LSTM layers	Number nodes of first and second layer	128,32
Dropout rate	Ignore 30% updates of nodes	0.300
Dense	Reduce the dimensions	16,4
Forecast shape	Monthly input data structure for training vs forecast	3 vs 1
n-months	How many months in the future we want to forecast	1,3,6
Batch size	Pass through the network at one time	4
Optimizer	Adjuster algorithm for weight updates	SGD
Loss function	Goal function to minimize the loss	MSE
Activation	How the weighted input transforms into output	ReLU
Validation split	Split the series training vs prediction	0.300
Epochs	Number of trainings	100

Here, for the accuracy we observe that the model vaguely increases its and remains within the 20%-45% range. Thus, making this model less accurate than the ones examined in (Soni et al., 2022) with more than 50% accuracy. Suspecting of possible improvement if we introduce more input training data. As we are focusing on monthly reports that would mean to increasing the time range. However, MSE's earliest monthly data available is from 2002 onwards compared to our examination since 2006 onwards.

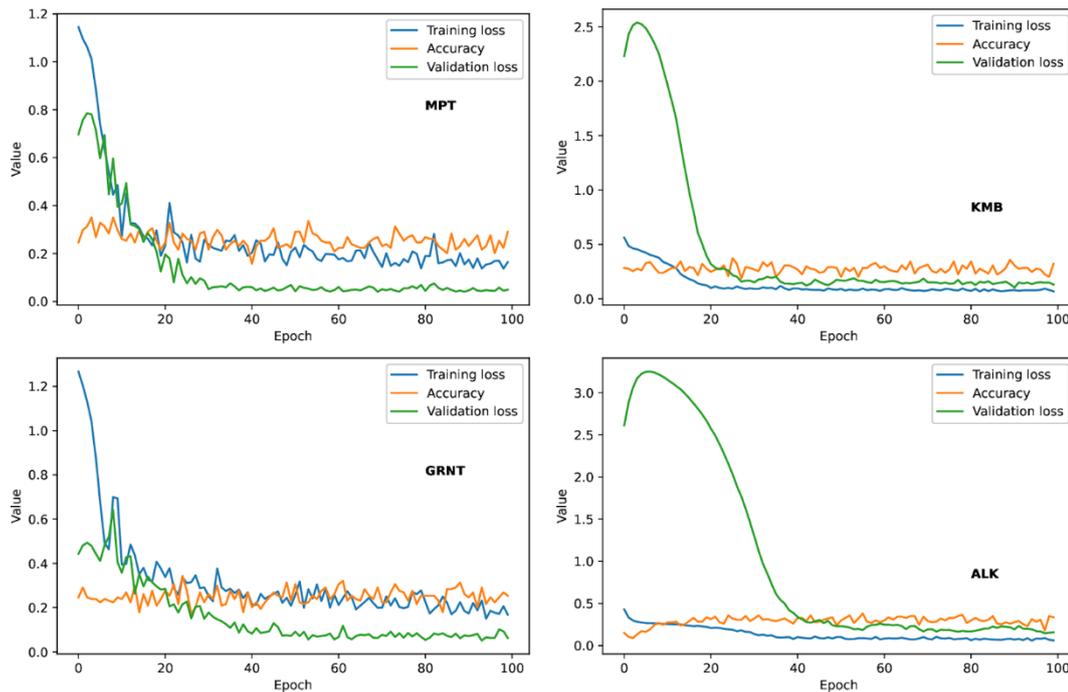


Figure 4. Training loss, validation loss and accuracy for the 3-months prediction model

4.4 Forecast Results and Errors

As demonstrated in (Figure 5 and Figure 6) focusing on the forecasted interval 3 or 6 months, we verify the consistency between the real and the predicted values. We observe a similar scenario as before where KMB and ALK show closer relation between the forecasted and the real values compared to MPT and GRNT considering their volatility, hence we notice their predictions span further away from the real values. Similarly, with the observation over the trend of the stock, for KMB and ALK the model yields expected trend compared to MPT and GRNT.

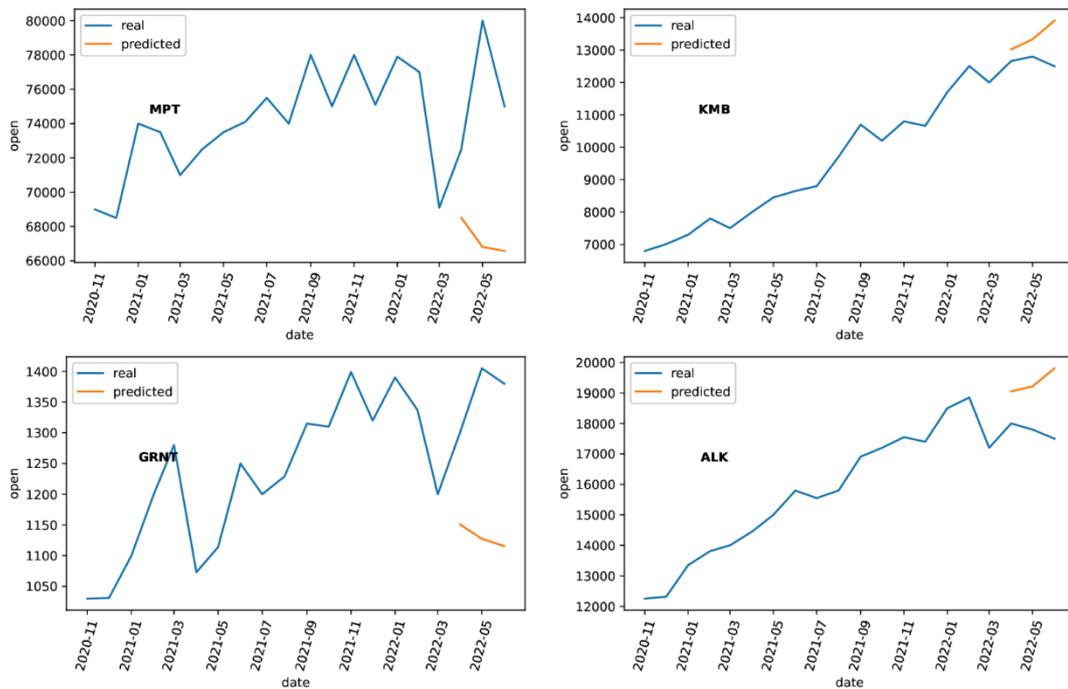


Figure 5. Opening price 3-months prediction

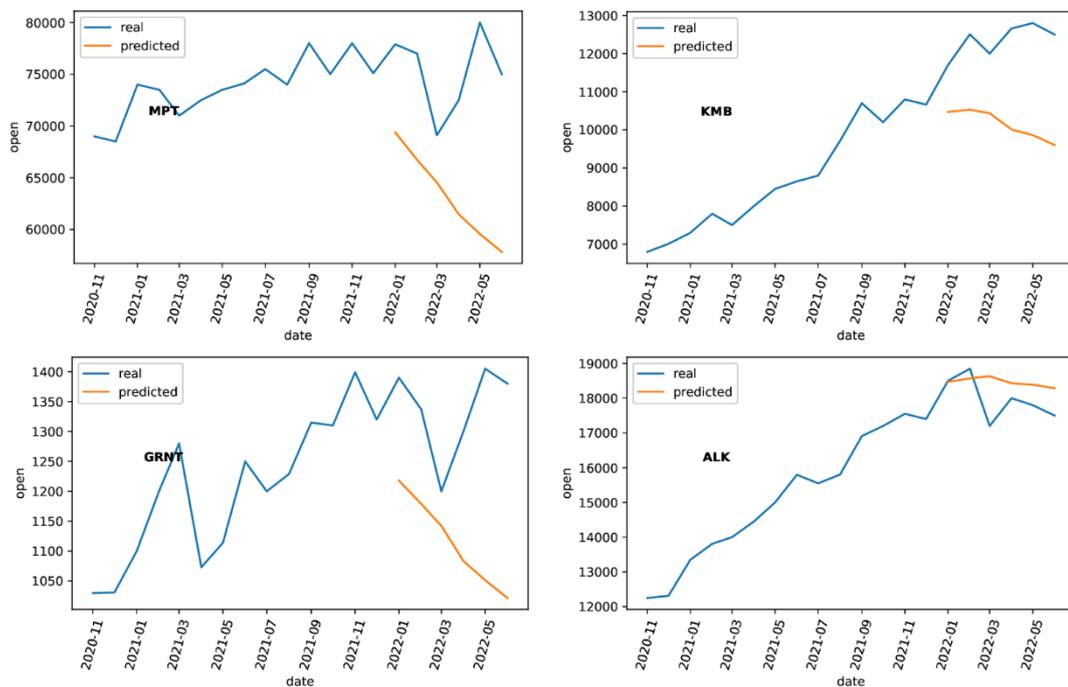


Figure 6. Opening price 6-months prediction

We calculate the errors from the forecasted against the trailing values for all variables combined. From (Table 3 and Table 4) we observe that with the increase of forecasted n -months we get an increase of errors for each company, except for GRNT and ALK previously with affinities towards separate groupings. Common interpretation of R^2 is how well the regression model explains observed

data. The quality of the statistical measure depends on many factors, such as the nature of the variables employed in the model, the units of measure of the variables, and the applied data transformation. A low R^2 value is generally an unwanted sign for forecasting models. Compared to the daily prediction models in (Lv et al., 2022) which tend towards 1 for R^2 , our model resulted with low-mid values, thus its usage in terms of practical application as a forecasting model are questionable.

Table 3. 3-months forecasting arguments

Company	MAE	MSE	RMSE	MAPE %	R^2
KMB	955.055	1478547.204	1215.955	7.726	0.360
ALK	1903.621	4962589.673	2227.687	10.749	0.362
GRNT	250.008	65678.229	256.277	18.238	0.516
MPT	7823.027	75957272.567	8715.346	10.340	0.359

Table 4. 6-months forecasting arguments

Company	MAE	MSE	RMSE	MAPE %	R^2
KMB	2206.231	5117299.695	2262.144	17.946	0.463
ALK	1582.128	3136657.076	1771.061	8.938	0.521
GRNT	224.053	63151.615	251.299	16.579	0.460
MPT	11495.724	160620802.325	12673.626	15.339	0.231

4.5 Regression Analysis

With the observation over the slope for all companies in (Table 5 and Table 6) regression analysis with p lower than the standard cutoff of 0.05, relatively high standard error and positive t . Similarly, observing the plots in (Figure 7 and Figure 8) the points are scattered unevenly with low tendency towards the diagonal. In addition, observing the *min* and *max* values on the real and predicted axis, and their relative difference we expect larger error for the forecast. Therefore, the regression analysis does not yield a practically applicable forecasting model.

Table 5. 3-months forecast regression results

Company	Parameter	Estimation	SE	t	p
KMB	a	0.314	0.133	2.374	0.039
	b	8176.079	1766.218	4.629	0.001
ALK	a	0.171	0.072	2.386	0.038
	b	14294.943	1372.329	10.417	0.000
GRNT	a	0.455	0.140	3.266	0.008
	b	861.711	157.201	5.482	0.000
MPT	a	0.450	0.190	2.371	0.039
	b	45029.979	12884.822	3.495	0.006

Table 6. 6-months forecast regression results

Company	Parameter	Estimation	SE	<i>t</i>	<i>p</i>
KMB	<i>a</i>	0.595	0.137	4.359	0.000
	<i>b</i>	6279.168	1381.053	4.547	0.000
ALK	<i>a</i>	0.252	0.051	4.901	0.000
	<i>b</i>	13373.590	907.525	14.736	0.000
GRNT	<i>a</i>	0.135	0.154	0.884	0.386
	<i>b</i>	1185.212	171.502	6.911	0.000
MPT	<i>a</i>	0.309	0.120	2.571	0.017
	<i>b</i>	55200.678	7656.972	7.209	0.000

