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CONTENTS

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Skopje, November, 2022

Zoran Janevski, PhD
Editor-in-chief

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EMIGRATION AND REMITTANCES DURING COVID-19: EVIDENCE FROM NORTH MACEDONIA AND SERBIA

Abstract: This paper provides assessment of the changes in the scope and transfer of the remittances in North Macedonia and Serbia, in light of changes in the emigration abroad during the COVID-19 pandemic. The analysis is based on the foreign data sources about emigration abroad, as well as annual and monthly remittance data from national banks of both countries.

Emigration abroad from North Macedonia and Serbia in 2020 continued but with decreased intensity than in previous years. In 2020 compared to 2019, the transfer of remittances through official channels is almost 50% higher in North Macedonia and about 17% lower in Serbia, while in 2021 compared to 2020 it increased in both countries. It implicates significant shift from informal to formal remittance channels due to travel restrictions. The category of other current transfers related to the foreign exchange operations in 2020 compared to 2019, noticed considerable decrease in both countries (for two fifths in North Macedonia and for more than one fourth in Serbia). Their decline is particularly emphasized in July and August due to less migrants' arrivals. In 2021, the increased number of migrants in both countries results with higher inflow of remittances in cash.

Changed transfer of the remittances imply need for: Development of digital financial tools according the migrant's needs; To stimulate the use of bank cards for remittance recipients; Improvement of communication tools

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to promote financial literacy and encourage the use of digital services by migrants and their families; etc.

JEL Classification: F22, F24, I10, O11

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Introduction

COVID-19 pandemic had implications on almost all aspects of people's lives. The restrictions for traveling and lockdowns have caused significant changes in the international migration flows, particularly in temporary and circular migration. At the same time more or less emphasized changes had happened in the impact of these migratory movements, including the remittances, as one of the most important benefits of these movements for the countries of origin and the migrants' families.

Having on mind the significance of the migrants' remittances for the countries in the region an analysis of the COVID-19 pandemic implications on remittances inflows in North Macedonia and Serbia is conducted, as a significant financial resource for both countries. They are mainly determined by the changes of the size and main features of the emigration abroad, economic situation in the receiving countries, lockdowns etc.

The objective of analyses is the assessment of the changes in the scope and transfer of the remittances during the COVID-19 pandemic in North Macedonia and Serbia, as one of the most significant benefits of the emigration abroad for both countries. The analysis is based on available annual and monthly remittance data for the period 2015-2021, observed in light of the changes in the emigration of both countries. Also, the results from recent research of the authors of this paper, referring to the impact of the COVID-19 pandemic on temporary and circular labour migrants from Serbia and North Macedonia, were taken into consideration.

1. REMITTANCES ON GLOBAL LEVEL

The outbreak of the COVID-19 pandemic and the measures taken by many of the countries to prevent the spread of the virus, had consequences on remittances and their transfer. The negative impacts can be seen in three areas. The economic aspect means that as a result of becoming unemployed or getting a reduced income, the migrants have less money to send back home. The migration aspect, is related to the disruptions in the migration flows, meaning that migrants can no longer leave their home country as planned, or need to return (after losing their job and/or permit), and therefore will not send remittances. There is also the disruption in terms of the remittance services, as pro-

viders had to adapt to the lockdown, meaning that the channels through which remittances can be sent are fewer, slower and/or costlier.[1]

All researches made in 2020-2021 discussing the influence of the COVID-19 pandemic to migrants' remittances indicate on the significant changes in the amount of the remittances, due to economic slowdown, changes on the global labor market and the scope of the international migrations.

The adverse effects of the crisis in terms of loss of jobs and earnings, and exposure to and infection with COVID-19, have been disproportionately high for migrants, especially for those in informal sectors and relatively low-skilled jobs. The available data from the World Bank show that at the beginning of the COVID-19 crisis there was a severe decrease in the employment in most of the countries, particularly of the foreign workers. For example, in the United States compared to the pre-crisis level of February 2020, the employment level of foreign-born workers declined by 21% in April, sharper than the 14% decline in the employment of native-born workers. Although in the following period the situation has been slightly improved, still the employment level is lower for 12% for foreign-born workers, while only by 5% for native-born workers.[2] In the same research is accented that in 2020 there was a fall in the stock of international migrants. Namely, as a result of the travel bans and restrictions on cross-border mobility, a smaller number of people have crossed borders during the first six months of 2020. The provisional results of Germany's migration statistics are confirming that, where the number of people arriving in the first half of 2020 was down by 29%.[3]

As a result of the stagnated economic activities in many major migrant-hosting countries, remittance flows were expected to register a decline compared to the pre COVID-19 levels in 2019. The World Bank has estimated that the amount of money migrant workers send home will decline for 7.2% to $508 billion in 2020, followed by a further decline of 7.5% to $470 billion in 2021.[4] The projected decline in remittances will be the steepest in recent history, certainly steeper than the decline (less than 5%) recorded during the global recession of 2009.

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[1]   European Commission, Inform#4 – The impact of COVID-19 on remittances in EU and OECD countries, Series of EMN-OECD informs on the impact of COVID-19 in the migration area, 2020, p.1

[2]   World Bank Group, KNOMAD, Phase II: COVID-19 Crisis through a Migration Lens, Migration and Development Brief 33, October 2020, p. 3

[3]   Ibid., p. 4

[4]   Ibid., p. 7

However, based on the World Bank Group's available data on remittances, remittance flows have proved to be resilient during the COVID-19 crisis. In 2020, officially recorded remittance flows to low- and middle-income countries reached $540 billion, only 1.6% below the $548 billion seen in 2019.[5] One of the main reasons for remittance flows resilience during the crisis was migrants' desire to help their families, to send money home by cutting consumption or drawing on savings. Other drivers included fiscal stimulus in host countries that resulted in better economic performance, as well as the shift in flows from informal to formal channels. There was a greater use of digital remittance channels, because due to the travel bans and lockdowns it was harder to carry the remittances in cash. Starting from June 2020, remittance flows through digital channels increased, especially for migrants with access to bank accounts and credit cards. Recent data showed that cross-border remittances processed via mobile money increased by 65% in 2020 (from $7.7 billion in 2019 to $12 billion in 2020), reaching over $1 billion in transactions sent and received each month.[6] Since digital remittances are better recorded than cash remittances, especially those carried by hand or sent through other informal channels, official data are likely to record more remittances even if the true size of remittances may be falling.

Considering the findings of recent researches, as well as the available data on the remittances on global level it can be noted that there are several key factors which can help to explain why the decline in remittances was not acute as earlier predicted. Thus, there was an increase in the use of digital transfers, such as mobile money, and the shift from informal to formal channels, particularly when the travel restrictions imposed by COVID-19 pandemic made harder for people to access physical remittance service providers or to carry remittances in cash. Also, remittances proved to be countercyclical during times of crises, because when migrants are able to, they send larger amounts of money to their countries of origin in order to help their families when needed. Considering the fact that the migrants present a large part of the labor force in many countries, and because key sectors continued to operate despite the pandemic, job losses for some migrants were not as widespread as initially predicted. One of the factors is the fact that more established diaspora was better prepared and able to continue to send money home to family in their countries of origin.[7]

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[5]   Ibid., p. 1

[6]   Andersson, Simon K. and Manjang Nika Naghavi, The State of the Industry Report on Mobile Money 2021, London: GSMA, 2021, p.5

[7]   IOM, UN Migration, Understanding the migration & mobility implications of COVID-19,

During COVID-19 pandemic due to loss of income and economic slowdown, the need for financial support for families back home has risen, particularly for essential goods and services including health care. Therefore, remittances remain if not became even more important consumption smoothing mechanism for the recipient households and, as such, they form an increasingly important (private) element of global social protection systems.