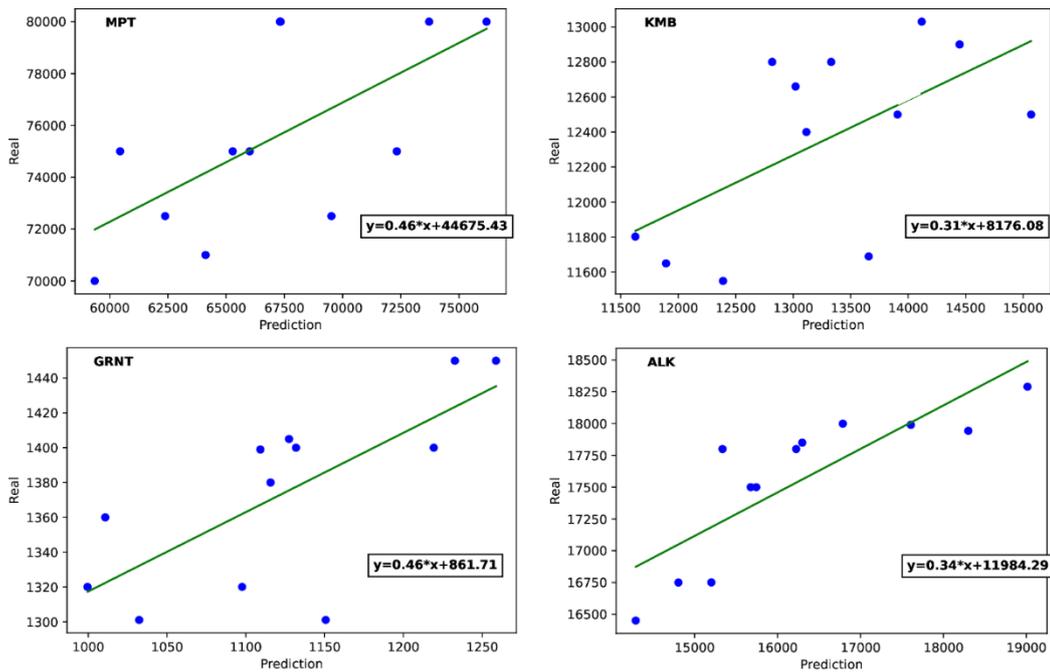


Figure 7. Linear regression analysis 3-months

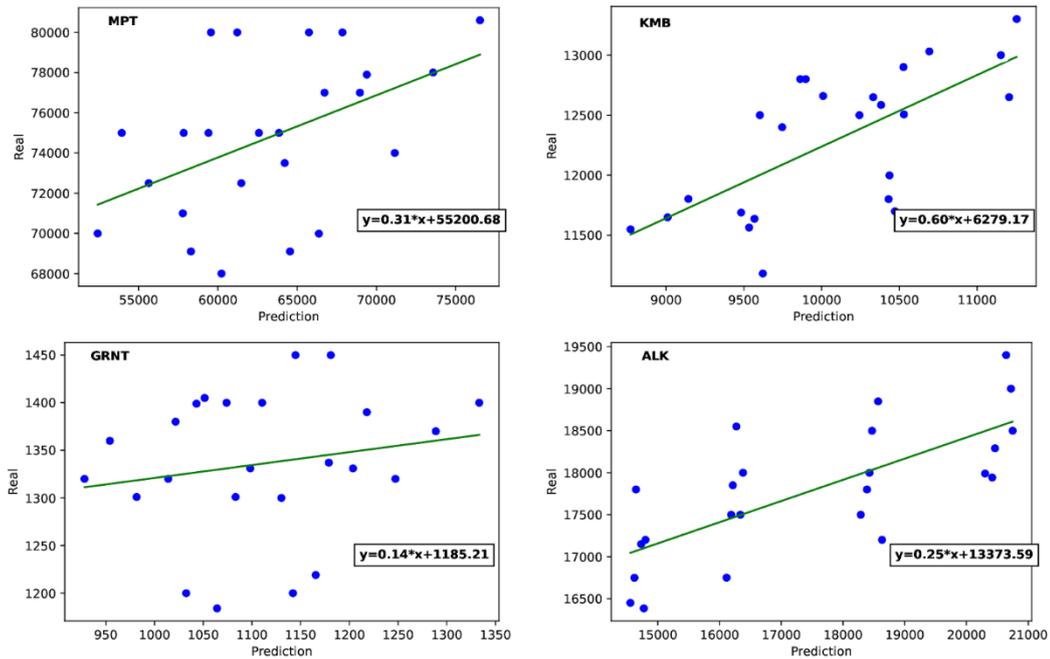


Figure 8. Linear regression analysis 6-months

5. Conclusion

In some financial markets, especially where volatility is often occurring, a prediction model, even a deep learning model, has limited forecasting ability. Considering the empirical evidence and the limitations of input data as we only focus over the monthly reports indirectly inhibiting the model. Training with vast amounts of data is preferable for any deep learning model. Thus, our model showed signs of some overfitting and some underfitting depending on the companies and training chosen. From the results it is evident that this model can provide useful forecasts for specific companies with specific volatility. However, is not recommended for making investments over the resulting data. The linear regression analysis verified that focusing over a shorter period of 3-months offers better forecasts compared to the 6-months. Therefore, such approach does not yield a practical application forecasting model for every company at MSE.

Future research can consider the daily and weekly reports from the MSE, with the adjustment of the number of forecasted steps. Such forecasting approach will input more training data in investigating the effect over the accuracy and error.

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EVALUATION OF LEGAL FRAMEWORK OF
FUNCTIONAL FOODS IN DIFFERENT COUNTRIES:
A LITERATURE REVIEW

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Abstract

The main purpose of this study is to define the functional food market in different countries and to evaluate the official regulations regarding the labelling, promotion and advertisement of functional foods. This study is based on previously reported literature studies. Functional foods have different legal approaches in different countries. This study was conducted in order to evaluate the current status of the legal approach to functional foods in Türkiye and to make recommendations to improve it by reviewing the implementations in different countries around the World. The literature review and in-depth analysis of current health claims and functional food legislation of different countries within the scope of this study showed that an adequate regulatory framework is necessary for the food industry to invest in new product technology. As a result, it is noteworthy that countries with a long-established framework for functional foods and health claims are positioned as market leaders in this field.

Keywords: Functional Food, Health Claim, Foods with Health Claims, Foods for Specific Health Use

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1. Introduction

Although there is no single generally agreed-upon definition of functional foods, they are considered to be in the gray area between food and medicine. There are different definitions made by different researchers. Functional foods are defined as the foods used to prevent diseases when the disease has just started, not the ones that treat the disease after it has emerged and progressed (Arai, 1996); the foods that are similar to conventional foods in appearance but that have been modified to meet basic nutritional needs as well as providing a specific health benefit (Boudreau et al., 2000); the nutrients or nutritional components that provide additional benefits apart from basic nutrition (Edge & Rahavi, 2011); the foods in the form of conventional foods- not in the form of pills or capsules- that have a positive effect on one or more functions of the body or that reduce the risk of a disease, apart from the standard nutritional needs of the person (Aggett et al., 1999).

When the common aspects of the definitions are considered, it is possible to define functional foods as foods that are not in the form of pills or capsules, but in the form of conventional food, that have an additional function beside of meeting the function of nutrient need, and that have been modified or fortified with certain ingredients to reduce the risk of a disease or provide an additional benefit to the body.

The aim of this study is to evaluate the current status of the legal approach to functional foods in Türkiye and to make recommendations to improve it by reviewing the implementations in different countries around the World.

2. Comparative Analyses of Legal Framework on Functional Foods

Japan is the country where the first research on functional foods started. In Japan, researching the nutritional values of foods has attracted the attention of not only the people interested in science but also the local people. Scientific studies on the nutritional values and qualities of food have started with the end of the World War II as Japan started to recover with the end of food shortages and with the high-speed economic growth. With the 1980s, a social awareness began in Japanese society to prevent nutritional and lifestyle-related disorders. So, food science studies in Japan gained a serious speed. In 1984, the first national functional food project was carried out in Japan with the encouragement of the Ministry of Education, Science and Culture (Arai et al., 2001).

With the law enacted in 1991, the commercial existence of the functional foods was allowed and the concept of FOSHU, which is an abbreviation of the phrase Foods for Specific Health Use, and its controlled use on these products was legally accepted. These foods bear a special sign that they are approved by the Ministry of Health. At the same time, along with a statement that draws attention to the fact that these foods are FOSHU, the health benefits, how it is recommended to be used and recommendations to consumers are also found on the product (Farr, 1997). Although the sale of functional foods in Japan is not subject to approval, Ministry of Health approval is required for health claims on the product (Swinbanks & O'Brien, 1993). The licensing of a food as FOSHU can

only happen after passing a rather tedious approval system. Companies are required to make an application stating that the food product they produce carries or meets the nine separate conditions defined. Among these conditions, there are factors such as whether the health benefit of the food and its components is medical or nutritional, the food and its components are safe based on scientifically supported data, and the product is in the conventional food form. These regulations made by Japan have also affected the regulations of other countries in the world about functional foods. Sweden is the first country to work with the food industry to set the rules for foods with health claims in 1990 (Landström, 2008).

In Japan, apart from FOSHU, there are also foods with a nutritional function claim called FNFC, which stands for Foods with Nutrient Function Claims. 12 vitamins and 5 minerals that are allowed to be added to these foods have been identified (Nagata & Yamada, 2008).

Japan's nutritional function declaration system is fairly straight forward. It is grouped under 4 categories; "rich in..., ...source, low and does not include..." (Malla et al., 2013).

When the legal practices of different countries around the world on functional foods are considered, the European Union implemented the "Functional Food Science in Europe" projects (FUFOSA and PASSCLAIM) in 1996. In the European Union, there are still limitations of declarations of legal health claims on product labels. The legal framework for health claims was established in Europe in 2007. In the European Union, on July 1, 2007, the regulation on foods with nutrition and health claims, with the name "Nutrition and Health Claims Regulation" (EC. No. 1924/2006 NHCR) went in effect. This regulation has stipulated the conditions that; in order to make a health claim for a food product, it must be supported by scientific evidence and be easily understood by a standard consumer. In addition, all statements that are allowed and not allowed are expressed in this regulation (European Commission, 2006; Khedkar et al., 2016). Apart from this, functional foods must also comply with other laws related to food. Regulation 1924/2006 specifies nutritional supplements allowed to be added to foods and health claims based on scientific evidence. Regulation 258/97, on the other hand, includes regulations on new foods and their components. Foods referred to as "new foods" are defined as foods or food ingredients with modified primary molecular structures, foods containing or completely removed from certain microorganisms, foods containing or completely removed from certain plant or food ingredients and the foods having gone through a novel production process making them isolated from the undesirable content. As to whether a food or food ingredient is novel food, it is checked whether the food or ingredient was put into use before 15 May 1997 (Coppens & Pettmann, 2014).

European Food Safety Authority (EFSA) did not find the scientific evidence presented on the effects of probiotics on human health sufficient, and as of 14 December 2012, banned the presence of the probiotic expression on the food products put on the market. This prohibition is only about the presence of the expression of the relevant ingredient on the product, not its addition to the product. (YLFA International, 2012).

There is no legal definition of functional foods in Germany. If functional foods are included in the food group evaluated within the scope of the law defined as "Novel Foods", the functional foods in question must go through the European Union approval process for this type of food (German Federal Institute for Risk Assessment, 2017; Gruenwald & Wobst, 2005).

The Spanish Ministry of Health signed an agreement which includes health claims, with the Spanish Food and Beverage Manufacturers Federation on 20 March 1998. This agreement is within the scope of the law covering the labeling and promotion of related foods and brings a regulation to health claims. Accordingly, the health effects to be declared must be factual and based on scientific data (Ottaway, 2005).

Functional foods have no legal definition in the United States and are not treated as a separate product category. In order for a food with a health claim to be placed on the market in the United States, it is required to be approved by the USFDA (Kwak & Jukes, 2001). The Nutrition Labeling and Education Act (NLEA) was enacted in 1990. This law allows health claims that foods reduce the risks of certain diseases. The US Food and Drug Administration (FDA) requests scientific evidence with very stringent standards before approving any health claim in food (Clydesdale et al., 2004). With the legal regulation made in the United States, the requirement for health claims to comply only with FDA regulations has been softened, and it is possible to approve health claims by seeking the condition of being in compliance with the authorization statements put into effect by other United States institutions with public health responsibilities, and finally having approval from the FDA. If FDA approval is not available, the health claim is not allowed on the label (Clydesdale et al., 2004). Rather than listing ingredients that are allowed or not allowed to be added to foods, the USA uses the GRAS (Generally Recognized as Safe) system. GRAS experts decide whether the functional ingredient is GRAS by examining test data, exposure or use data, manufacturing data and specifications on whether functional ingredients are safe to use. More than 3,000 items have been approved in this way (Burdock et al., 2006).

In 1995, the British Ministry of Agriculture published a report to determine the requirements for functional foods and health claims. In 1997, the "Joint Health Claims Initiative (JHCI)" was established. JHCI has established a draft bill. Here the health claims are divided into two. These are referred to as generic statements and novel statements. While the generic statements are statements generally accepted and based on scientific evidence, novel statements are statements based on scientific evidence by complying with the rules determined by law (Ottaway, 2005). Apart from these factors, UK complies with the regulations published on the subject by the European Union.

By 2005 Chinese Ministry of Health has included functional foods, which are defined as foods with special health effects but not having therapeutic effects, in the responsibility of the Food and Drug Administration. China did not only include the food group in the concept of functional food, but also included nutritional supplements within. Various scientific tests are required by the Food and Drug Administration for each functional food. As of May 2007, the number of approved functional food products in China is 8700 (Yang, 2008).

Mexico updated its standards regarding the information that can be found on the labels of packaged foods in 2010, and made an update regarding the absence of statements that might mislead customers or cause confusion in the meaning of the customers. According to the new regulation, informative factors such as allergen contents and nutritional values of foods will be included on the labels. The terms of the supplements allowed on the labels may only be the ones approved by the Ministry of Health for use in food and beverages. Although statements that a product supplements iron and contains low fat are allowed on product labels, statements that the product in question can reduce the risk of any disease are not tolerated (Chavez, 2010).

The only Latin American country with detailed legislation on functional foods is Brazil. In Brazil, it is not allowed to go beyond the state's predetermined health declarations. In this way, it is tried to prevent consumers from being misled (Toledo & Lajolo, 2008). The National Health Surveillance Board is responsible for issuing approvals for the production of food products. Various scientific test results of the food product and articles published in scientific journals are required for approval. In the process after the approval, there should be no difference or inconsistency between the advertisements about the product and the statements on the label (Bruha, 2015).

In Indonesia, functional foods are defined as processed foods that have different functions apart from their basic function. Content consisting of 15 groups has been approved as functional content in Indonesia. There is no legal problem in marketing functional foods like traditional foods. There is a nutritional value table requirement on the labels of foods with any health claim (Zawistowsky, 2014).

Australia defines medicinal products containing herbs, vitamins and minerals as complementary medicines (CMs). These types of products are grouped as drugs under the "Therapeutic Products Act". The law lists 14 supplements that can be added to the product. Since the vast majority of complementary medicines are not subject to strict control, they raise suspicion that they do not meet the desired requirements (Ghosh, 2014). First of all, it is necessary to decide whether the product is a therapeutic product or a functional food. In Australia and in New Zealand, the Ministerial Council for Food Legislation has set policy guidelines for foods with nutrition and health claims. The conditions to be complied with in order to make a health claim are clearly defined. Among these, there are conditions such as that the food is safe to be consumed as part of the daily diet, and that the claims are scientifically supported. Except those allowed in the food standards code, claims that a food or food ingredient can treat, prevent or diagnose a disease or condition are not permitted. Claims should express a specific benefit rather than a general one. Declarations are classified in the document published by the Council. General-level statements are statements that refer to non-serious ailments or that do not refer to any particular ailment. High-level statements are statements that refer to a significant disease (Australia New Zealand Food Regulation Ministerial Council Policy Guideline on Nutrition, Health and Related Claims, 2018).

India has enacted the Food Safety and Standards 2006 act, which is the sole reference point for food products, including nutraceuticals, nutritional

supplements and functional foods. The law defines functional foods, food products for special nutritional purposes, nutraceuticals and nutritional supplements. The new law still has a long way to go before it can reach United States' and European standards. Nevertheless, the enactment of this law is considered as an important first step for India. There is currently no separate category for functional foods and nutraceuticals in India. The 2006 Food Safety and Standards law combined eight different laws related to the food sector and gathered them under a single law. Everyone in the food industry is obliged to obtain authorization or permission from local authorities. The law imposes a gradual penal sanction on all persons who violate the law, which differs according to the severity of the situation violated. The Food Safety and Standards Authority of India is responsible for establishing a framework and setting standards for products such as nutraceuticals, functional foods, dietary products and the like (Keservani et al., 2014).

In Canada, food products containing vitamins, minerals and herbs are called natural health products (NHP). These products are regulated under the Food and Drug Act in Canada. Between 2004 and 2014, Health Canada approved the sale of 61,000 NHPs and authorized 1,250 production sites belonging to NHPs. More than 680 specialist functional food and NHP companies in Canada have revenues of more than \$3.7 billion (Harrison & Nestman, 2014). Functional foods and NHPs are evaluated in different contexts and regulated by different laws. Canada requires that health claims have been approved prior to placing on the market. It has a very strict and long process for the approval of new declarations. To date, there have been nine confirmed claims to reduce the risk of generic disease. The number of affirmed statements from structural/functional claims is 26 and there are no approved statements in therapeutic claims yet. The legal regulations of NHPs are product specific and different from functional foods. The level of evidence claimed for these products also varies based on the statement. Sixteen statements are approved about nutrient function relation, including nutrients, vitamins and minerals. New nutritional function declarations are subject to approval. Companies requesting to obtain approval for a new health claim must apply to Health Canada.