2. CHANGES IN THE EMIGRATION FROM NORTH MACEDONIA AND SERBIA

The number of Macedonian and Serbian citizens who are permanently or for a longer time abroad, as well as the temporary and circular emigration, in last decades, is noticing continuous and significant increase. In absence of comprehensive data from domestic sources, this is shown by the migration stock data of international organizations and of the receiving countries. According to the Atlas of Migration 2021 data, in 2020 compared to 2015, the migration stock of both countries increased, by more than 130 thousand (North Macedonia) and for 185 thousand persons (Serbia). These data are confirming the rising trend of emigration abroad, but can be assessed as underestimated compared to the real volume of the migration stock of both countries.
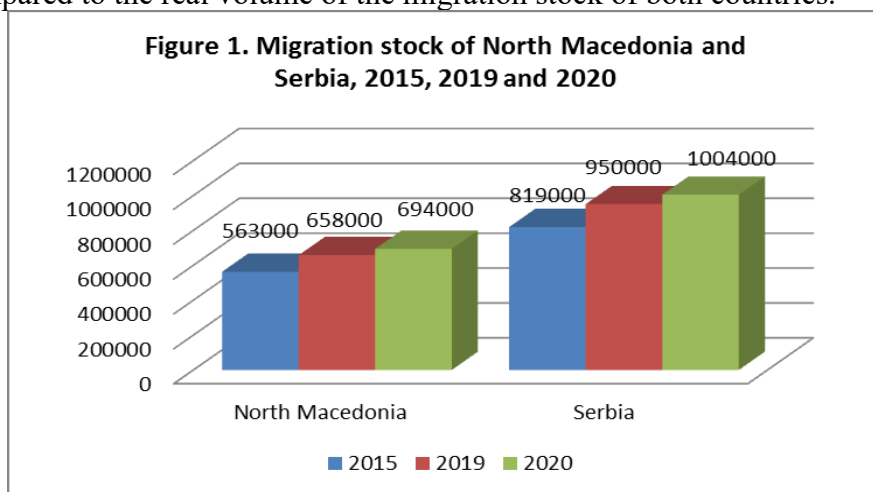
Source: European Commission, Atlas of Migration 2021

The emigration increase is also confirmed by Eurostat data which show that the number of Macedonian and Serbian citizens in the European receiving

countries in 2021 is higher than in 2019 (Table 1). This means that the emigration from both countries continued, despite the restrictions on the population movement due to COVID-19 pandemic, but with significantly lower intensity, particularly in 2021.
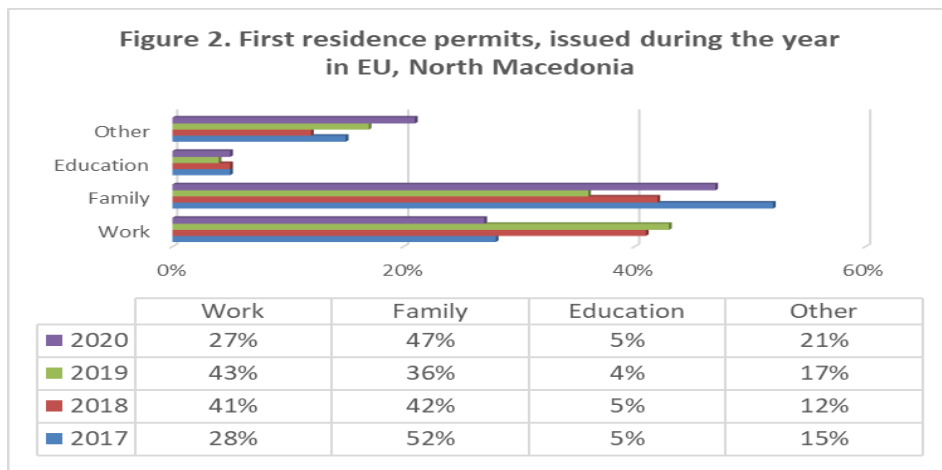
Table 1. Emigration stock of North Macedonia and Serbia in EU countries, 2011-2021

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
North Macedonia	156197	240200	249294	260584	273370	285707	280206	285717	292928	299506	300918
Serbia	218128	432813	427623	437287	495154	502991	495063	509923	524800	537174	536517

Source: Eurostat database, Migration and migrant population statistics, https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do
https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Decreased intensity of the emigration abroad from North Macedonia and Serbia, during COVID-19 pandemic is confirmed and by the Eurostat data on the first residence permits issued during the years. The total number of first residence permits for Macedonian citizens in EU countries have oscillating trend. In 2017 it amounts 16404 permits, in next years they increased from 24040 (2018) to 26653 permits (2019). In 2020 their number was 16338 permits, which means decrease for about 39% compared to previous year.

At the same time significant changes happened in the structure of first residence permits related to reasons for their issue. They are manifested in considerably high share of those issued for work in 2018 and 2019, while in 2020 they reached the same level from 2017 (Figure 2). In 2017 prevails the share of permits for family members (52%) and it is relatively higher than in 2020 (47%), compared to previous two years. It means that during the pandemic, the family reunion abroad has continued. As for the residence permits for education their share remains small and almost the same. Rising trend is noticed for the permits issued due to other reasons, which in 2020 reached on fifth of total issued permits (21%).

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Figure 2. First residence permits, issued during the year in EU, North Macedonia

	Work	Family	Education	Other
2020	27%	47%	5%	21%
2019	43%	36%	4%	17%
2018	41%	42%	5%	12%
2017	28%	52%	5%	15%

Source: European Commission, Atlas of Migration 2021

Previously identified changes had influence on the number of valid residence permits at the end of 2019 and 2020, when their number decreased from 220846 to 205736 permits, or for nearly 7%. At the same time the share of family residence permits remains dominant, noticing rising trend and reaching 50% in 2020 (Figure 3). Decreased participation is characteristic for work and education permits, while of those for other reasons remains the same. In the observed years there is a decline of the number of long-term residence permits (from 132252 to 126371), while an increase of their share in total valid residence permits (from 59.9% to 61.4%).

Figure 3. Valid residence permits at the end of the year in EU, North Macedonia

Source: European Commission, Atlas of Migration 2021

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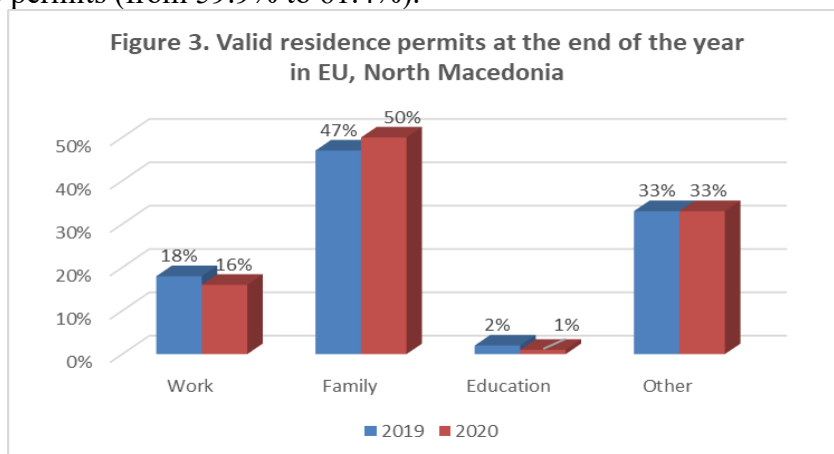
Data for the total number of first residence permits for Serbian citizens in EU countries also have fluctuating trend. In the period 2017-2019 it is increasing from 39673 permits, to 51057 and to 62190 permits. In 2020 their number was decreased for about one third (34.3%) and their number (40872) is almost similar to the one in 2017.

The structure of the first residence permits related to reasons of their issue during the year in Serbia is rather different then in North Macedonia. Throughout the entire period the share of work permits prevails, but with significant change in their numerical values. In 2018 and 2019 it is higher than 50%, while in 2017 and 2020 it is considerably lower (43% and 40%). As for the share of the family members' residence permits they constantly decrease until 2019, but in 2020 it increases again, reaching one third as in 2017 (Figure 4). Regarding the residence permits for education their share is declining and in last two years amounts 4%. Oscillating trend is noticed for the permits issued due to other reasons in the period 2017-2019, and relatively high increase in 2020 when they get 23%.