In addition, there is a food group called "novel foods" that needs an application for new foods, which are also known as genetically modified foods or foods that have gone through a new process in the production process.

Qualified health claims are not allowed in Canada. Qualified health claims are defined as those that contain reliable but inconclusive evidence. Canada also does not allow product-specific declarations on food products. Product-specific declarations can only be used for products that go through the registration process for declarations stating the relationship between food or food ingredient and health claim (Malla et al., 2013).

2.1. Legal Framework for Functional Foods in Türkiye

When the legal framework in Türkiye regarding functional foods is considered, the Turkish Food Codex Regulation on Food Labeling and Consumer Information, published in the Official Gazette on Thursday, January 26, 2017,

prohibits the use of information on the labels of food products that may mislead the consumer. In this regulation, it is also stated that no information can be given that a food has the feature of preventing, treating or curing a disease, and that such features cannot be referred to (TürkGıdaKodeksiGıdaEtiketlemeveTüketicileriBilgilendirmeYönetmeliği, 2017). Nutrition and health claims to be used on foods are regulated by the Turkish Food Codex Regulation on Nutrition and Health Statements published in the Official Gazette dated January 26, 2017 and numbered 29960. According to this; statements that make one think that other foods are inadequate; vague, false or misleading statements; statements that imply that a balanced diet does not provide all the nutrients one needs; statements that lead to excessive consumption of a particular food, references to changes in body functions in a written, visual or other way that may cause concern in the consumer, cannot be used. It is essential that health claims are based on and verified by generally accepted scientific evidence. Statements that suggest that a food may have adverse health effects if not consumed, statements that refer to the advice of doctors or health professionals and other organizations specified in the relevant law, statements that refer to the amount or rate of weight loss are strictly not allowed.

In order to make a health claim on the label, promotion or advertisement of a food, it is mandatory to contain at least two of the following conditions; containing maximum 100 mg/100 kcal sodium content in its composition, maximum 10% of the energy it contains coming from unsaturated fatty acids, maximum 10% of the energy it contains coming from added sugar, naturally having maximum 55 mg/100 kcal calcium in its composition. In addition, it is not allowed to make a health claim for beverages containing more than 1.2% alcohol by volume.

Health claims to be made should be based on generally accepted scientific evidence and should be confirmed by scientific evidence. The firm that makes a nutrition or health claim is obliged to prove that the statement it made is in compliance with the Turkish Food Codex Regulation on Nutrition and Health Claims dated 26 January 2017 and numbered 29960.

In the relevant regulation, statements on fourteen nutrients and conditions regarding these statements, 174 health claims excluding the development and health of children, thirteen health claims on reducing the risks of disease, and eleven health claims on the development and health of children are specified. Health claims based on protected proprietary data are listed as five. The nutrition declaration for the two nutrients specified in the regulation and the health declaration for the ten nutrients are the declarations that the food business operators, which were in operation before the publication of the said regulation and were obliged to comply with the said regulation until 31/12/2019, are obliged to comply in the transition period.

In addition, the technical rules regarding the preparation and submission of applications for health claims, the general principles for scientific verification, the organization of appropriate scientific data and the format of data summaries and the format of the application files for health claims are also detailed within the scope of the regulation to remove the

ambiguity(TürkGıdaKodeksiGıdaEtiketlemeveTüketicileriBilgilendirmeYönetmeliği, 2017).

Table 1. Functional Food Applications According to Country

Country	Is there a special statement on the product that it is a functional food?	Is Scientific Evidence Demanded?	Are the permitted statements or ingredients listed?	Are Disallowed Statements or Contents Listed?	Other Apps Regarding Allowed Content
Japan	Yes	Yes	Yes	No	-
Australia	No	Yes	Yes	Yes	-
USA	No	Yes	No	No	GRAS
EU	No	Yes	Yes	Yes	-
UK	No	Yes	Yes	Yes	-
China	No	Yes	Yes	Yes	-
Mexico	No	Yes	Yes	No	-
Brazil	No	Yes	Yes	Yes	-
Indonesia	No	Yes	Yes	No	-
India	No	Yes	No	No	-
Canada	No	Yes	No	No	-
Türkiye	No	Yes	Yes	Yes	-

3. Conclusion

When an evaluation within the framework of the countries examined is made, it is seen that all of them agree on a common point regarding the demand for scientific evidence on health claims. When evaluated in terms of nutritional elements table, while nutritional element labeling is mandatory on foods in countries such as Canada, USA, Brazil, India, nutritional element labeling is optional in the European Union, England and Japan if there is no declaration.

In nutraceuticals and natural health products (NHP), the situation differs from country to country. Canada and Australia consider these products as drugs rather than food and use labels that put these products in the drug category, which is not the case in other countries.

Countries such as Canada, America, Australia, New Zealand, and Japan accept claims that the product contains calcium or vitamin D and reduces the risk of osteoporosis.

In Türkiye, a nutrition claim is made by using the concepts similar to those in Japan; “low, not containing, containing and high”. Nutrition declaration for 14 nutrients is listed under the Turkish Food Codex Regulation on Nutrition and Health Claims.

The list of health claims, excluding claims on disease risk reduction and on the development and health of children, consists of 174 nutrients or categories. When the expressions used in their statements are examined, 156 of them includes "contributes," 8 of them includes "has a duty", 2 of them includes "necessary", 3 of them includes "increases", 2 of them "helps", 1 of them "improves", 1 of them includes "neutralizes". It is seen that the concepts of "supports" are included in one.

The list of health claims for reducing the risk of disease includes the claims for 13 nutrients, and the statement is expressed using the concept of "is a risk factor".

The list of declarations regarding the development and health of children consists of 11 different nutrients.

The list of health claims based on protected proprietary data, on the other hand, consists of 5 different nutrients, 2 of which includes "contributing", 2 "helpful" and 1 as "less raising".

In the case of a new declaration, the relevant company must apply to the General Directorate of Food and Control with the relevant documents including scientific evidence. The General Directorate may consult the Scientific Commission if needed.

The Turkish Codex Regulation on Nutrition and Health Claims contains very detailed statements as it was prepared within the scope of the European Union harmonization legislation.

However, in today's conditions, a system similar to the GRAS system being implemented in the United States may be more beneficial in order to have more scientific control in the monitoring of new statements or contents, in order to accelerate this process both for companies and to determine that the products put on the market do not have negative effects on public health.

It is thought that dividing foods into categories that are also applied in Canada and subjecting them to a more detailed classification similar to novel foods, functional foods and natural health products and connecting them to different regulations, when considered on the basis of added content, may serve for a more detailed and easier separation in terms of the process.

Limitations of this study is reaching up-to-date data about various countries. If more data about different countries is available, a better comparison can be made. So if researchers from different countries conduct research about the legal applications on functional foods in their countries, it will be possible for future studies to have a more clear look at the subject.

This study compares different countries' legal approaches to functional foods and gives advice about the path that can be followed in Türkiye compared to other countries.

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GENERATION CLEAN: REDEFINING HOSPITALITY
MARKETING PROMOTIONS

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Abstract

The fast expansion of COVID-19 has had a significant impact on the global hotel industry. Therefore, throughout COVID-19, hotel hygiene and cleanliness have become a main feature in the recovery plan. And this is simply because hotel guests expect higher hygienic standards, and hotels don't want to appear negligent by running out of supplies. What marketing strategies and promotions once worked for pre-COVID-19 hotel guests, won't work for post-COVID-19 hotel guests. Hospitality marketing and promotions cannot solely target groups like Baby Boomers, Millennials, or Gen Xers now and even in the future. New standards such as approved cleaning procedures and formal cleaning certifications gained with third-party regulators/entities represent the behavior, needs and expectations of the today's "Generation clean" hotel guests. At the same time, hotels that are paying attention to and adapting their marketing strategy to these shifts are the ones that will be able to best evolve to this new normal.

Keywords: COVID-19, generation clean, guests, hotel, marketing, promotion.

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1. Introduction

The travel industry has been heavily impacted by the COVID-19 pandemic (Ristova Maglovska & Durgutov, 2021). Travel even initially came to a near-complete halt due to the virus. But now, after more than 2 years, countries across the world are reopened, lifting the travel ban. Throughout it all, this represents quite a challenge for the hotel industry because it is more difficult than ever to build trust in the safety precautions used to protect guests' health and wellness.

Undoubtedly all these revolutionary changes occurring in the hotel industry as a result of the COVID-19 pandemic have reshaped the guest behavior, with evolving guest needs and emphasis on hyper-focused health and safety expectations (Ongsakul *et al.*, 2022), therefore creating a new target group that will stand out between all hotel guests, welcoming “Generation Clean” (Pelletier, 2020).

While in the history of the hotel industry, there has never been a moment when guests were more concerned with their safety and health, even while the chance of getting sick at home is unsettling, falling sick when abroad adds a whole other level of stress and anxiety to the situation. Because of this, hotels need/already are concentrating their efforts on not just upholding the statutory, minimum standards for cleanliness but also going above and beyond and effectively informing guests of which.

Handling these elevated expectations of Generation Clean needs, will mean that hotels will need to redefine their marketing practices, imposing inherent need to communicate how they deal with the coronavirus to motivate guests to visit (Jimenez-Barreto *et al.*, 2021). In relation to the current situation, this paper is taking an approach to define “Generation Clean” hotel guests, discuss marketing actions that hotels should be employing and overview some of the already promoted campaigns by hotel brands.

2. Who is Generation Clean?

Hygiene and cleanliness have always been a priority and concern for hotel guests (Lewis & McCann, 2004; Lockyer, 2003), as well as a driver of income for hotels. However, prior to the COVID-19 pandemic it is fair to say that hotels haven't been that consistent in the implementation of practices including disinfection, handwashing, and hand sanitizer use. These often were activities that hotels performed maybe once a week or per month, depending of the hotel and brand respectively (Braff, 2022). Still when COVID-19 pandemic spread, hotels found themselves announcing new cleaning programs with protocols on how to even wash the hands properly, so that the contact among both staff and guests is minimized and the risk of virus spread is reduced (Rawal *et al.*, 2020).

Beginning in 2021, an increasing number of hotels began to welcome back previous guests. And despite global recovery among the hotels being unequal, there is a strong desire to get things back to normal, which is increasingly being reflected in current hospitality patterns. New guest behaviors have been developing at the same time, which will now influence how the hotels will handle the expectations of the guests in the future. Furthermore, the hotels that are paying

attention to and making these adjustments will be the ones that can best adapt to this new standard.

Since the beginning of the Coronavirus pandemic, besides traditional determinants such as price and location, topics like safety, public health, hygiene, and cleanliness have been of every guests' mind when wanting to book in a hotel (Wang *et al.*, 2020). Booking reported that saw a dramatic increase use of the words "clean" and "hygiene" by over 60% when guests asked questions about a property (Booking.com, n.d.). Even now with the whole world reopened for travel, guests' concern for social distancing, COVID, hotel cleanliness, safety have made a profound influence on the guests' psyche, which is very similar when cleanliness and hygiene were essential for the successful hotel operations after the 2003 SARS outbreak (Kim *et al.*, 2005).

In such way, having demands from hotel guests for increased cleaning, safety, disinfection and infection prevention as an expectation when booking in a hotel formed the new guest behavior (Yu *et al.*, 2021) known as "Generation Clean" who is here to set out new standards in the hotel industry during the COVID-19 recovery or perhaps beyond. Introduced first by Pelletier (2020), Generation Clean represents the new target group in the hotel industry that has evolved as a result from COVID-19 pandemic.

Generation Clean represents a group of hotel guests who now more than ever are sensitive to hotel hygiene. For these guests it is important that they feel more at ease, knowing the hotel is doing all necessary to keep them safe with staff members dressed in face masks and disposable gloves (Kim & Han, 2022). One among the key factors that influences these guests into booking the hotel room is also the precaution that the hotel is taking to prevent the spread of COVID-19. Having educational signs with messages for health, safety, and hygiene instructions posted in hotel rooms and public spaces as well as consistent marketing messaging to the guests to ensure they're comfortable about their stay and promote the hotel brand's commitment to safety. Yet, nowadays, with COVID-19 measures and travel bans lifting, for Generation Clean it is more than essential that hotels won't simply forget of all the health and hygiene measures and therefore continue to value their guests' well-being. For instance, even though hotels now removed the mandatory masking requirement for most settings but still practice social distancing, there still can be some restrictions in place for in-restaurant dining e.g. to replace the buffet by an *a la carte* service (Hameed *et al.*, 2021) or to put coverings over meal plates that are removed tableside (Malbec, 2020), then for spa and wellness centers to be run by safety protocols, social distancing, deep cleaning and disinfecting during the day and overnight (Schweder, 2021) and for housekeeping to reduce the amount of time required in order to decrease guest contact (Jain, 2020).

With research done in 2021 by STR, CoStar's hospitality analytics firm, we are shown how guests' behavior has changed therefore leaving indelible mark on the hotel industry. COVID-19 restrictions on personal safety and the influence of the imminent development of contactless technology, now serve as a requirement for Generation Clean guests among other travelers as well. In the data presented in Fig. 1 we can see that 38% of surveyed travelers in the U.S. agree and strongly agree for their dining to be a "contactless" service (Klauda, 2021).

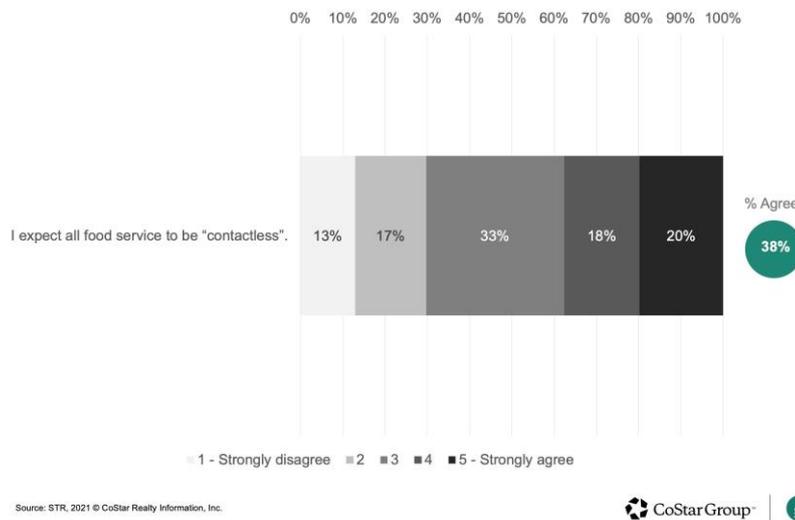


Figure 1. Alternative dining option

As a result of this, it can be confirmed that the COVID-19 pandemic has made it very clear: guests demand higher hygiene and cleanliness standards, and this trend is here to stay. Moving forward, as hotels try to meet guest expectations for hotels target groups such as Baby Boomers, Millennials, or Gen Xers, they have to realize that same marketing promotions will not work for post-COVID-19 guests, especially Generation Clean travelers (Hao *et al.*, 2020, Jiang & Wen, 2020), which leaves out hotels creating new proper targeted marketing promotions to ensure your guests that they will feel safe during their stay in the hotel.

3. Keeping it clean: hotel marketing recovery promotions

Hotels have reopened their doors to a more competitive market than ever before. Today's hotel guest arrives with high expectations, demanding one-of-a-kind experience (Pillai *et al.*, 2021) with more stringent safety and health protocols (Rawal *et al.*, 2020), because travel and accommodation, as we know, has been transformed perhaps forever because of the COVID-19 pandemic. With international borders reopened and travel bands lifted, hotels now play a more integral part in the travel experience than ever before.

The expectations of hotel guests in this post-pandemic period have changed significantly and have never been higher. The new essentials include higher standards for cleaning programs that emphasize current disinfection and sterilizing techniques. Therefore, for hotels to be adaptable and stay competitive they need to develop marketing campaigns that inspire confidence in their ability to provide what guests want and expect in terms of hygiene, cleanliness, and distancing and thus remain competitive (Jiang & Wen, 2020). Given that this situation is unprecedented, this calls for in-depth insights and creative understanding of guests' evolving requirements and behaviors, such as those of the Generation Clean target group (Pelletier, 2020).

Consequently, marketing recovery promotions are an important aspect of achieving the *new normal* (Jimenez-Barreto *et al.*, 2021) of how hotels deal with future guests especially Generation Clean travelers. These actions by the hotels for marketing promotions for the new normal are opted to communicate with a clear message about what they are doing to confront COVID-19 (Redjeki *et al.*, 2021). Which means, if hotels aim to target Generation Clean they should avoid to practice cases they try not to mention COVID-19 or Coronavirus but instead to promote the maximum hygiene measures that they are going to implement and thus remove any doubt in the future hotel guests' stay.

One among the most effective marketing messaging for recovery promotions that hotels practice/can practice is to maintain proactive communication on health and safety measures implemented, both pre-stay and during their stay via online content and in-property information for Generation Clean guests.

Generation Clean guests don't want to spend that much time on searching for information about the hotels' new cleaning procedures and how they are going to affect their safety and wellbeing. Here is where the hotel marketing promotions content should be clearly visible. That is why starting with the hotels' website it is more important than ever to keep every information up to date. Because with a research of over 1,000 hotel websites in 2021 done by Guestcentric, 97% of online visitors abandon a hotel website during the booking process, and a research study Fuel & Flip, 87% of people usually check a hotel's website before making a reservation (Palma, 2022). To generate more reservations, hotels need to put all information about the cleaning standards and protocols on their home page, and thus promote and highlight the key points of the cleaning procedures used during their stay, with additional link to the full list of processes. Such relevant information also needs to be provided on the website pages but on-site as well for all additional services as dining, spa & wellness and others. It is crucial for the marketing messaging on the hotels' website to inform guests whether the operating procedures have changed, what products and services are still offered, and are the reservation policies changed since visually this is how guests decide if they have the confidence to book and visit the property (Sarwari *et al.*, 2021).

Hotel marketing recovery promotions can also make use of the social networks to build trust. Hotel guests, moreover, Generation Clean guests rely on social media mainly due to social distancing, simply because with social distancing guests and travelers see social media platforms as a means of staying connected and informed. Given that this is also an information that the guests gather from the platforms before they initially make the booking, having all hotel's COVID-19 policies posted as organic posts or paid ads, social media channels can't be neglected as a part of the hotels' marketing recovery strategy. Social media channels represent a cost-effective marketing promotion that in the case of hospitality can fulfill a highly targeted reach. Posting content about the highly changing status of the pandemic in up-to-the-minute information that affect a great deal of the followers if having doubts about booking in the hotel, and ultimately create a stronger relationship (Kwok *et al.*, 2021).

It is also beneficial for the hotel marketing recovery promotions to be updated at the hotels' site on OTAs. Although, to nobody's surprise, OTAs have

significantly decreased during the peak of COVID-19, Expedia published a study in late 2020 that suggested “travelers are 57% more likely to book their travel through an OTA now than before COVID-19” (Green, 2021). Also, in a recent study on hotel websites, Google discovered that “almost 20% of direct bookings occurred after the guest found the hotel on an OTA” and that “52% of guests will visit the hotels’ website after seeing it promoted on an OTA” (Green, 2021). Having reassuring marketing messaging on the hotels’ OTA will have a significant impact throughout the booking process. Addressing that the hotel is taking the necessary efforts to keep Generation Clean guests safe and healthy during their stays can inspire confidence in their booking decision, giving them a sense of security that makes them feel confident to book. Along with the room description, hotels should include a brief comment regarding cleaning methods, updated rate information and promote flexible cancellation terms.

The use of email marketing, once the Generation Clean guest has booked can also be considered as a marketing promotion by the hotel, informing them with relevant and timely updates using empathetic language generating peacefulness and avoid cancellations.

In addition to all these actions, hotels should have mind that is not all about promoting cleaning procedures, but how is the messaging promoted. A recent study by P&G Professional states that 70% of guests say they would be more likely to choose a hotel room, and one in three diners would be willing to spend more for a meal if they knew the hotels was using a personally recognizable and trusted brand of cleaning products (Turner, 2020). Another vital action is for hotels to regain Generation Clean guests’ trust is to establish a formal cleaning certification with third-party certification from an accredited hygiene organization (Jimenez-Barreto *et al.*, 2021). Lastly, this type of guests doesn’t just want to know that the property has protocols, but they want a communication about those protocols.

When it comes to on-site marketing promotion during the stay of Generation Clean guests, when hotels become certificated with a cleaning protocol, the certification can be prominently displayed in the lobby. Aside from this, educational signs promotion can be posted in lobbies, public areas, bathrooms and guest rooms. Instructions about mask coverage, social distancing, handwashing and schedules about cleaning and disinfecting these areas can also make feel guests safe.

4. Analysis of marketing campaigns from hotel brands

Discussing about the ways of how hotel marketing recovery strategies are being focused and targeted towards guests, moreover Generation Clean guests, we can see that many hotel brands (Table 1) started their marketing messaging with communication about their special cleaning programs to assure guests that they are effectively dealing with the virus (Jimenez-Barreto *et al.*, 2021).

Table 1. Selected examples of hotel brands cleaning programs

No.	Hotel brand	Cleaning program
1.	Marriott International	<i>Commitment to Cleanliness</i>

	Group	
2.	Hilton Hotels & Resorts	<i>CleanStay</i>
3.	Accor Hotels	<i>ALLSAFE Cleanliness & Prevention</i>
4.	Best Western Hotels & Resorts	<i>We Care Clean</i>
5.	Choice Hotels International	<i>Commitment to Clean</i>

Source: Marriott Cleanliness Council (n.d.); Hilton Travel Flexibility and Health Standards (n.d.); Accor Allsafe (n.d.); We Care Clean (n.d.); Commitment to Clean (n.d.).

With thousands of hotels across the world improving their cleaning procedures and safety precautions over the past two year to keep guests healthy, some of the world’s biggest hotel brands have taken the lead in the very beginning of 2020. Next, some of the several marketing campaigns enacted by popular chains like Marriott, Hilton, Accor and more are going to be analyzed.

The largest hotel group in the world Marriott International in April 2020 has launched the “Commitment to Clean” program, which aims to elevate its cleanliness standards and hospitality norms. Aside from this, Marriott has created the Marriott Global Cleanliness Council, focused on developing the next level of hotel cleanliness. But Marriott’ council isn’t just on disinfection and cleanliness protocols, rather it is taking a holistic approach designed to take care of their guests. With this on mind, Marriott hotels promoted the new cleaning regimen on their website, their personal website dedicated to their cleaning program and social media, through promotional videos, photos and information with specific areas of focus such as importance of high-touch surface cleanliness, guest contact and food safety. Their promotional campaign it goes into detail about the new measures they have implemented, such as hand sanitizing stations at hotel entrances and other touch-point locations. Other measures include signage, check-in dividers, disinfectants in rooms, wipes for guests use in each room, electrostatic sprayers, and mobile devices to minimize touch-point chances. Since the “Commitment to Clean” program was first introduced, Marriott also practices email marketing, informing all their guests from their databases and loyalty program members first about the updated cleaning standards and now on about every new policy update on COVID-19.

Hilton Hotels & Resorts started their “Clean Stay” program in June 2020, partnering with RB (the maker of Lysol and Dettol) and consulting with Mayo Clinic. Their program is committed to providing a cleaner stay from check-in to checkout, with some very rigorous cleaning standards, starting from RB’ scientific approach to cleaning practices, and Mayo Clinic’ assistance to cleaning and disinfection protocols. To promote the program, Hilton Hotels have posted a video demonstrating the cleaning procedures along with the announcement about the initiative on its social media channels and website. According to Hilton Hotels, partnering with the trusted household cleaning brand Lysol had a significant impact on revenue and guest loyalty. Later in October 2020, Hilton announced another global marketing campaign “To New Memories” created to

reignite people's passion for travel during the pandemic by appealing to the emotions of their audience.

To ensure the guests' safety back in 2020, Accor Hotels introduced the "ALLSAFE" program with enhanced cleanliness protocols and standards. All Accor Hotels are certified with "ALLSAFE" label throughout a third-party review from professionals as Bureau Veritas, SGS, Clifton and Ecolab. Accor' marketing strategy is focused on creating informational posters, short videos that would highlight the programs' multi-level safety and hygiene measures covering each part of Accor hotels starting from lobby to the kitchen and then to the rooms. Their campaign on different social media channels launched in April 2020 using posts and dialogue. Prior to that, in all regions where Accor Hotels are located a press release was held to disseminate information about the safety protocols that the hotels are going to use.

The "We Care Clean" launched in 2020 is a program who is part from the "I Care Clean" program, that Best Western hotels have been working on since 2012. Best Western hotels consider them leaders with a reputation of providing clean accommodation, and that is why for the new "We Care Clean" program they have partner up with P&G Professional, where now more than ever their hotels are equipped with trusted and recognized brands of cleaning products. Best Westerns' marketing campaign focuses on five key areas: front desk and lobby, guest room and housekeeping, temporary breakfast offerings, public amenities and hotel employees and staff requirements.

Budget-friendly Choice hotels first introduced their "Commitment to Clean" initiative in 2020 as a part of their long-standing cleanliness protocols, partnering with Ecolab, industry leader in hygiene and infection prevention techniques. From the highlights of the "Commitment to Clean" plan, their marketing strategy is focused on flexible cancellation policies and superior levels of cleanliness. To promote health and safety each Choice hotel has a "Commitment to Clean Captain", who will complete the necessary cleanliness training and oversee the implementation of the new procedures into their hotel's operations.

Additionally, all the above-mentioned programs, plan and initiatives taken by one of the leading hotel brands is updated regularly upon the latest standards and recommendations by the Ministry of health and other governmental agencies, thus promoted by them.

5. Conclusion

As the hotel industry adapts to the COVID-19 pandemic, for the better part of two years much has changes in the guest behavior resulting with a whole new target group called Generation Clean. With heightened expectations of health and hygiene, this group needs whole new measures when it comes to booking accommodation, which means hotels must ensure that their sanitization protocols are included in all their marketing promotions. Using empathetic language, reacting quickly and socially responsibly, all hotels must take thoughtful approach to their marketing plan and inform their guests what operating procedures have changed, what amenities and services are still available, and what booking

policies are available. Sharing the right marketing promotion is a powerful tool in the post COVID-19 era for Generation Clean guests, because after all it informs and empowers them to make a booking decision.

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THE IMPACT OF SALARY GROWTH ON INFLATION:
CASE STUDY - REPUBLIC OF NORTH MACEDONIA

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Abstract

Inflation and salary increase generally move in the same direction and they are driven by different inputs. Salaries are driven by changes to supply/demand for labor which can be caused by demographic trends, technological advances, labor participation rates and growth in productivity. On the other hand, inflation represents changes in the cost of a market basket of goods (such as groceries and fuel). In the Republic of North Macedonia in the first quarter of 2022 the inflation rate had an upward trend and reached 7.7%. It reflects the price pressures on the supply side caused by global factors, which resulted in an upward trend in the prices of primary products on the international market, and were transmitted to the domestic economy, mainly through increased food prices (of 10.4%), oil derivatives (by 29.1%) and energy (by 8.5%). The main goal of the paper is to calculate the coefficient of inflation elasticity in relation to increases of salaries. The analysis in the paper will give the answer to the question: Did higher salaries lead to higher inflation?

Keywords: inflation, salary, supply, demand

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1. Introduction

The global economy is heavily influenced by the Russian invasion of Ukraine, a crisis that comes at a time when the world economy has not yet fully recovered from the Covid 19 pandemic, and the recovery itself has caused significant differences between developed and developing countries. Such developments are expected to adversely affect economic growth, causing significant increases in inflation, rising interest rates and public debt management difficulties that will hamper fiscal consolidation.

The argument that higher salaries lead to inflationary pressures; is well presented by Layard, Nickell and Jackman (1994), when buoyant demand reduces unemployment (at least relative to recent experienced levels), inflationary pressure develops. Firms start bidding against each other for labour, and workers feel more confident in pressing salary claims. If the inflationary pressure is too great, inflation starts spiralling upwards: higher salary leads to higher price rises, leading to still higher salary rises, and so on. This is the salary-price spiral.

They are more empirical evidence, but still, most studies find a weak relationship between higher salary growth and higher inflation.

According by Hess and Schweitzer (2000), there is little systematic evidence that salary (either conventionally measured by compensation or adjusted through productivity and converted to unit labor costs) are helpful for predicting inflation. The policy conclusion to be drawn is that inflation can appear regardless of recent salary trends. Aaronson (2001) finds that restaurant prices generally rise with changes in the wage bill.

2. World economy review

Global growth is projected to slow from an estimated 6.1 percent in 2021 to 3.6 percent in 2022 and 2023. This is 0.8 and 0.2 percentage points lower for 2022 and 2023 than projected in January.