Figure 4. First residence permits, issued during the year in EU, Serbia

	Work	Family	Education	Other
2020	40%	33%	4%	23%
2019	52%	25%	4%	19%
2018	53%	30%	5%	12%
2017	43%	34%	6%	17%
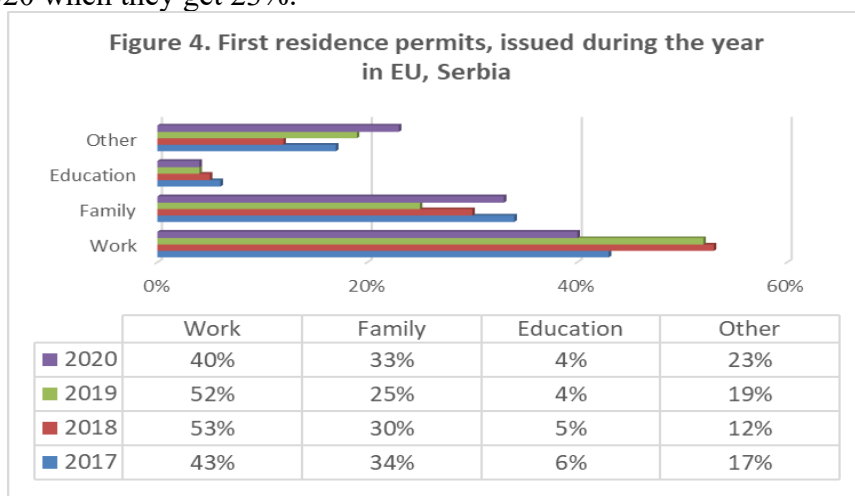
Source: European Commission, Atlas of Migration 2021

The stock data for the number of Serbian citizens abroad with valid residence permits declined from 503757 (2019) to 425599 (2020), or for 15.5%. In terms of the reasons for getting valid residence permit there aren't any changes in both analyzed years. In Serbia, prevails the share of issued permits for other reasons (more than 50%), relatively lower is that of family reasons (32%) and two times lower is of those for work (Figure 5). In last two years the number of long-term residence permits of Serbian citizens remains almost the same,

305780 (2019) and 303497 (2020). Their share in total valid residence permits rose from 60.7% to 71.3%, respectively.

Figure 5. Valid residence permits at the end of the year in EU, Serbia
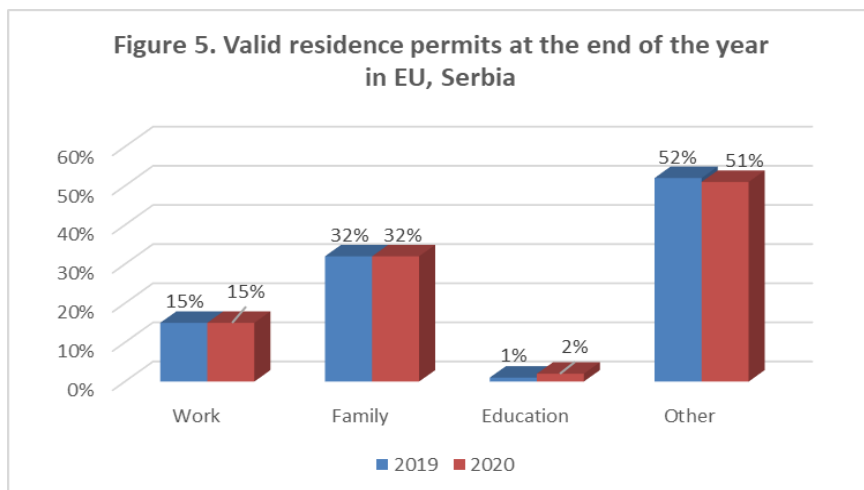
Source: European Commission, Atlas of Migration 2021

There are many indications displaying that in the last decade, migration for work has become the dominant category of migration flows from North Macedonia and Serbia, while temporary and circular migration has considerably increased. This is largely the result of a significant increase in migration for work, which gradually intensified during the 2010s, after entering to the so-called white Schengen list. A large part of them refers to a short stay (up to 3 months), where family members generally remain in the country of origin. Also, these short-term migrations to a great extent are not included in the statistics of international migration. The largest number of labor migrants is directed towards Germany, Austria, and in the case of Serbia, towards the new EU members, among which are the former republics of the SFRY, Slovenia and Croatia.[8] Considering the entire above, international migration has significant impact on the migrants' remittances inflows in both countries.
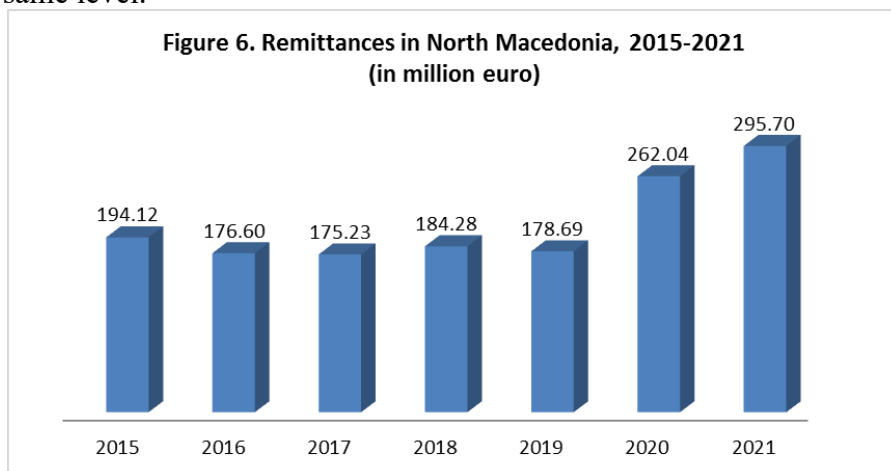
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[8]   Arandarenko M., Migracije, kvalifikacije i tržište rada, u (Vukovic, D. ed.), Nacionalni izveštaj o ljudskom razvoju – Srbija 2022, Ljudski razvoj kao odgovor na demografske promene. Program Ujedinjenih nacija za razvoj (UNDP), Srbija, 2022

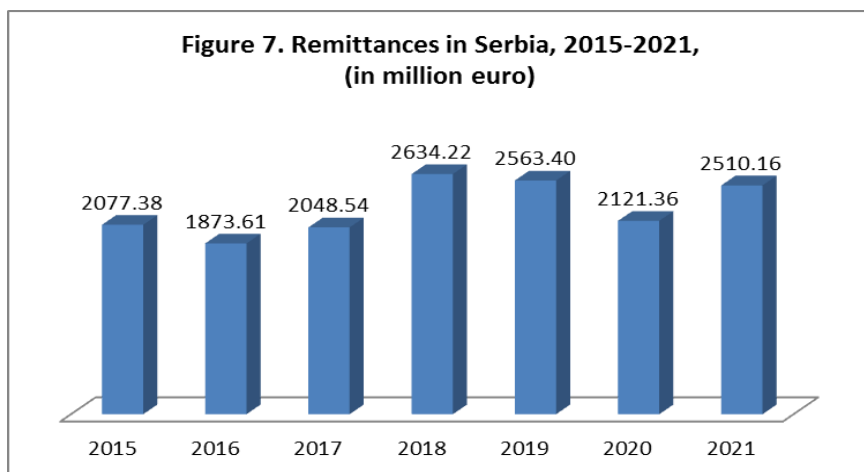### 3. REMITTANCES IN NORTH MACEDONIA AND SERBIA

3.1. Inflow of remittances through official channels

The data from the National Banks of both countries indicate that the inflow of the remittances through the official channels in the period 2015-2019 has fluctuated. In North Macedonia it is with oscillating, but a decreasing trend and its scope didn't reach the 2015 level (Figure 6). Quite different are the changes in Serbia, where the remittances have decreased in 2016 and 2017, but noticed a significant increase in 2018 and 2019 (Figure 7). In this period the changes in the remittances don't correspond with the emphasized emigration abroad from both countries.

The COVID-19 pandemic had influence on the emigration abroad and consequently on the remittances' inflow through official channels in the countries of origin. In 2020, compared to 2019, in North Macedonia the remittances increased by 46.6%, and in Serbia declined by 17.2%. In 2021 compared to 2020, the scope of the remittances has raised in both countries (for 12.9% in North Macedonia and for 18.3% in Serbia). Related to the pre-pandemic period, i.e. to 2019, the remittances' scope through official channels in 2021 in North Macedonia was higher for 65.5%, while in Serbia it has almost reached the same level.

Figure 6. Remittances in North Macedonia, 2015-2021 (in million euro)

Source: NBRM, https://nbstat.nbrm.mk/pxweb/mk/Eksterni%20statistiki/

Source: NBS, https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/platni_bilans/

Monthly data on the inflow of remittances through official channels show that in North Macedonia from April 2020 until the end of 2021 the amount of the remittances is higher than in the corresponding months from 2019. In 2021 compared to the previous year they have bigger scope almost in all months (with exception of May, June and July). Nevertheless, these three months remain with highest inflow of remittances in pre-pandemic, as well as in pandemic period (Figure 8).

In Serbia, from the beginning of the COVID-19 pandemic until the end of 2021, the inflow of the remittances remains lower than in the corresponding months of 2019 (with the exception of September and November 2020 and March, November and December 2021). In 2021 in nearly all months, except in September and October, they are higher compared to 2020 (Figure 9).