Global growth is forecast to decline to about 3.3 percent over the medium term.

The economies of developed countries are expected to grow by 3.3% in 2022 and slow to 2.4% in 2023, while the economies of developing countries are expected to have a different course after the projected growth of 3.8% in 2022 it is expected to increase to 4.4% in 2023. Russia and Ukraine are expected to face a significant decline in GDP. From the larger world economies, downward revision is recorded by the USA, China and Germany, which are expected to achieve economic growth rates of 3.7%, 4.4% and 2.1% in 2022 and 2.3%, 5.1% and 2.7% in 2023. In the medium term, global growth after 2023 is expected to decline to around 3.3%

Inflation is expected to be high for a long period of time than in the previous projection and to be driven by rising intermediate commodity prices and shock prices induced by the war. In 2022, inflation is expected to be 5.7% in developed and 8.7% in developing countries, representing an upward correction of 1.8 percentage points. ie 2.8 percentage points compared to January projections.

In 2023, inflation in developed countries is expected to fall to 2.5%, but in developing countries to remain at a relatively high level of 6.5%.

The risks associated with the projection are going down. While a quick resolution of the Ukraine war will boost confidence, reduce price pressures and reduce supply bottlenecks, it is likely that growth will continue to slow and inflation will remain higher than expected. The continuation of the war can be reflected in the deepening humanitarian crisis, the increase in the number of refugees and the strengthening of sanctions against Russia, which would adversely affect foreign trade, foreign investment and further deepen the energy crisis. Rising interest rates amid rising public debt as a result of the pandemic are expected to widen budget deficits and impose tough fiscal consolidation choices. The re-emergence of the pandemic could also be a source of adverse effects, especially as restrictive measures have been introduced in China recently, and the emergence of a new dangerous variant of the virus could pose a serious risk 9 (table 1).

Table 1: IMF projections for economic growth in the world, EU and region (%)

	April 2022		October 2021	
	2022	2023	2022	2023
World	3,6	3,6	4,9	3,6
EU	2,9	2,5	4,4	2,3
Euro Area	2,8	2,3	4,3	2,0
Germany	2,1	2,7	4,6	1,6
France	2,9	1,4	3,9	1,8
Italy	2,3	1,7	4,2	1,6
Spain	4,8	3,3	6,4	2,6
Great Britain	3,7	1,2	5,0	1,9
USA	3,7	2,3	5,2	2,2
China	4,4	5,1	5,6	5,3
N.Macedonia	3,2	2,7	4,2	3,8
Albania	2,0	2,8	4,5	4,1
Bosnia & Hercegovina	2,4	2,3	3,3	3,0
Kosovo	2,8	3,9	4,5	4,2
Montenegro	3,8	4,2	5,6	3,6
Serbia	3,5	4,0	4,5	4,5
Bulgaria	3,2	4,5	4,4	4,0
Croatia	2,7	4,0	5,8	4,0
Slovenia	3,7	3,0	4,6	3,7
Greece	3,5	2,6	4,6	2,6
Turkey	2,7	3,0	3,3	3,3

3. Projections for North Macedonia

The GDP growth rate for North Macedonia in 2022, according to the April projections of the IMF, is expected to be 3.2% and compared to the projection from October 2021 it is lower by 1.0 pp. For 2023 the projection for GDP growth was 2.7% and decreased by 1.1 pp. in relation to the projections from October 2021.

The inflation rate for North Macedonia in 2022 is expected to be 6.9% and compared to the report published in October 2021, the projection has increased by 4.7 pp. The projection of the inflation rate for 2023 is 3, 6%.

The current account deficit as a percentage of GDP in 2022 is expected to be 5.8%, compared to the projection from October 2021 of 2.1%. For 2023, the current account deficit projection is 3.6% of GDP (table 2).

Table 2: Projections of the IMF for North Macedonia

	2022	2023	2024	2025	2026	2027
GDP, real growth	3,2	2,7	3,7	3,6	3,5	3,5
Inflation rate	6,9	3,6	1,9	2,0	2,1	2,0
Export, real growth	3,3	7,9	9,1	7,4	7,3	6,3
Import, real growth	3,2	6,5	8,6	7,5	7,4	6,3
Unemployment rate	15,7	15,1	14,7	14,4	14,2	14,0
Budget revenues,% of GDP	30,2	30,4	30,4	30,5	30,5	30,5
Budget expenditures,% of GDP	36,5	34,8	34,2	33,9	33,6	33,5
Budget balance,% of GDP	-6,3	-4,4	-3,8	-3,3	-3,1	-2,9
General government debt, % of GDP	55,3	55,6	55,9	55,8	55,6	55,3
Current account balance, % of GDP	-5,8	-3,6	-2,9	-2,7	-2,6	-2,5

4. Salary and inflation in North Macedonia and in the EU and region

During the observation period from 2015-2021, the inflation in EU and the region is presented in table 1 and we can see that inflation rate in North Macedonia is moving as in other countries. But we can see that in 2021 in every country inflation rate is going up as a result of Covid 19 pandemic.

Table 3: Inflation, by years (average)

	2015	2016	2017	2018	2019	2020	2021
Greece	-1,1	0,0	1,1	0,8	0,5	-1,3	0,6
Malta	1,2	0,9	1,3	1,7	1,5	0,8	0,7
Portugal	0,5	0,6	1,6	1,2	0,3	-0,1	0,9
Slovenia	-0,5	-0,1	1,4	1,7	1,6	-0,1	1,9

Italy	0,1	-0,1	1,3	1,2	0,6	-0,1	1,9
Denmark	0,2	0,0	1,1	0,7	0,7	0,3	1,9
BiH	-1,0	-1,6	0,8	1,4	0,6	-1,1	2,0
Albany	1,9	1,3	2,0	2,0	1,4	1,6	2,0
France	0,1	0,3	1,2	2,1	1,3	0,5	2,1
Finland	-0,2	0,4	0,8	1,2	1,1	0,4	2,1
Cyprus	-1,5	-1,2	0,7	0,8	0,6	-1,1	2,2
Montenegro	1,5	-0,3	2,4	2,6	0,4	-0,2	2,4
Ireland	-0,1	-0,2	0,3	0,7	0,9	-0,5	2,4
Croatia	-0,5	-1,1	1,1	1,5	0,8	0,1	2,6
Sweedeen	0,7	1,1	1,9	2,0	1,7	0,7	2,7
Austria	0,8	1,0	2,2	2,1	1,5	1,4	2,8
Netherland	0,2	0,1	1,3	1,6	2,7	1,1	2,8
Slovakia	-0,3	-0,5	1,4	2,5	2,8	2,0	2,8
Bulgaria	-1,1	-1,3	1,2	2,6	2,5	1,2	2,8
Spain	-0,5	-0,2	2,0	1,7	0,7	-0,3	3,1
Deutschland	0,7	0,4	1,7	1,9	1,4	0,4	3,2
Belgium	0,6	1,8	2,2	2,3	1,2	0,4	3,2
N.Macedinia	-0,3	-0,2	1,4	1,5	0,8	1,2	3,2
Latvia	0,2	0,1	2,9	2,6	2,7	0,1	3,2
Kosovo	-0,5	0,2	1,5	1,1	2,7	0,2	3,3
Luxembourg	0,1	0,0	2,1	2,0	1,7	0,0	3,5
Czech Republic	0,3	0,7	2,5	2,1	2,8	3,2	3,8
Serbia	1,4	1,1	3,1	2,0	1,9	1,6	4,1
Estonia	0,1	0,8	3,7	3,4	2,3	-0,6	4,5
Lithuania	-0,7	0,7	3,7	2,5	2,2	1,1	4,6
Romania	-0,6	-1,6	1,3	4,6	3,8	2,6	5,0
Poland	-0,9	-0,6	2,0	1,6	2,3	3,4	5,1
Hungary	-0,1	0,4	2,4	2,8	3,4	3,3	5,1

In Table 4 are presented annual inflation rate that is increased to 14% in Lithuania, 12.5% in Estonia and 7.7% in North Macedonia until march 2022. If we compare the western Balkan countries we can see that Serbia has a higher inflation 8,7% for the observed period.

Table 4: Inflation, annual growth rates (monthly data)

	jan.22	feb.22	mar.22	jan-mar.22
EU	5,6	6,2	7,8	6,5
Lithuania	12,3	14,0	15,6	14,0
Estonia	11,0	11,6	14,8	12,5
Czech Republic	8,8	10,0	11,9	10,2
Latvia	7,5	8,8	11,5	9,3

Belgium	8,5	9,5	9,3	9,1
Poland	8,7	8,1	10,2	9,0
Bulgaria	7,7	8,4	10,5	8,9
Netherlands	7,6	7,3	11,7	8,9
Serbia	8,2	8,8	9,1	8,7
Slovakia	7,7	8,3	9,6	8,5
B&H	7,0	8,1	10,2	8,4
Hungary	7,9	8,4	8,6	8,3
Romania	7,2	7,9	9,6	8,2
Kosovo	7,1	7,5	10,0	8,2
Spain	6,2	7,6	9,8	7,9
Macedonia	6,7	7,6	8,8	7,7
Montenegro	5,7	6,7	9,7	7,4
Luxembourg	4,6	7,8	7,9	6,8
Greece	5,5	6,3	8,0	6,6
Croatia	5,5	6,3	7,3	6,4
Slovenia	6,0	7,0	6,0	6,3
Germany	5,1	5,5	7,6	6,1
Italy	5,1	6,2	6,8	6,0
Ireland	5,0	5,7	6,9	5,9
Cyprus	5,0	5,8	6,2	5,7
Austria	4,5	5,5	6,7	5,6
Denmark	4,9	5,3	6,0	5,4
Sweden	3,9	4,4	6,3	4,9
Finland	4,1	4,4	5,8	4,8
Portugal	3,4	4,4	5,5	4,4
Albania	3,7	3,9	5,7	4,4
Malta	4,1	4,2	4,5	4,3
France	3,3	4,2	5,1	4,2

In Table 5 are presented minimum monthly gross salary for the countries in the region and Europa to see did gross salary grow up relating to inflation rate. We can see that in every country presented below, the monthly gross salary is grow up. Minimum salary levels are set using different methods – including predetermined formulas, expert committee recommendations and consultation with social partners – and are often also subject to government discretion.

The frequency of change differs from one country to another, but most countries revise their minimum salary every one or two years. Changes in minimum salary can have a direct mechanical effect on aggregate salary growth in an accounting sense. An increase in minimum salary pushes up the salary level of those who previously received a salary below the new minimum salary. The increase of the minimum salary can – especially in the case of large increases – also push up the share of minimum salary recipients in the economy. Minimum salary changes can also have an indirect impact through knock-on effects on

above-minimum salary in order to keep a certain distance from minimum salary or through the use of minimum salary increases as a benchmark for salary negotiations.

Table 5: Minimum monthly gross salary (in euros)

	2018 P1	2018 P2	2019 P1	2019 P2	2020 P1	2020 P2	2021 P1	2021 P2	2022 P1
Belgium	1.563	1.563	1.594	1.594	1.594	1.626	1.626	1.626	1.658
Bulgaria	261	261	286	286	312	312	332	332	332
Czech Republic	478	469	519	525	575	546	579	596	652
Germany	1.506	1.506	1.561	1.561	1.544	1.544	1.569	1.585	1.621
Estonia	500	500	540	540	584	584	584	584	654
Ireland	1.614	1.614	1.656	1.656	1.656	1.707	1.724	1.724	1.775
Greece	684	684	684	758	758	758	758	758	774
Spain	859	859	1.050	1.050	1.108	1.108	1.108	1.108	1.126
France	1.498	1.498	1.521	1.521	1.539	1.539	1.555	1.555	1.603
Croatia	462	466	506	507	546	546	563	567	624
Latvia	430	430	430	430	430	430	500	500	500
Lithuania	400	400	555	555	607	607	642	642	730
Luxembourg	1.999	1.999	2.090	2.090	2.142	2.142	2.202	2.202	2.257
Hungary	445	418	464	461	487	452	442	476	542
Malta	748	748	762	762	777	777	785	785	792
Netherlands	1.578	1.578	1.616	1.636	1.654	1.680	1.685	1.701	1.725
Poland	503	480	523	529	611	583	614	619	655
Portugal	677	677	700	700	741	741	776	776	823
Romania	408	407	446	439	466	461	458	467	515
Slovenia	843	843	887	887	941	941	1.024	1.024	1.074
Slovakia	480	480	520	520	580	580	623	623	646
Montenegro	288	288	288	331	331	331	331	331	533
N.Macedonia	279	282	341	341	343	342	353	359	:
Albania	181	191	211	212	213	209	243	245	248
Serbia	285	283	308	308	344	344	366	366	401

One useful and widely used statistical indicator is the ratio of the minimum salary to the average salary. As mean salary is affected by extreme values, average salary provides a better point of reference, especially in countries that have high salary inequality. This indicator shows the level of the minimum salary relative to that of the "average worker", and – to the extent that average salary reflect at least in part average productivity levels – also provides information on economic factors (table 6). The table below shows that in developed economies, the minimum salary ranges usually from 35 to 60 per cent of the average salary. But in developing countries, the ratio of minimum to average salary is frequently higher. This could be due to the fact that in developing countries, the average salary earner is often relatively low-paid. Thus, considerations related to the needs of workers and their families sometimes lead to higher minimum salary ratios than in developed economies.

Table 6: Minimum and average net salary in EU countries and the region (in euros)

Country	Effective from	Minimum salary	Period	Average salary	Ratio of minimum to average salary
B&H	01/2022	365	02/2022	542	67,3%
N. Macedonia	03/2022	300	02/2022	485	61,9%
Albania	01/2022	236	Q2 2021	384	61,5%
Slovenia	01/2022	758	02/2022	1.240	61,1%
Slovakia	01/2022	520	2021	919	56,6%
Montenegro	01/2022	383	02/2022	706	54,2%
Poland	01/2022	521	02/2022	962	54,2%
Ireland	01/2021	1.574	Q3 2021	3.041	51,8%
Croatia	01/2022	505	02/2022	987	51,2%
Lithuania	01/2022	534	Q4 2021	1.059	50,4%
Serbia	01/2022	301	01/2022	603	49,9%
Estonia	01/2022	604	Q3 2021	1.214	49,8%
Spain	01/2022	965	Q3 2021	2.039	47,3%
Czech Republic	01/2022	571	Q2 2021	1.250	45,7%
Hungary	01/2022	369	01/2022	835	44,2%
Germany	01/2022	1.301	Q4 2021	2.970	43,8%
Bulgaria	01/2022	282	12/2021	665	42,4%
Latvia	01/2022	426	12 2021	1.050	40,6%
Romania	01/2022	308	12/2021	785	39,2%

In table 7 are presented average net salary in countries in the region where we can see that Slovenia and Croatia has a biggest average net salary according to fact that they are members of EU, from other countries that are not EU members the biggest salary has Serbia, North Macedonia is down on the list. The biggest grow rate there is also Serbia and in the second place is our country partly as a result of the transfer effect of the minimum salary increases in 2020, as well as the

regular increase of the minimum salary from April 2021 year. Additional structural factors, such as the lack of labor force in certain segments, had an additional impact on increasing the average salary, but also as an effect of the crisis which is expressed through the reduction of the number of employees with salaries lower than the average. Thus, nominal net and gross salary registered annual growth of 5.7%, respectively (table 8).