Figure 8. Remittances in North Macedonia, 2019-2021 (monthly data in million euro)

Source: NBRM, https://nbstat.nbrm.mk/pxweb/mk/Eksterni%20statistiki/

Figure 9. Remmitances in Serbia, 2019-2021 (monthly data, in million euro)
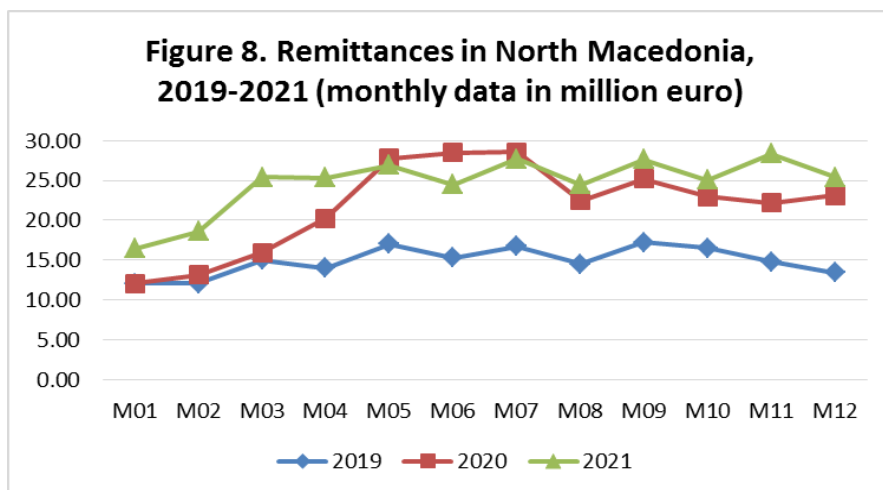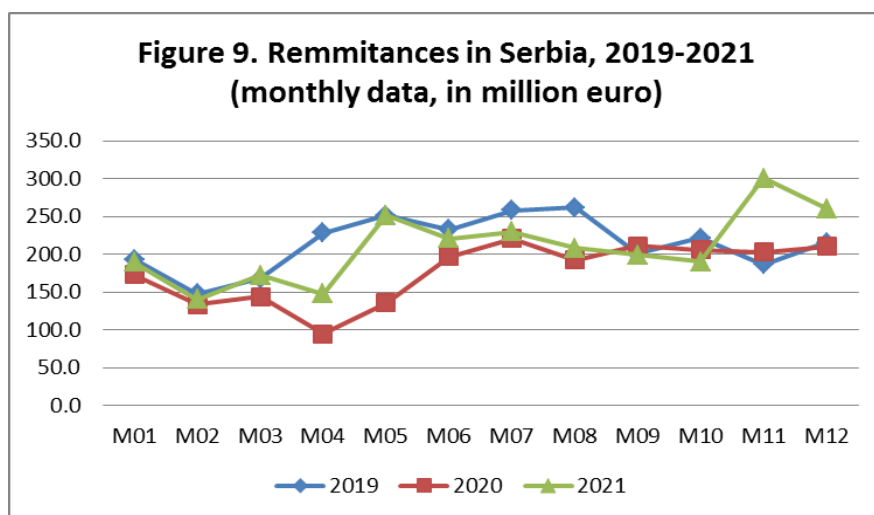
Source: NBS, *https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/platni_bilans/*

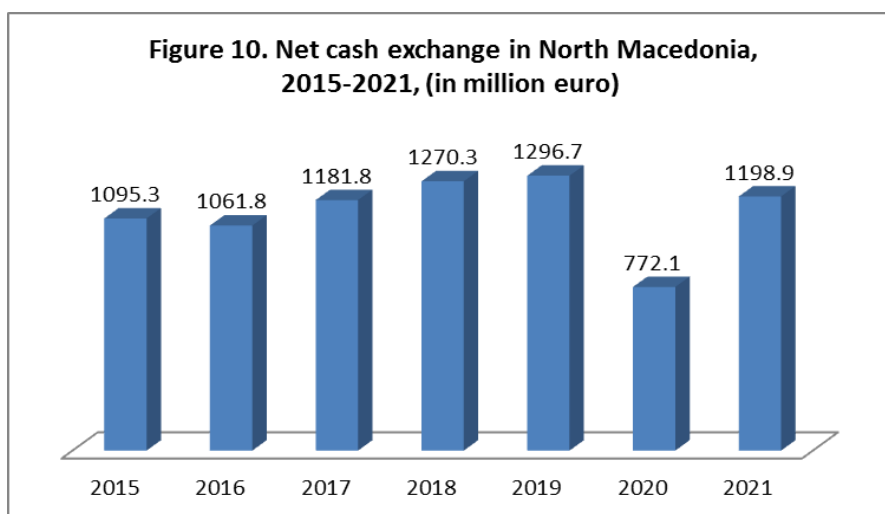Such changes in the last year are determined by the increased number of migrants that came in North Macedonia and Serbia, due to relaxed situation for traveling.

3.2. Remittances through unofficial channels

Apart from the official channels, a significant amount of remittances in North Macedonia and Serbia also comes through unofficial channels or the migrants carry them in cash when they visit the countries of origin or they

send money via family members, relatives and friends. During the COVID-19 pandemic, the receiving countries, as well as the countries of origin has faced specific terms for traveling and lock-downs. It influenced migrants' possibilities to visit their countries of origin, causing changes on remittances' inflow through unofficial channels and net cash exchanges. The available data for net cash exchange confirms these changes.

In North Macedonia in 2020 compared to 2019 net cash exchange decreased by 40.5%, while in 2021 its size was higher for 55.3% than in the previous year (Figure 10). Despite these changes, net cash exchange during the pandemic remains smaller than in the pre-pandemic period.

Figure 10. Net cash exchange in North Macedonia, 2015-2021, (in million euro)

Source: NBRM, https://nbstat.nbrm.mk/pxweb/mk/Eksterni%20statistiki/

In Serbia, the amount of net cash exchange in the period 2019-2020 has also decreased but by 27.4%. In 2021 compared to 2020, it is higher for 36.3% and reaches the level from 2019 (Figure 11).
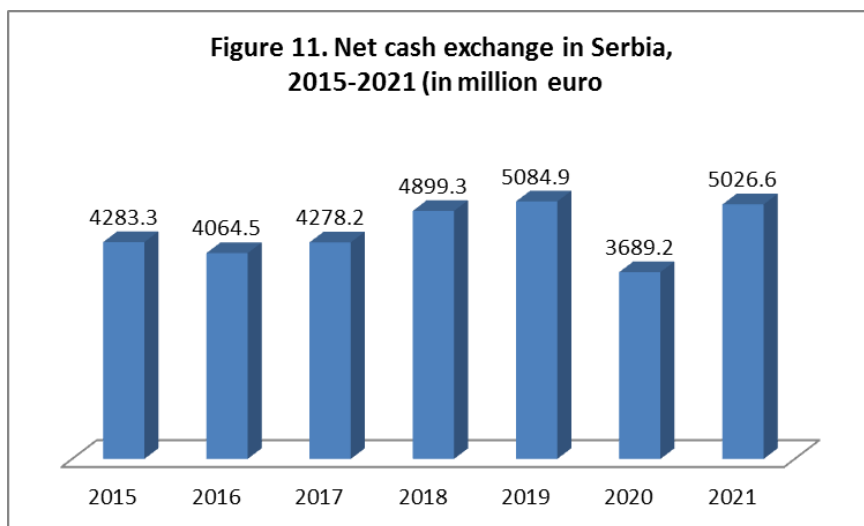
Figure 11. Net cash exchange in Serbia, 2015-2021 (in million euro

4283.3   4064.5   4278.2   4899.3   5084.9   3689.2   5026.6

| 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |

Source: NBS, External sector statistics, https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/

Although it is difficult to determine the share of remittances within the net exchange, results of the researches in both countries show that the changes in the net cash exchange are more or less determined by the inflow of migrants' remittances, particularly in summer months (mainly July and August). In 2020 compared to 2019 the net cash exchange has significantly decreased, in North Macedonia for 57.5% (July) and 61.1% (August), while in Serbia 38.8% and 35.4%, respectively.