Table 7: Average net salary in countries in the region - in euros

	2015	2016	2017	2018	2019	2020	2021
Serbia	379,8	394	409	424	469	513	560
Montenegro*	480	499	510	511	515	524	537
Bosnia and Herzegovina	421	434	441	455	477	496	510
N. Macedonia	355,6	363	372	395	410	441	466
Kosovo	376	382	390	409	430	416	/
Croatia	743	755	795	829	858	898	943
Slovenia	1.013	1.030	1.062	1.092	1.133	1.210	1.270

* For Montenegro, the data for 2021 refers to the net salary in December 2021

Table 8: Average net salary in countries in the region – growth rates

	2015	2016	2017	2018	2019	2020	2021
Serbia		3,7	3,8	3,7	10,6	9,4	9,2
Montenegro		4,0	2,2	0,2	0,8	1,7	2,5
Bosnia and Herzegovina		3,1	1,6	3,2	4,8	4,0	2,8
N. Macedonia		2,1	2,5	6,2	3,8	7,6	5,7
Kosovo		1,6	2,1	4,9	5,1	-3,3	/
Croatia		1,6	5,3	4,3	3,5	4,7	5,0
Slovenia		1,7	3,1	2,8	3,8	6,8	5,0

4.1 Inflation in relation to increases of salaries in North Macedonia

In 2021 the inflation rate was 3,2% but in the first quarter of 2022, the inflation rate had an upward trend and reached 7.7%. It reflects the price pressures on the supply side caused by global factors, which resulted in an upward trend in the prices of primary products on the international market, and were transmitted to the domestic economy, mainly through increased food prices (of 10.4%). oil derivatives (by 29.1%) and energy (by 8.5%) (table 9) (Fig.1).

Table 9: Data for average net salary and inflation rate

	Net salary			inflation rate	core inflation index (2001=100)
	average (in denars)	nominal annual rate (in %)	real annual rate (in %)		
2002	11.550	6,9	5,0	1,8	101,8
2003	11.955	4,8	3,6	1,2	103,0
2004	12.534	4,0	4,4	-0,4	102,6
2005	12.597	2,5	2,0	0,5	103,1
2006	13.517	7,3	4,0	3,2	106,4
2007	14.584	7,9	5,5	2,3	108,9
2008	16.096	10,4	1,9	8,3	117,9
2009	19.957	24,0	25,0	-0,8	117,0
2010	20.553	3,0	1,4	1,6	118,8
2011	20.847	1,4	-2,4	3,9	123,5
2012	20.902	0,3	-2,9	3,3	127,6
2013	21.145	1,2	-1,6	2,8	131,1
2014	21.394	1,2	1,5	-0,3	130,7
2015	21.906	2,4	2,7	-0,3	130,3
2016	22.342	2,0	2,2	-0,2	130,1
2017	22.928	2,6	1,2	1,4	131,9
2018	24.276	5,9	4,4	1,5	133,8
2019	25.213	3,9	3,1	0,8	134,8
2020	27.182	7,8	6,5	1,2	136,4
2021	28.718	5,7	2,3	3,2	140,8

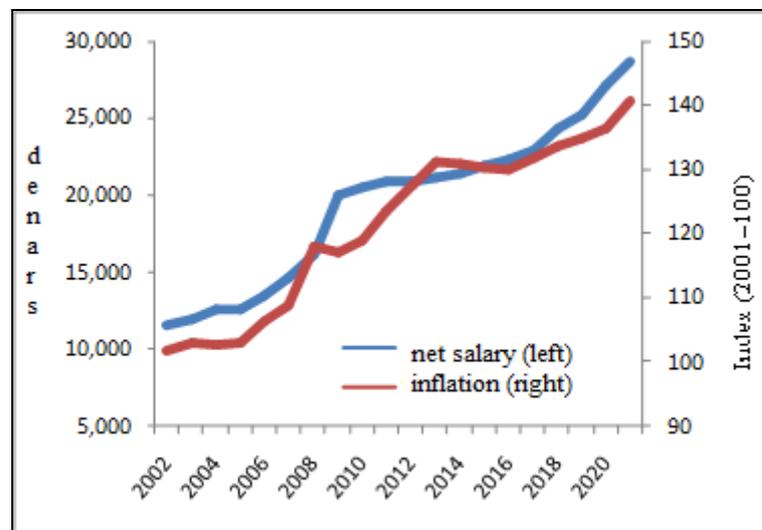


Figure 1: Movement of average net salary and inflation

Calculations is made for coefficient of inflation elasticity in relation to increases of salaries. Given that in 2009 there was a structural break in salaries, two calculations were made:

- inclusion of an artificial variable for 2009 and with
- correction of the payroll series without the inclusion of an artificial variable.

The following results have been obtained by applying the Ordinary Least Squares method (OLS):

a. coefficient of 0.37 (level of significance of 1%), $R^2 = 0.97$

b. coefficient of 0.44 (level of significance of 1%), $R^2 = 0.95$

According to these results, an increase in the average net salary of 1% results in an inflation rate of 0.37% or 0.44%, without considering other factors that could affect prices.

5. Conclusion

During the year, with the lifting of restrictive measures to deal with the pandemic and the gradual recovery of personal demand, the disruption of global supply chains became more pronounced, combined with shortages of workers, border controls, demands for higher wages and flexibility work arrangements, contributed to a reduced supply of products and services and launched a cycle of inflation growth globally. Inflationary pressures were further intensified at the end of the year due to the energy crisis (especially in Europe). Consequently, participants in the international financial markets strengthened the expectations for normalization of the monetary policies of the leading central banks.

In this paper we have shown that the effects of a 1 percent increase in the salary-markup is quantified. By following OLS method, inflation rate is about 0.37 or 0.44 percentage points. Monetary policy is important in mitigating shocks to wage-markups. The results are somewhat sensitive without considering other factors that could affect prices. We can conclude that our paper is successful in replicating the empirical evidence and increase in minimum salary can cause minimum inflation.

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WINE TRADE DYNAMICS OF NORTH MACEDONIA

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Abstract

The foreign trade of Republic of North Macedonia is of great importance for the country's economic activity. The wine sector has an important role in the agriculture of Republic of North Macedonia and wine is at the first place in the export of beverages and is the second most important product after tobacco, in terms of export value of agricultural products.

The foreign trade of Republic of North Macedonia is of great importance for its economic activity. The wine sector plays a major role in agriculture in the Republic of North Macedonia, and wine is on the first place in the export of beverages and is the second most important product after tobacco, in terms of export value of agricultural products. Hence, the analysis of the peculiarities of the foreign trade exchange that the Republic of North Macedonia accomplishes in the wine sector, especially in the last decade, is extremely actual and important. The purpose of the research was to analyze and give recommendations about the wine trade dynamics, the Gini – Hirschman's coefficient and utilization of trade quotas for bulk and bottled wines.

Secondary data from relevant institutions has been processed, as well as quantitative methods were applied in this paper. Gini - Hirschman's export coefficient is higher than that of import, while the export of bottled and bulk wines in the analyzed period varied. The increase of exports and especially of exports within the wine sector is of great importance for the international trade of the country, as well as for its overall economy. Tariff quotas were not fully utilized in the observed period.

Keywords: foreign trade, wine export, Gini - Hirschman coefficient

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1. Introduction

In the current conditions, parallel to the growing level of globalization, the world markets are increasingly opening up. Trade and commerce play a significant role in national economies. Countries, when they sell and buy goods and services from each other, realize significant benefits and benefit each other. This is seen in the fact that they are allowed to export goods for the production of which they have an abundance of local resources, and import goods for the production of which resources are needed that are locally scarce. International trade also allows countries to specialize in a narrow range of products, thereby achieving greater efficiency and large-scale production. Winemaking is a traditional and important production activity for the Republic of North Macedonia. Wine ranks first in the export of beverages and is the second most important product after tobacco, in terms of the export value of agricultural products. About 100,000 people are directly involved in this sector such as wineries, winegrowers and employees in industries that are related to materials for this industry. The purpose of this paper is to analyze the trade balance of wine, to show the concentration of the coefficient of the wine in the overall trade dynamics and to show the usage of the tariff quotas.

As for the wine trade, in the analyzed period, there is a change in the export dynamics and since 2015, there have been changes in the increase in the share of bottled wines. On the import side, in all years, bottled wine dominated. The Macedonian export is focused on a few groups of products and there is no great diversification. The Gini - Hirschman index shows a small value, which means that wine has a low share in the overall Macedonian export or import. The index of imports, on the other hand, is even lower and is very close to zero. Macedonian wine exporters who exported to the European Union did not utilize the maximum available quota covered in the analysis. The utilization of quotas is higher for bulk wines than for bottled wines.

In order to see the broad picture regarding the wine trade, and to meet the requirements for finding solutions, this paper will attempt to give some recommendations regarding the wine trade, based on theoretical foundations, empirical research and practical experiences.

2. Research methodology

The purpose of this research is to analyze the Macedonian wine trade in the period from 2009 to 2019, and in addition to the analysis, index percentages of the concentration of the export and import of wine for bottled and bulk wines were calculated. The purpose of the research was to analyze the utilization of trade quotas for bulk and bottled wines.

For the purposes of this research, data from relevant institutions was used, where a descriptive analysis was given, and the author's own calculations were made. Several scientific-research methods were used during the work of the paper: analysis and synthesis, the method of induction and deduction, statistical method, comparative method, descriptive analysis, etc. When presenting the material, the methods of theoretical and empirical analysis were used. The

empirical analysis is based on data from the State Statistics Office of the Republic of North Macedonia, as well as on data from relevant international organizations. Appropriate techniques for processing the received data and information were applied and certain indicators were calculated. Based on the theoretical and empirical analysis, relevant conclusions have been made about the structure of the country's foreign trade wine exchange for a certain period as well as the Gini-Hirschman concentration coefficient.

2.1 Theoretical review of foreign trade policy

Theoretical aspects of international trade are important to be able to explain the phenomena that occur in practice. In this paper, the theoretical aspect of international trade is explained, which is later met in the practical part. International trade is an applied economic scientific discipline that deals with international trade developments, phenomena and policies related to these matters. The subjects of its study are the relations that are established between states for the purpose of regulating international trade flows, i.e., international trade relations, as well as the activities that a country undertakes for the purpose of unilateral regulation of foreign trade. The research thought about international trade focuses on why the international trade flows are established, how the goods from the trade are distributed, where the optimum in the exchange is established (Predrag, 2010). Furthermore, the international trade is investigating the flows of international trade through the work of foreign trade companies, and with deriving regularities from these practices of international trade (Tamir, 1990). Researchers who work on this issue also deal with the political aspect of international trade and its flows. At the same time, with the development of economic thought, a large part of them, currents in the international economy try to show them through mathematical methods.

2.2 International movement of goods

The international movement of goods is an essential part of the transactions that take place in international trade. The international movement of goods represents an inflow of goods from abroad and an outflow of goods from a given country abroad. The import of goods means the purchase of the goods from abroad, and thus the payment of the producers for the delivered goods and services. On the other hand, export is the sale of goods and services to a specific country abroad. Data on commodity exports in the world are obtained from two basic sources: from customs reports compiled on the basis of export customs declarations and from the reports of commercial banks, on the financial transactions of enterprises (Kikerkova, 2000, p.45). The value of the exported goods is calculated according to the principle FOB (free on board) and FAS (free along shipside), and this does not include the costs of transportation and insurance of the invoice value of the

goods. Merchandise exports are classified according to the Standard International Trade Classification SMTK (Standard International Classification - SITC) (Eurostat), introduced by the United Nations. The data for the import of goods worldwide are taken from the same databases as for the export. The value of the import of the goods is expressed through the CIF (cost, insurance and freight) method, which means that the costs of transportation and insurance of the goods to the port of import or to the land border of the importing country are added to the invoice value of the imported goods. It is important to note that the Brussels nomenclature is also applied in international statistical practice. This type of nomenclature lists goods in nine classes: 0 – Food; 1 – Tobacco and beverages; 2 – Crude fuels; 3 – Mineral fuels and lubricating oils; 4 – Vegetable and animal oils and fats; 5 – Chemical products; 6 – Products classified according to the type of processed material; 7 – Machinery and means of transport; 8 – various finished products; 9 – other goods. These set items are valid for both import and export of goods exchange.

Available WTO data show that world exports and imports have increased many times over the last decades. Thus, in the period 1950-2018, world merchandise exports grew from 62,024 million dollars (1950) to 19,468,057 million dollars (2018). In the same period, the world import of goods increased from 63,810 million dollars to 19,812,335 million dollars, respectively (Kikerkova, 2000 p.48). As for the share of total exports, i.e. imports of goods and services in the world GDP, the available data of the World Bank indicate their significant increase. At the same time, the export of goods and services as a percentage of GDP grew from 13.6% (1970) to 30.1% (2018), while the import from 13.7% to 29.3%, respectively (Kikerkova,2000). One of the indicators used to analyze exports and imports is the Gini-Hirschman coefficient. It shows the concentration of exports of a certain country in a certain period of time and is calculated with the given formula (Tegene,1990):

$$GHI = 100 \sqrt{\sum_{k=1}^n \left(\frac{X_{kt}}{X_t} \right)^2}$$

In this formula, GHI represents the index value, X_k is the commercial goods export of a certain country for a period of time t , X_t represents the total export (import) of a certain country for a period of time t . With this coefficient, we have a minimum and a maximum, while the maximum is 100 and occurs when only one product is exported (imported). The smallest value is $100/n$, where "n" is the number of goods exported (imported). If we have a high level of concentration, then the initial index value is 100. In this case, most of the time the country is affected by a problem that arose in the international market. A low concentration close to 0 indicates that the country's exports are too diversified. In this situation, the risk is reduced. The Gini – Hirschman index also shows the concentration of imports of goods. In this case, the given formula is:

$$GHI = 100 \sqrt{\sum_{k=1}^n \left(\frac{M_{kt}}{M_t}\right)^2}$$

For the analysis of market concentration, instead of a product, we can do the same for a country, where instead of "product K" we write "the country". In this case, if it is exported to several countries, the coefficient will decrease, but if it is exported to only one country, the coefficient will be 100.

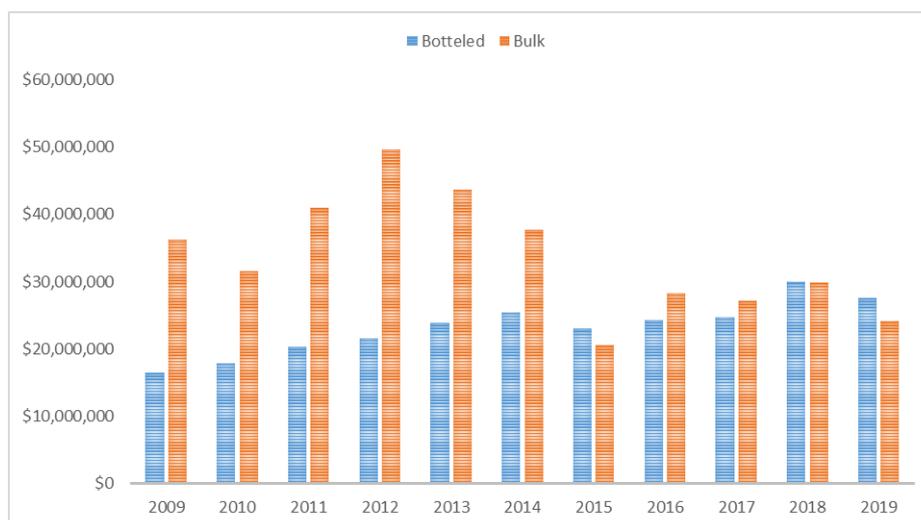
3 Data analysis and results

Analysis of the export and import of wine in the Republic of North Macedonia

There is an old tradition of wine production on the territory of Macedonia, and according to the evidence from the archaeological sites on the territory of Macedonia, the earliest production started as early as 6,500 years B.C (Hristovski, 2009). In Macedonia, there is also a favorable soil for the cultivation of the wine, and especially for the black wine varieties of grapes, due to the soil characteristics. Wine plays a big role in the agricultural sector, so it is around 17 to 20% of our agricultural gross domestic product (Assoc.Wines of Macedonia). Wine has a large share in exports and is the second agricultural product after tobacco. The wine production facilities in RSM consist of 74 registered wine cellars with a total capacity of 2,165,447 hl, (Assoc.Wines of Macedonia) which is twice as much as the total wine production (50% utilization of the total capacities). The total bottling capacity is about 650,000 hl per year, which is insufficient to cover the entire wine production in the country. The analysis of the import and export of wine, in absolute values and quantity, in the Republic of North Macedonia, allows us to see the trade balance of the wine industry. In terms of wine exports, the trade can be analyzed separately for bottled and bulk wine. For bulk wine, the data refers to bulk wine and bag-in-box wines.

Chart no. 1 presents the movement of wine exports in the given categories, from 2009 to 2019, expressed in US dollars. We can notice that the export of both bottled and bulk wine varied from year to year. In the case of bottled wine, in the first five analyzed years, a constant increase in exports is noticeable, with an average growth rate of 9%. Then, the value of bottled wine exports varies. However, considering the data, it can be concluded that in 2019 compared to 2009, the export of bottled wine increased by 41%, reaching a value of 27.6 million US dollars in the last year. In 2015, the export of bottled wine was higher than that of bulk wine, and this can be noticed in 2018 and 2019 as well. The least amount of bottled wine was exported in 2009, with a value of \$16.4 million, and the most in 2018 worth of \$30 million.

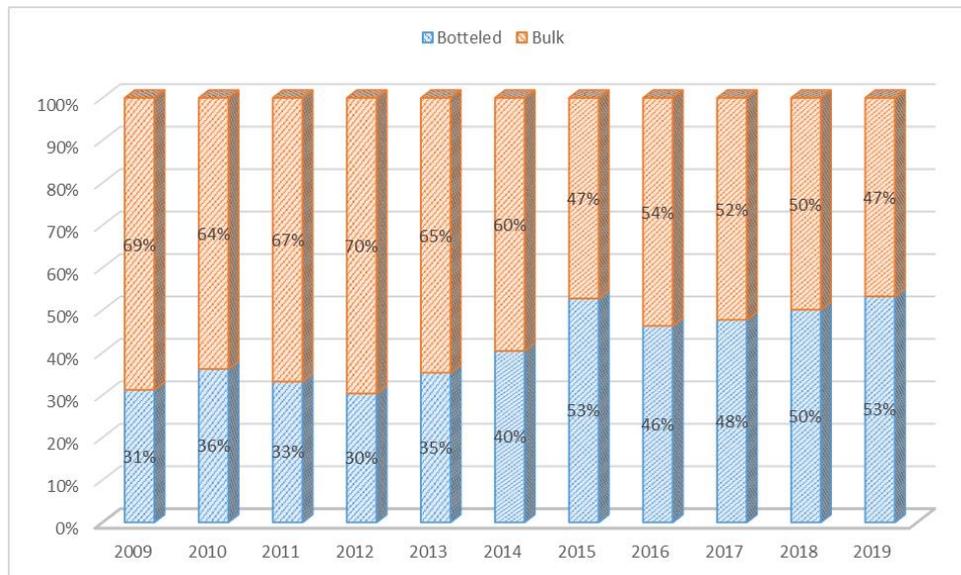
Chart 1: Export of bottled and bulked wine from the Republic of North Macedonia, 2009-2019, in US dollars



The bulk wine export, although it has fluctuated, in 2019 compared to 2009, decreased by 33%. The lowest export of bulk wine was recorded in 2015 (\$ 20.625 million), and the highest in 2012 (\$ 49.679 million). The data show that the export of this category of wine has significantly decreased. This, among other things, may be due to the higher demand for bottled wine because of its higher quality, although it has higher prices, compared to bulk wine. That is why it is completely justified that Macedonian wine producers are increasingly focusing on bottled wines. It is also part of their strategy for the country to become a famous wine region for good bottled wine.

From the data presented in chart no. 2 it can be noted that in almost the entire period 2009-2019, the share of bulk wine export in the total export of the country is higher than the share of bottled wine. At the same time, this share tends to decrease from 69% (2009) to 47% (2019). Only in 2015 and 2019, the share of bottled wine exports was higher than that of bulk.

Chart 2: Share of bottled and bulk wine exports in the total wine exports of the Republic of North Macedonia, 2009-2019, in USD



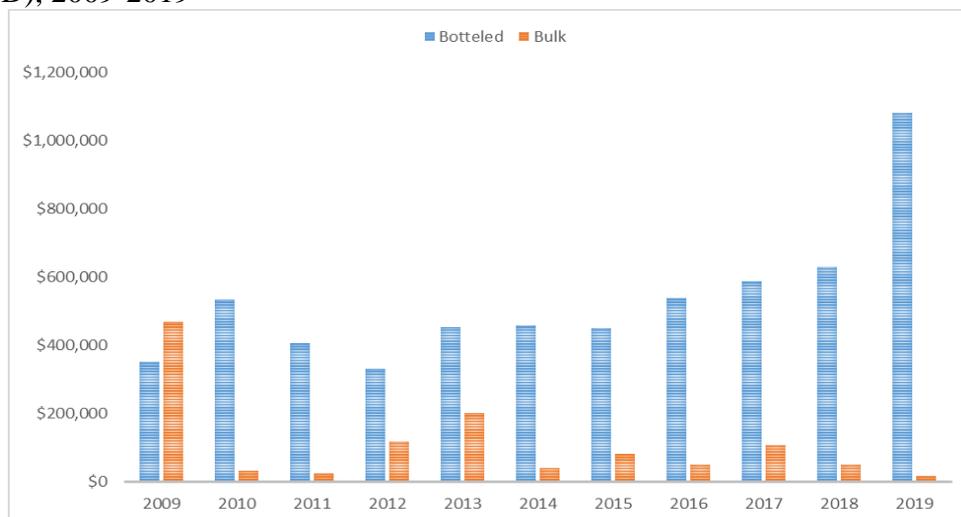
Source: Association Wines of Macedonia, <http://winesofmacedonia.mk/>

Such changes in the structure of wine export show that wine producers in the Republic of North Macedonia are increasingly emphasizing the production and export of bottled wine.

Regarding the value of wine import, the data shows that the Republic of North Macedonia imports much less wine than it exports. From chart no.3 it can be noticed that the imported side is different from the exported one in terms of the structure of bottled and bulk wine.

The value of imported bottled wine is much higher than that of bulk wine, with a tendency to increase in recent years (average growth rate of 18%). In 2019, the import of bottled wine reached a value of 1.081 million US dollars. Bulk wine imports, on the other hand, are very low and characterized by oscillations. In the last years of the analysis, we can see that the bulk wine import is sharply declining. In 2019, compared to 2009, it decreased by 96%.

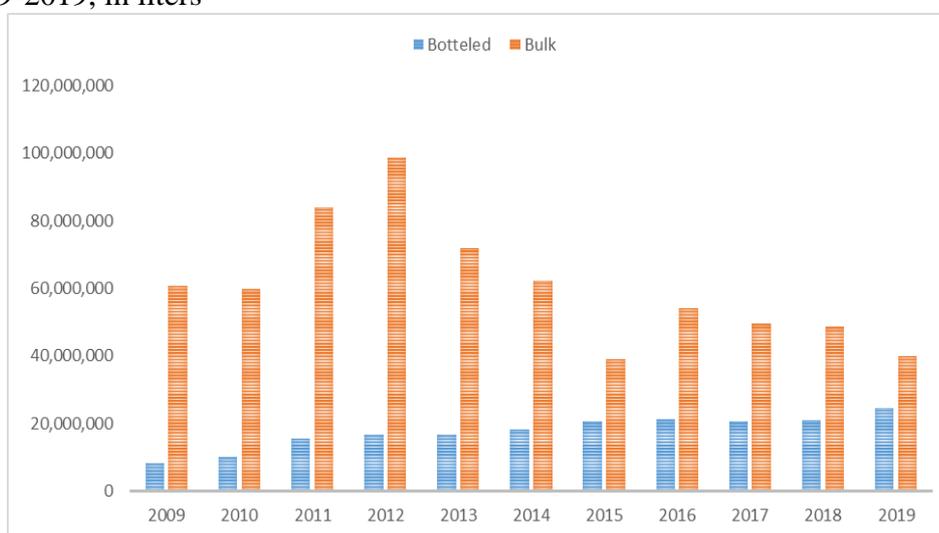
Chart 3: Import of bottled and bulk wine in Republic of North Macedonia (in USD), 2009-2019



Source: State statistical office, <http://www.stat.gov.mk/>

If the export and import of bottled and bulk wine are analyzed according to the quantities, certain differences are noticed in relation to the monetary value of the exported, i.e. imported wines. Chart no. 4 shows the export of bottled and bulk wine, where it is noticeable that the quantities of the exported bulk wine are larger. The export of bulk wine in the period 2009-2019 is characterized by certain oscillations, with a significant decline in the period from 2012 to 2015 and in the last three years. However, there is a general tendency of decreasing the quantities of bulk wine exported by Macedonia, where in the last compared to the first analyzed year that decrease is 35%.

Chart 4: Export of bottled and bulk wine from the Republic of North Macedonia, 2009-2019, in liters

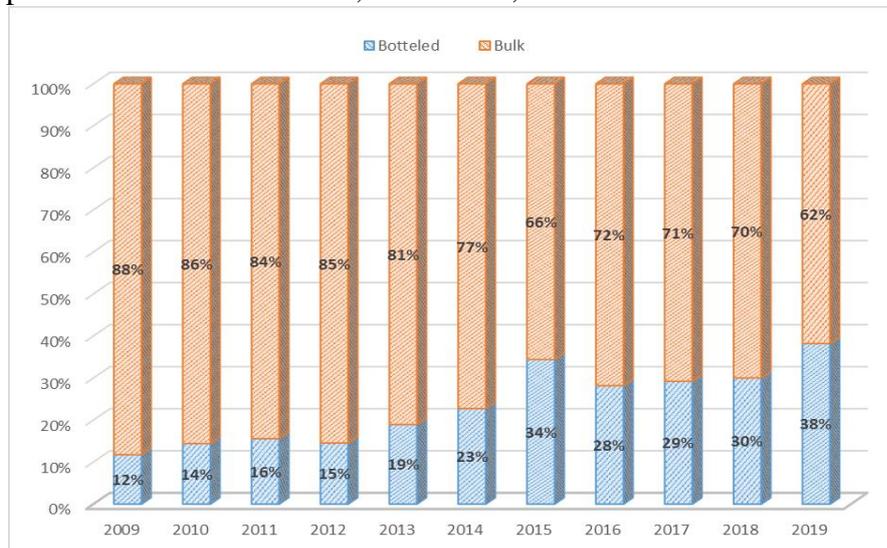


Source: State statistical office

Although the quantity of exported bottled wine is much smaller, it contributes the most in the trade income. Although the export of bottled wine per liter varied during the period, still an increasing trend can be noticed, where in 2019, 24,649,797 liters were exported, or 68% more compared to 2009 year. This tendency, as mentioned, is justified because of the quality of these wines, but also because of the added value they bring to wine producers. Therefore, Macedonian wineries strive to be recognizable by quality bottled wines.

A similar situation and tendency are observed regarding the share of the export of bottled and bulk wine in the total export, expressed in quantities. Thereby, in the entire observed period, the presence of bulk is higher than that of bottled wine, but with a tendency of decrease from 88% (2009) to 62% (2019), (Chart no. 5).

Chart 5: Share of the export of bottled and bulk wine in the total wine export of the Republic of North Macedonia, 2012-2019, in liters

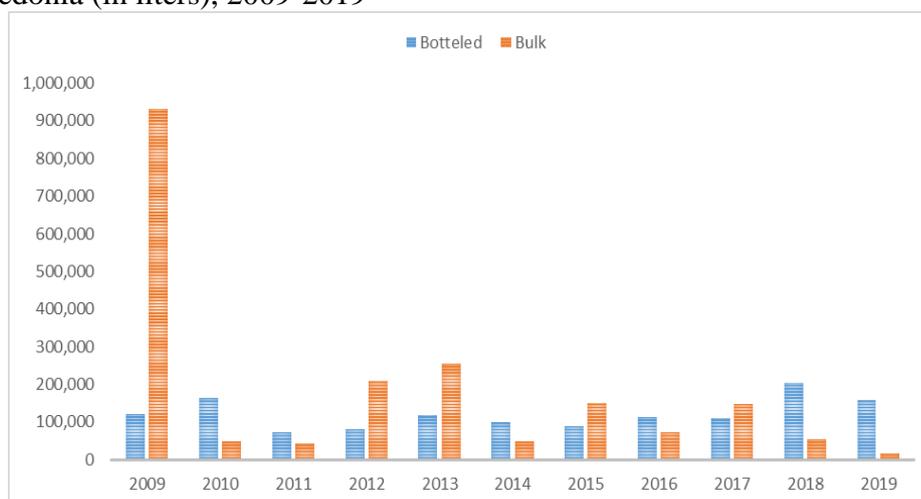


Source: Association wines of Macedonia

The trends of the import of bottled and bulk wine, shown in liters, are presented in Chart no. 6. The data shows that the imported quantity expressed in liters is relatively small, especially compared to export. Unlike export, the structure of import in liters is different.