With the increased number of migrants that came in both countries in 2021, when the travel constraints were relaxed, the scope of the net cash exchange in the same summer months has considerably increased in comparison to 2020. In July and August, in North Macedonia it was more than two times higher (Figure 12), while in Serbia the increase was for more than 62%, and in both countries almost reached the levels from 2019 (Figure 13).
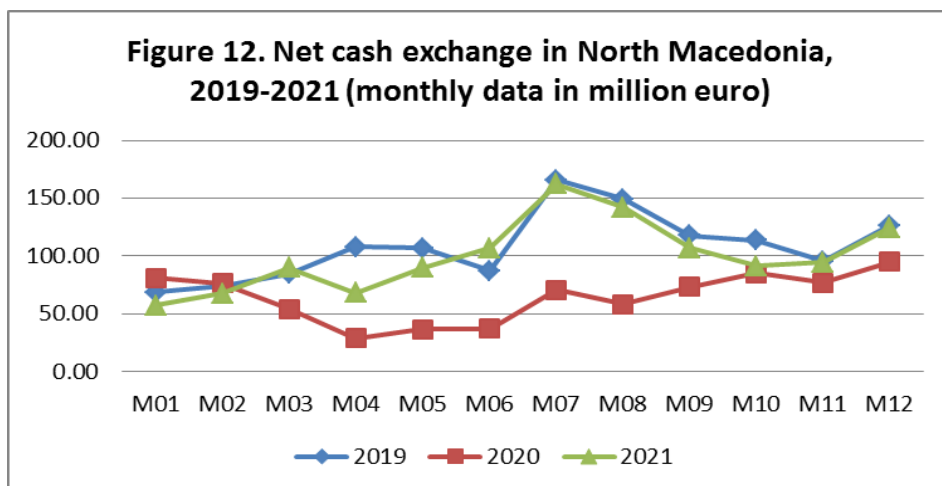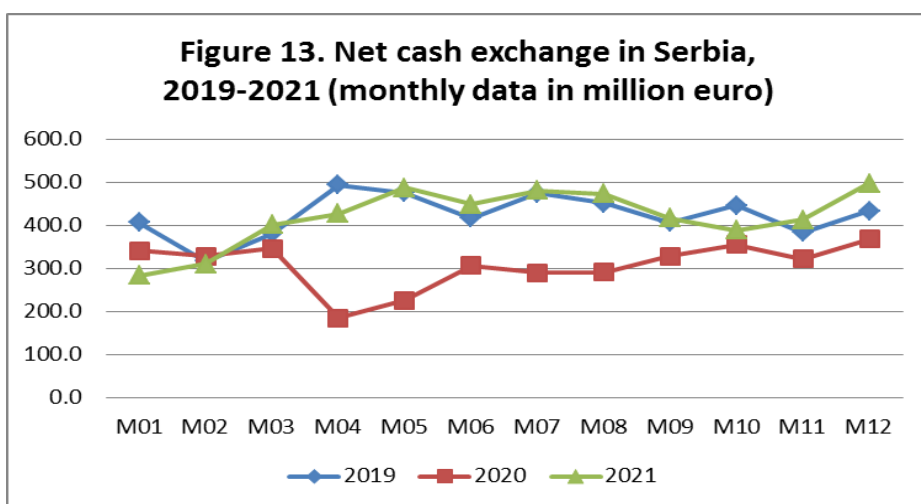
Figure 12. Net cash exchange in North Macedonia, 2019-2021 (monthly data in million euro)

Source: NBRM, https://nbstat.nbrm.mk/pxweb/mk/Eksterni%20statistiki/

Figure 13. Net cash exchange in Serbia, 2019-2021 (monthly data in million euro)

Source: NBS, External sector statistics, https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/

Recent research of the authors related to the impact of the COVID-19 pandemic on temporary and circular labour migrants from Serbia and North Macedonia shows that 90% of respondents from Serbia and 55% from North Macedonia were bringing the money to the country of origin (either on accounts, in cash or by sending remittances).[9] About one-third of all respondents

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9   Lukić V., Predojević-Despić J., Janeska V., Lozanoska A.: How is COVID-19 reshaping temporary and circular labour migration: Serbia and North Macedonia perspectives, Forum geografic. Studii și cercetări de geografie și protecția mediului, Volume XX, Issue 1 (June 2021), pp. 55-65 (11), http://dx.doi.org/10.5775/fg.2021.051.i

that were interviewed reported that they send remittances through the banking system and other official channels. This means that most of their earnings abroad they transfer to the countries of origin in cash. Sometimes respondents combine ways of sending remittances, meaning that they use official channels only occasionally for birthdays and holidays or if it is necessary or urgent to send money to their families.

Conclusion

The impact of the COVID-19 pandemic on remittances is twofold. Measures to restrict movement in order to curb the spread of the virus have impact on the scope of emigration abroad, in particular the temporary and circular migration. At the same time, slowdown of the economic growth and changed conditions on the labor market, have affected the available funds of the Macedonian and Serbian citizens abroad. It has a significant impact on changes in the flow of remittances in North Macedonia and Serbia and made it harder to transfer the part of remittances that migrants carry in cash.

Based on the analysis of available data and information on the inflow of remittances to North Macedonia and Serbia during the COVID-19 pandemic, the following can be concluded:

- ✓ Major changes are evident in the inflow of remittances from migrants in both countries. Manifested differences in the intensity of these changes are determined by several reasons: the structure of the migration contingents, the presence of permanent and temporary / circular migration, the tradition and family ties of migrants, etc.
- ✓ The changes in the transfer of remittances through the official channels are different. In North Macedonia historically largest increase in the inflow of remittances through the official channels is noticed in 2020 and 2021, while in Serbia after their decline in 2020, in 2021 they are gradually returning to the pre-pandemic level.
- ✓ The inflow of remittances through unofficial channels and in cash in 2020 and 2021 was largely determined by the arrival of migrants in both countries.

The great importance of migrant remittances for strengthening the economies of North Macedonia and Serbia and for improving the well-being of family members who are left behind is indisputable. During the COVID-19 pandemic at an aggregate level, the impact of remittances remains significant for both countries, despite the manifested trends. In that sense, in North

Macedonia the share of remittances as % of GDP amounts: 2.8% (2017), 2.7% (2018), 2.5% (2019) and 3.4% (2020), while in Serbia the numerical values of this indicator were: 8.1%, 8.8%, 8.2% and 7.3%, respectively.[10] The remittances are even more important in terms when the economic growth is slowing down; the economic activity of the population is reduced; when there is a growing unemployment and poverty, as well as rising problems of the social and health care systems in North Macedonia and Serbia.

In these circumstances, remittance flows have impact on the livelihood improvement of the receiving households, by providing financial resources to cover basic living expenses, to compensate the rising health care costs, as well as by enabling investment in human and other capital. The higher inflow of remittances in 2021 has stimulated consumption and influenced the revitalization of economic activities in some of the sectors affected by the pandemic, as well as has reduced poverty growth in both countries.

No one knows how long the pandemic will last. In the new circumstances, a changed approach to remittance transfer is necessary. That includes: Development of digital financial tools according the end user's needs and preferences; Stimulating the use of bank cards for remittance recipients; Improvement of communication tools to promote financial inclusion and literacy, and encourage the use of digital services by migrants and their families; Supporting micro-finance organizations to process cashless payments and open savings accounts; etc.

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(Original scientific paper)

QUALITY OF LIFE INDICATORS (NATURAL AND LIVING ENVIRONMENT) AND AIR POLLUTION AWARENESS - THE EXAMPLE OF SKOPJE, REPUBLIC OF NORTH MACEDONIA

Abstract: The state of the environment has a significant impact on the quality of life. Citizens are becoming more aware of the benefits of a high-quality environment, from basic rights like access to clean water to aspects like creating a noise-free living and working environment with access to nature and green areas.

Environmental quality indicators, environmentally responsible behaviour, and consumption of environmental services are used to evaluate quality of life. At the global level, various types of indicators that can be used to measure the quality of the environment that affects citizens' quality of life can be identified. These indicators are linked and provide an objective and precise criterion of the level of pollution and its impact on the quality of life of citizens.

Air pollution awareness is a critical component of incorporating environmental indicators and improving citizens' quality of life. Although no relevant data or studies on the link between the citizens' quality of life as measured by environmental indicators in the Republic of North Macedonia over the last two years exist, some research conducted during this period indicates a lack of awareness of the issue of air pollution in the capital Skopje.