Import of both groups of wines varied, but in this period, a larger amount of bottled wine was imported. In bottled wine, although there is a variation in import, if compared to 2009, in 2019 there was a growth of 35%. However, the smallest quantity of bulk wine was imported in 2019, and bottled in 2011. Characteristically noticeable is the drastic decline of imported bulk wine in 2010 by as much as 95%.

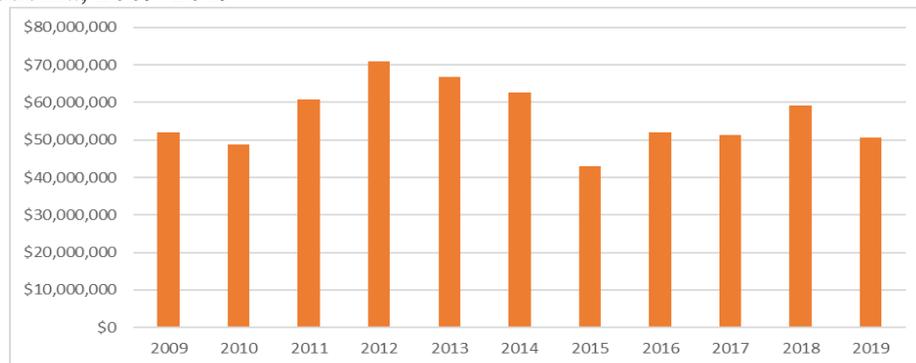
Chart 6: Import of bottled and bulk wine from the Republic of North Macedonia (in liters), 2009-2019



Source: State statistical office

Considering the previous analyzes, it can be concluded that the trade balance of export and import of wine varied, but still in the entire analyzed period shows a surplus. It was the highest in 2012 and the lowest in 2015 (Chart 7).

Chart 7: Trade balance in the export and import of wine in the Republic of North Macedonia, 2009-2019



Source: By the author

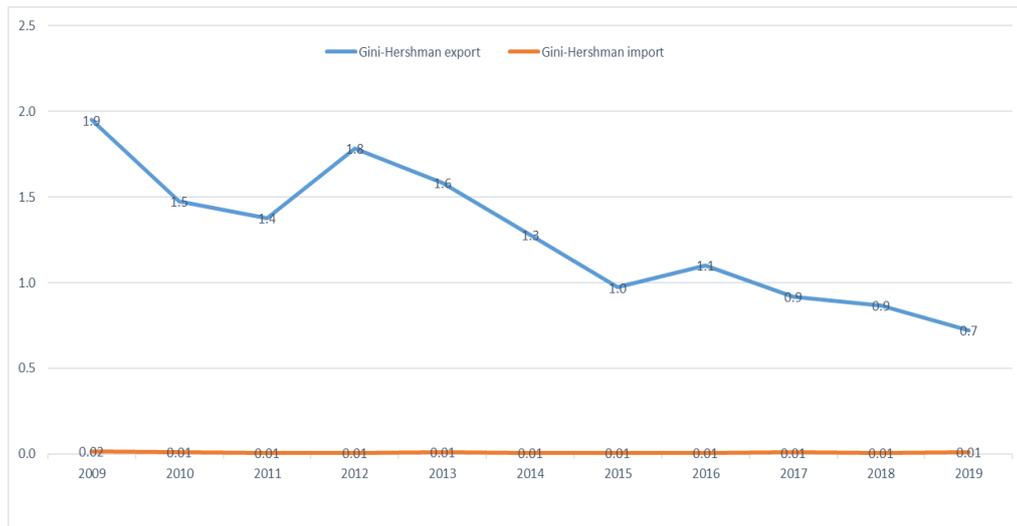
The trade surplus in the wine trade means that the country is gaining a trade advantage and that Macedonian wine can be competitive in foreign markets, and that they are consumed and demanded by foreign consumers. Also, due to the weaker import of foreign wines, it can be noticed that for the most part Macedonian consumers are not very oriented towards imported wines. With the increase of wine export, the wineries achieve greater financial profit, and the sector itself strengthens its competitiveness.

Concentration of wine in the total export and import of North Macedonia

The Gini - Hirschman coefficient is one of the most commonly used coefficients for commodity exchange, which shows the concentration of a product in the overall export or import of the country. The calculation of this coefficient makes it possible to perceive the concentration of the export i.e. the import of wine in the total export i.e. the import of the Republic of North Macedonia. The coefficient is calculated between 2009-2019. The reference system for the "density" of the index is from 0 to 100. If the coefficient move closer to zero, then the concentration of the specified good in the total export or import is low. If the coefficient gets closer to one hundred, then the density is considered high.

Chart no. 7 presents the Gini - Hirschman coefficient for the total export of wine (bottled, bulk and bag in box wine). Although its value varies, it recorded a decrease in the analyzed period, and has low values. The Macedonian export is focused on a few groups of products and there is no great diversification. Although the index shows a small value, it means that wine has a low share in the overall Macedonian export or import. The Gini - Hirschman index of import, on the other hand, is even lower and moves very close to zero.

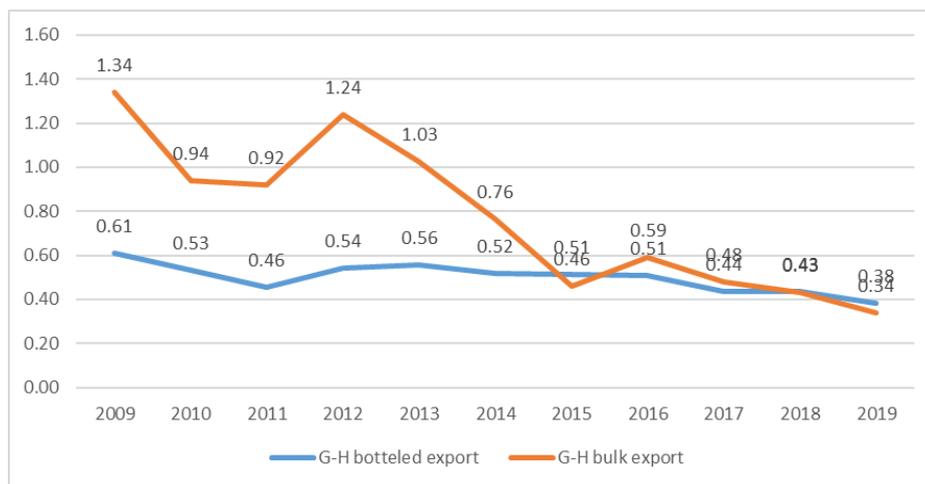
Chart 8: Gini - Hirschman coefficient for export and import of wine from the Republic of North Macedonia, 2009-2019



Source: Data by the author

Within the framework of this analysis, the Gini-Hirschman coefficient was calculated separately for the export of bottled and bulk wine (Graph no. 8). As can be noticed, the values of this coefficient in both categories of wine are relatively small. However, the Gini-Hirschman coefficient for the export of bulk wine is somewhat higher than that of bottled wine and ranges from 1.54 (2009) to 0.34 (2019).

Chart 9: Gini – Hirschman coefficient for the export of bottled and bulk wine in the Republic of North Macedonia, 2009-2019



Source: By the author

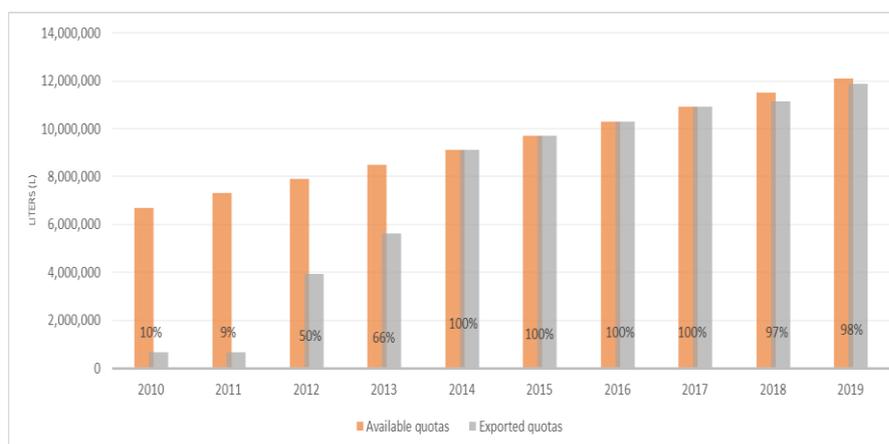
At the same time, in the analyzed period, both coefficients tend to decrease. Such figures only confirm the previous finding that the concentration of wine export, regardless of whether it is bottled or in bulk, in the total exports of the country, is very small.

Utilization of wine tariff quotas

According to the Association of Wines from Macedonia, the main trading partner for the export of Macedonian wine is the European Union, and the second one behind it is CEFTA. However, considering that the Republic of North Macedonia is not a member of the European Union, it trades freely with it up to a certain quantity, until it fulfills the foreseen tariff quotas. At the moment of meeting the tariff quotas, the European Union activates the customs duties.

In chart no.9 it is shown the fulfillment of tariff quotas for bottled wine from 2010 to 2019. From the data, it can be noted that Macedonian exporters faced challenges in fulfilling the available quota every year.

Chart 10: Utilization of tariff quotas for the export of bottled wine



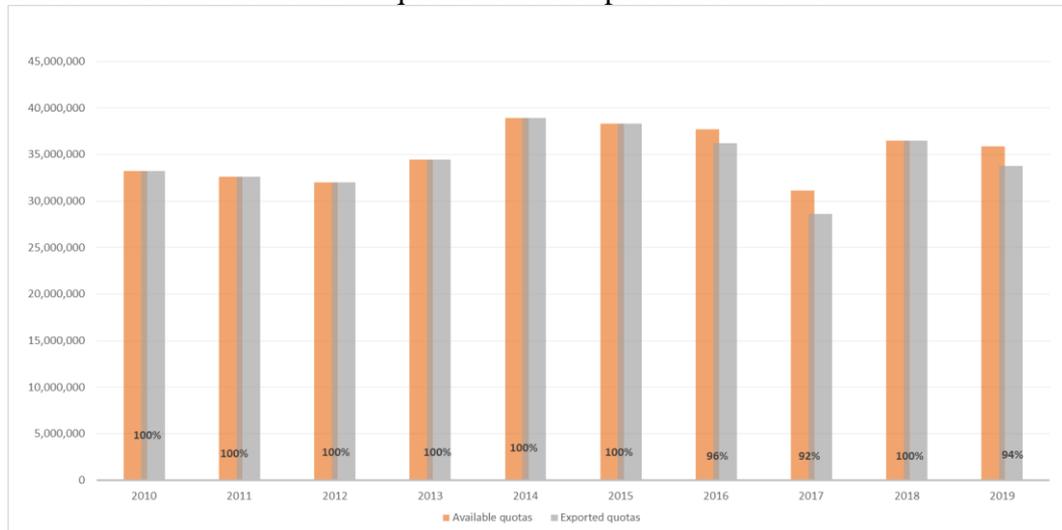
Source: Taxation and Customs Union, TARIC goods nomenclature information, Association of wines of Macedonia; https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/what-is-common-customs-tariff/taric_en; <http://winesofmacedonia.mk/>

There was a record low tariff fulfillment in 2011, when it was only 9%. In the period from 2010 to 2013, it varied, with 50% in 2012 and 66% in 2013. From 2014 to 2017, the fulfillment of export quotas was 100%, and in the last two observed years, it was slightly less than 100%. Otherwise, as can be seen from the data, throughout the entire period, the European Union continuously increased the available quotas for the export of Macedonian wines. The achievement of the quotas is due to the fact that a large part of the wine producers improve their products and increase exports, and also the wine cluster in the country is very strong and provides support to the producers.

Unlike bottled wine, the situation with the export quotas of bulk wine is somewhat different. Macedonian exporters, in all years, used almost the maximum of the tariff quotas for the export of bulk wine (Chart no. 11). This is largely because, in

the first years, much more bulk wine was produced. The exceptions are 2016, 2017 and 2019, when the export quotas for bulk wine were not fully used.

Chart 11: Utilization of tariff quotas for the export of bulk wine



As for the available quotas of the European Union for the export of bulk wine, they vary from year to year, and since 2014, except for 2018, they tend to decrease.

Recommendations

The Republic of North Macedonia has the capacity to position on an established place on the world wine map and the tendencies in the analyzed time series indicate that. By investing in the wine industry, the country has the potential to climb even higher on the wine pedestal. The focus of Macedonian winemakers in recent years has increasingly been placed on bottled wines that have a higher added value. The surplus in the trade balance should continue to be maintained, and Macedonian consumers should become more familiar with domestic wine products. Maximum utilization of tariff quotas is required.

Conclusion

This paper explains some of the theoretical aspects in international trade as well as the international movement of goods. Data from relevant institutions was used in the paper, where a descriptive analysis was given and the author's own calculations were made. Several scientific-research methods were used during the work of the paper: analysis and synthesis, statistical method, comparative method, descriptive analysis. Special attention in the paper is devoted to the analysis of the export of wine, as one of the most important export products of the country, from which several conclusions can be drawn. In the period 2009-2019, the export of draft wine decreased, and the export of bottled wine increased. This indicates the

fact that Macedonian wine producers are increasingly focusing on the production of bottled wines, while striving to constantly increase their quality in order to maintain their competitiveness on the global market. Throughout the analyzed period, the Republic of North Macedonia has a trade surplus in wine trade. The Gini-Hirschman coefficient of wine exports and imports does not show a high concentration rate, and although it fluctuated, it declined at the end of the time series. This indicates that wine concentration in overall export decreased while, on the import side the coefficient remained unnoticeably low. Macedonian wine exporters who were oriented towards exporting to the European Union, did not use the maximum available export quotas in all observed years. However, the utilization of quotas is higher for bulk wines than for bottled wines.

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