Keywords: environmental indicators, quality of life, air pollution, public awareness
JEL Classification: O1, O13, O44

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Introduction

Environmental conditions have both direct and indirect effects on people's lives, health, and well-being, and they can have an impact on ecosystems and biodiversity by causing more serious consequences and environmental hazards. As a result, it is critical that all citizens recognize the significance of maintaining a healthy environment in which to live and work.

The Republic of North Macedonia must follow the positive example set by EU member states in raising public awareness of environmental issues that affect various aspects of quality of life. Skopje, the capital, is one of the most polluted cities in Europe and the world, but as one study findings indicate, there is lack of awareness of the extent and causes of air pollution in the capital, implying a poor quality of life for citizens who live and work there.[4]

Improving people's quality of life is a fundamental goal of sustainable development. Specifically, environmental quality is typically measured in terms of sustainability, which is also important for the overall quality of life of all citizens. The environmental dimensions related to quality of life are assessed using a variety of indicators classified according to a set of specific characteristics. The use of these indicators enables the collection of valuable information based on people's perceptions, awareness, and attitudes toward their environment.

1. Environmental indicators - concept and classification

There are various approaches to categorizing natural and environmental indicators used to assess quality of life. Quality of life, according to one approach, can be measured by environmental quality indicators, environmentally responsible behaviour, and consumption of environmental services.[5] These indicators are interconnected and have a positive impact on environmental quality.

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[4]   The study was conducted in period November 2020-March 2021 and used for the purposes of the project: *The quality of life of the population in the Republic of North Macedonia during the Covid-19 pandemic measured through quality of life indicators*, financed by the University od Ss. Cyril and Methodius-Skopje, Republic of North Macedonia

[5]   Dalia Streimikiene: Environmental indicators for the assessment of quality of life *Mykolas Romeris University, Faculty of Economics and Finance Management, Ateities St.20, LT -80303 Vilnius, Lithuania* Available online 19 October 2015, p. 67-79

Environmental quality indicators address a variety of environmental issues, including soil, water, air, and waste. Saving resources and energy, using renewable energy sources instead of fossil fuels, recycling waste, and properly managing and disposing of wastewater are all examples of environmentally responsible behaviour. The consumption of environmental services as a significant factor for life quality is measured by environmental indicators that have a negative impact on the environment, such as air, water, and land pollution from waste.[6]

Quality of life indicators according to Eurostat present statistical data on the quality of life in the countries of the European Union (EU).[7] According to Eurostat reports, the measurement of quality of life is based on indicators that provide a detailed analysis of dimensions (8+1) that can be measured statistically to represent different complementary aspects of quality of life, supplementing the indicator that traditionally uses GDP as a measure of economic and social development. Eight of these dimensions refer to the functional abilities that citizens should possess in order to achieve their well-being effectively, based on their own values and priorities. The final dimension is the personal attainment of life satisfaction and well-being.[8]

Eurostat's reports sublimate and combine data obtained by applying environmental indicators on pollution, dirt, and noise exposure with data from the European Environment Agency (EEA) on fine particle exposure of the urban population. Because environmental factors can significantly influence an individual's choices (for example, deciding where to live), these aspects are also examined in terms of potential links between the risk of poverty and exposure to specific environmental conditions. Individuals are more likely to live in areas with environmental problems if they are more exposed to the risk of poverty.[9]

[6]   Ibid

[7]   European Union: Final report of the expert group on quality of life indicators, *Publications Office of the European Union, 2017*, https://ec.europa.eu/eurostat/documents/7870049/7960327/KS-FT-17-004-EN-N.pdf/f29171db-e1a9-4af6-9e96-730e7e11e02f, accessed: 08.09.2021

[8]   https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Eurostat, accessed: 11.09.2021

[9]   https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_indicators_-_measuring_quality_of_life, accessed: 10.09.2021

The indicators of the natural and living environment establish:[10]
- exposure to pollution, dirt and other environmental problems
- the exposure to pollution, dirt and other environmental problems according to the degree of urbanization
- exposure to air pollution of the urban population
- the exposure of the population to air pollution
- noise pollution from the neighbourhood or from the place of residence (the street)
- noise pollution from the neighbourhood or from the place of residence (street) according to the degree of urbanization.

Environmental indicators from the quality of life perspective provide important data and assessments of an individual's environmental awareness. In doing so, it combines pollution, dirt, and noise indicators with data from the European Environment Agency (EEA) on the exposure of the urban population to fine particles (a form of air pollution linked, among other sources, to diesel emissions engines). Because environmental factors can influence an individual's choices (for example, where to live), these aspects are also investigated from the standpoint of potential links between poverty risk and exposure to such environmental conditions, given that people at risk of poverty frequently live in areas characterized by environmental problems. These issues, in turn, can affect their quality of life (for example, by affecting their health or by reducing the value of the property they live in).

2. Quality of life and environmental indicators in EU countries

According to Eurostat reports, below is a brief overview of the quality of life in some EU countries, measured according to environmental indicators for 2019.[11]
In 2019, 15.1% of the EU population is exposed to pollution, dirt, and other environmental problems, ranging from 33.9% in Malta to 5.9% in Croatia. (Figure 1).

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[10] European Union: Quality of life in Europe-facts and views, Publications Office of the European Union, 2015, https://ec.europa.eu/eurostat/documents/3217494/6856423/KS-05-14-073-EN-N.pdf/742aee45-4085-4dac-9e2e-9ed7e9501f23?t=1433141890000, accessed: 10.08.2021

[11] European Union: Eurostat regional yearbook, *Publications Office of the European Union, 2021,* https://ec.europa.eu/eurostat/documents/3217494/13389103/KS-HA-21-001-EN-N.pdf/1358b0d3-a9fe-2869-53a0-37b59b413ddd?t=1631630029904, accessed: 10.09.2021

Figure 1. Population exposed to pollution, grime or other environmental problems, EU, 2010-2019
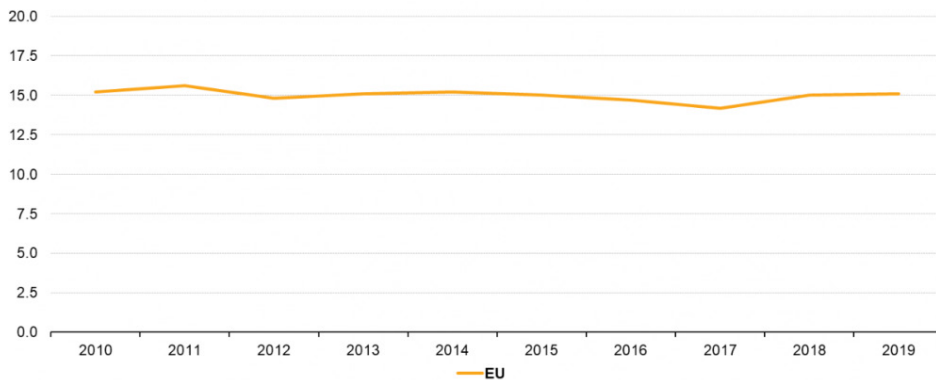
Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_ indicators_-_natural_and_living_environment#Key_messages*, accessed: 9.10.2021.*

Environmental problems and pollution are associated with lower levels of citizen well-being, according to indicators used to determine exposure to pollution, dirt, and other environmental problems based on the degree of urbanization. According to these figures, the percentage of EU citizens exposed to pollution and other environmental issues dropped from 15.2% in 2010 to 14.2% in 2017, but then rose to 15.1% in 2019.

Figure 2. Pollution, grime or other environmental problems, by degree of urbanisation, 2019 (% share)
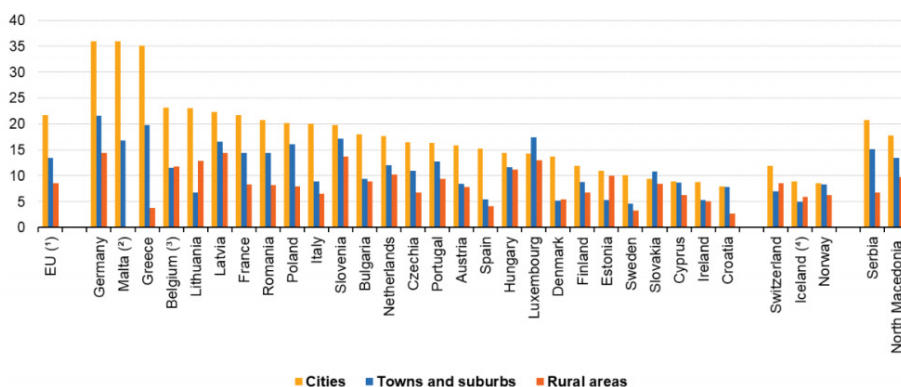
(¹) Estimate.
(²) Low reliability.
(³) Break in series.
(⁴) 2018 instead of 2019.

Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_ indicators_-_natural_and_living_environment#Key_messages, accessed: 9.10.2021.

In terms of urban air pollution exposure (exposure of the urban population to particulate matter), data show that urban residents are more likely to be affected than people living in rural areas. The disparity can be quite significant, with percentages exceeding 20% in Germany (21.6%) and even 30 percentage points in Greece (31.3%). In 2007, the EU urban population was potentially exposed to 29.3 g/m3 of PM10, and by 2019, it was potentially exposed to 20.5 g/m3 of PM10. A comparison between 2010 and 2019 (Figure 3) reveals a general decrease in the potential exposure of urban populations to PM10 across EU Member States.

Figure 3. Exposure of the urban population to particulate matter, 2010 and 2019 (micrograms per cubic metre; μg/m³)

Note: the indicator shows the population-weighted concentration of PM10 to which the urban population is potentially exposed, covering fine and coarse particulates (PM10) whose diameter is less than 10 micrometres.
Malta: not available.
(¹) 2013 instead of 2010.

Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_indicators_-_natural_and_living_environment#Key_messages, accessed: 9.10.2021.

In terms of noise pollution from the neighbourhood or the place of residence (street), data show that 17.3% of the EU population reported being exposed to noise from neighbours or the street in 2019, 3.3 percentage points lower than in 2010. Exposure to ambient sound levels above normal comfort levels is formally defined as this type of pollution. It can have serious direct and indirect health consequences, including hypertension, high stress levels, sleep disruptions, and, in severe cases, tinnitus or hearing loss. Eurostat's data is based on self-reported noise disturbance from neighbours or the street, and it shows how noise can affect an individual's quality of life.
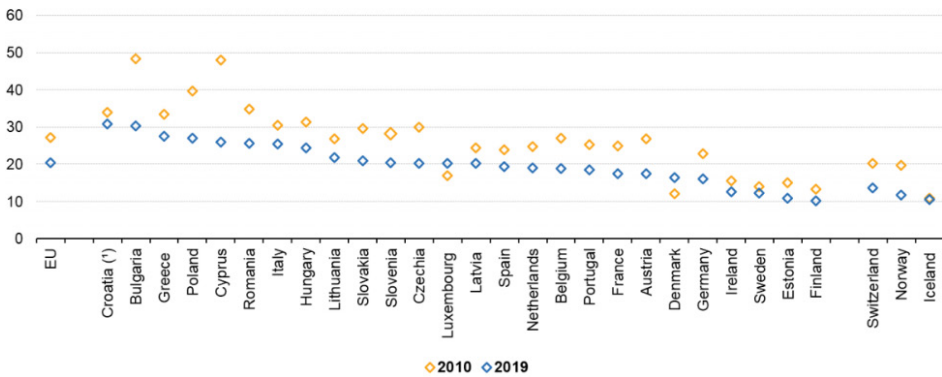
Figure 4. Population reporting noise from neighbours or from the street, EU, 2010-2019
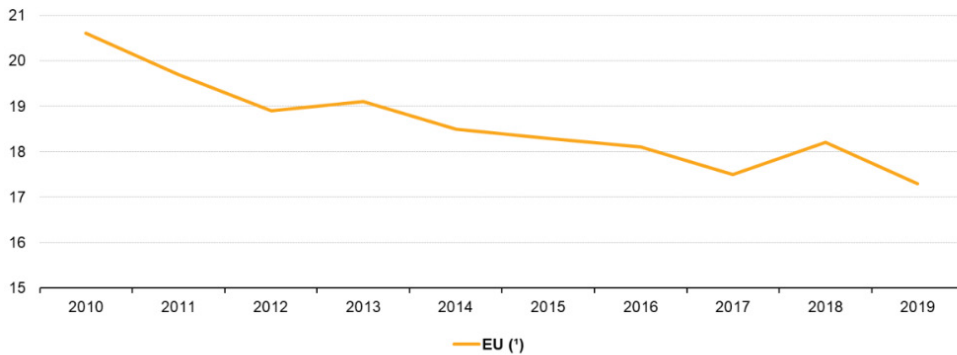
(') Estimate.

Source: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_indicators_-_natural_and_living_environment#Key_messages, accessed: 9.10.2021.

In 2010, around a fifth (20.6%) of the EU population reported exposure to noise pollution that was above their comfort level. This share decreased almost continuously between 2010 and 2017 and by the end of the considered period it was lower by 3.3 percentage points, to 17.3% (Figure 4).

3. Air pollution and quality of life in the city of Skopje

Environmental pollution, particularly air pollution, has been a problem in the Republic of North Macedonia for many years, and the country has taken and continues to take measures to address it. Globally, the country ranks among the worst affected by air pollution, with a premature death rate higher than in most EU countries. Every year, 2,574 people die as a result of air pollution. At the national level, the residential sector is the largest source of harmful PM 2.5 particles are emitted when solid fuels are burned in homes. Energy, industry, agriculture, and transportation are other sources of PM 2.5 particle emissions. Around 60,000 households heat with low-quality wood and coal. Residents even use textiles, plastics, and waste to heat their homes due to a lack of reliable gas supply and the high cost of electricity.[12]

The low average income (the minimum wage is €260) and energy poverty are just two of the issues that contribute to Skopje's severe pollution. An-

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[12] https://prizma.mk/zagaduvaneto-na-skopje-zlostorstvo-bez-zlostornitsi/, accessed: 9.10.2021.

other reason is the city's natural location, which is in a valley surrounded by mountains, that traps fog in the city. A temperature inversion, a natural phenomenon that causes warm air to remain above cold air and contributes to the greenhouse effect, complicates matters even more.

Different indicators for the natural and living environment are used to assess the quality of life in the Republic of North Macedonia. As environmental indicators in 2019, the national State Statistical Office includes the quality of environmental media (e.g., water, air, soil, etc.), environmental problems (e.g., ozone depletion and climate change, environmental protection and biodiversity loss, waste generation and management), and the development of sectoral policies (integrated indicators related to agriculture, tourism and environmental protection policy instruments)[13]. These indicators are numerical values that can be used in the environmental reporting process.

According to the Macedonian Ministry of Environment and Physical Planning (MOEPP), the indicators collect and present data in a predefined manner. The establishment and development of environmental indicators is driven by the need to identify those that are relevant for monitoring the state of the environment and developing state policies, and are in accordance with the 37 indicators of the European Environment Agency Core set of indicators (CSI) approved and adopted in 2004. These indicators should provide answers to key questions for environmental policy development.[14]

Correctly chosen indicators, based on adequately chosen time series, reveal key trends and enable timely and appropriate action by all participants in the environmental protection process, relevant to the development of environmental protection policy. These should include socioeconomic change, air, climate change, water, soil and land use, nature, agriculture, forestry, waste, households, energy, transportation, health, noise, tourism, environmental economics and resource management, and environmental policy instruments. All indicators provide data on the state of the environment and serve as the foundation for policy development and major decisions.[15] They should be available to all citizens of the Republic of North Macedonia, so that everyone can contribute to the process of improving the current state of the environment.

For a long time, the capital Skopje has been one of the most polluted cities in the country, ranking high on official lists of the most polluted cities in Europe and the world. As a result, the population and health of Skopje res-

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[13] www.https://www.stat.gov.mk/PublikaciiPoOblasti.aspx, accessed: 15.9.2021

[14] https://www.moepp.gov.mk/?page_id=746, accessed: 16.09.2021

[15] Ibid, accessed: 09.10.2021

idents are the focus of several strategic documents at both the national and local levels. One of them is the Draft Report on the Strategic Assessment of the Environment, Local Environmental Action Plan for the City of Skopje for the Period 2020-2026.[16] Several thematic areas are elaborated based on an assessment of the state of the environment in the city of Skopje, analysing the relationship between the pressures that the driving forces exert on the environment and the measures that should be taken to reduce the pressures: air, water, soil and land use, regional and biological diversity, climate change, stakeholders in the development of the city of Skopje and their impact on the environment (urbanism, greenery, transportation) (health, public awareness, information, institutional capacities, green policy). Long-term positive effects on population and human health are expected, according to Skopje's strategic plan for the period 2020-2022.

In the Republic of North Macedonia, there are no official data on the quality of life of Macedonian citizens as measured by environmental indicators and have not yet been published a sufficient number of relevant studies that would indicate a link between the quality of life of Macedonian citizens measured through environmental indicators. However, according to studies conducted by various ministries and international organizations (UNDP, UN), the habits of using public transportation, pollution from cars, construction work, and households that use solid fuels for heating are the most frequently identified sources of pollution in Skopje. Traffic is another pollutant that contributes to the increase in greenhouse gas emissions caused by the use of cars by one person, the lack of fast roads, the frequent stopping of vehicles due to traffic lights, and so on.

Findings from these studies suggest that air pollution sources can be significantly reduced if citizens' awareness of the basic causes and consequences of this problem is raised through targeted campaigns and social marketing activities. According to the larger literature on health and environmental awareness, communication about environmental risks must go beyond individual behaviour education in order to empower communities to mobilize to reduce environmental threats. To be effective, social campaigns must first conduct complementary research to determine public awareness and identify target groups of citizens on whom these campaigns and activities will have the greatest impact.

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[16] https://skopje.gov.mk/mk/objavi/strategii/, accessed: 09.09.2021

The level of awareness of citizens in the capital Skopje about the causes of pollution was determined by a survey conducted from November 2020 to March 2021.[17] The research was conducted on a representative sample of respondents in the capital sorted by age, education, ethnicity, and gender. According to findings of this study, citizens do not blame themselves for the pollution problem. In contrary to previous surveys, which identified households and traffic as the major polluters, the citizens of Skopje believe that industry and construction are the primary sources of pollution. They believe that stricter legal regulation is required to encourage conscious and responsible behaviour in construction, industrial facilities, and traffic in order to reduce pollution.

What the research indicates is that citizens in Skopje are unaware of their own habits and behaviour as a source of pollution. As a result, social marketing activities are required to cause a change in each individual's habits and behaviour toward the environment, thereby contributing to their active participation in reducing pollution both locally and globally. According to the study's findings (Figure 5), the majority of respondents believe that, in addition to the construction industry, the main source of air pollution in Skopje is the problem of waste management and waste disposal.

Figure 5. Ranking of the main sources of air pollution in Skopje (Likert scale 1-5)
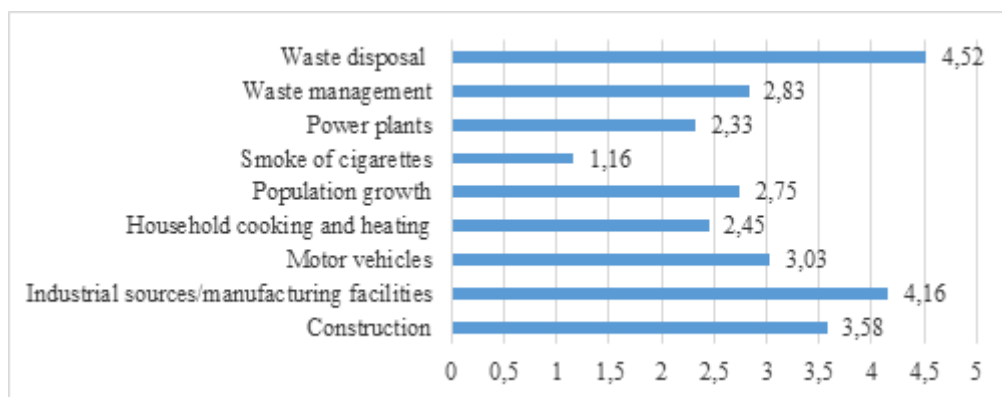
Source: Tatjana Petkovska Mircevska, Natasha Daniloska, Diana Boskovska, Vladimir Petkovski, Meri Karanfilovska: Raising Public Awareness of Pollution in Skopje as a Basis

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for Conducting Social Marketing Activities, *16th SDEWES Conference on Sustainable Development of Energy, Water and Environment Systems,* October 10-15, 2021 in Dubrovnik, Croatia.

Home heating is ranked very low in the survey responses, as illustrated in Figure 5. Such a finding is highly contradictory, given that, according to official reports, it is one of the primary causes of air pollution and implies a lack of awareness about one's personal contribution to human-environment pollution.

It is widely assumed that air pollution in Skopje is a problem caused by the construction industry and the industrial use of fossil fuels. Although these are two of the most significant sources of air pollution, industry and local governments are collaborating to address some of the most serious issues by encouraging the use of clean fuels and supporting investment in new technology. It can be concluded that the majority of Skopje residents are unaware that household emissions increase personal exposure to air pollutants and contribute significantly to total air pollution emissions. This is a clear indication that there is an urgent need to launch targeted social marketing campaigns and raise awareness about air pollution among Macedonia's capital city's residents.

Pollution sources can be significantly reduced if citizens' awareness of the fundamental causes and consequences of the problem is raised through targeted campaigns and social marketing activities. For social campaigns to be effective, it is necessary to assess public awareness and identify the target groups of citizens on whom these campaigns and activities will have the greatest impact. Accurate, timely information can be a powerful tool for mitigating the harmful effects of air pollution. Although there are national environmental risk communication guidelines based on risk and crisis communication principles, little is known about how they are implemented or the effectiveness of existing communication efforts.

Conclusion

Citizens' quality of life and environmental quality are significantly associated, and this interaction can be accessed via various types of indicators. The application of these indicators enables the acquisition of substantial information that is based on people's perceptions of their environment. In this regard, awareness of the issue of air pollution can play a key role in the application of environmental indicators that relate to people' quality of life, as shown

by the example of Skopje, the capital of the Republic of North Macedonia, which is one of the most polluted cities both domestically and internationally.

In EU nations, the majority of people appreciates its (often intangible) rights to have access to environmental resources. The 7th Environment Action Program (7th EAP) of the EU offers direction for environmental policy up to 2020 and a longer-term outlook up to 2050. Protecting, preserving, and enhancing the EU's natural capital; transforming the EU economy into one that is resource-efficient (green and competitive); safeguarding EU citizens from environmental pressures that could endanger their health and well-being; and more are some of its main goals. The EU pledges to considerably reduce noise pollution as part of its action program, for instance by altering how cities are planned or lowering noise at its source. The principal EU policy tool for the assessment and regulation of environmental noise is the Environmental Noise Directive (Directive 0049/2002/EC); noise from home activities, noise from neighbors, noise from workplaces, and noise from inside cars are not covered by this directive.

From the findings obtained and presented, it is evident that each citizen's quality of life is significantly influenced by the natural and environmental surroundings in which he or she resides and works. People's health, wellbeing, and other aspects of their quality of life are impacted by the environment both directly and indirectly. The experiences of EU nations demonstrate that there is a growing need to raise environmental awareness among individuals about environmental issues that have an impact on a variety of areas of citizens' quality of life, both nationally and internationally.

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5   https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Eurostat.

6   https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Quality_of_life_indicators_-_measuring_quality_of_life

7   https://skopje.gov.mk/mk/objavi/strategii/.

8   https://www.moepp.gov.mk/?page_id=746.

9   Tatjana Petkovska Mircevska, Natasha Daniloska, Diana Boskovska, Vladimir Petkovski, Meri Karanfilovska: Raising Public Awareness of Pollution in Skopje as a Basis for Conducting Social Marketing Activities, *16th SDEWES Conference on Sustainable Development of Energy, Water and Environment Systems*, October 10-15, 2021 in Dubrovnik, Croatia.

10   www.https://www.stat.gov.mk/PublikaciiPoOblasti.aspx.

11   Official Gazette No. 80/2021, https://www.mtsp.gov.mk/plati.nspx

ANGELA ZAFIROVA[*] UDK 336.71:502.131.1(497.7)"2019/2021"
BILJANA ANGELOVA[**] (Original scientific paper)

GREEN FINANCING: OPPORTUNITIES AND CHALLENGES FOR THE BANKING SECTOR IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The last decade can be said to be a historic turning point in the fight against climate changes. In the process of adapting to these changes, green financing appears as one of the possibilities for financing projects that are essential for the future of all of us. Green finance is a broad term that can refer to financial investments in sustainable development projects and initiatives, environmental products and policies that encourage the development of a sustainable economy. Potential investors in the process of green financing could be commercial banks, pension funds, insurance companies, which, apart from being driven by profit, would also be active participants in the green transition both in the world and in the Republic of North Macedonia. This is where the main aim of this paper comes from, to analyze the trends of green financing in the Republic of North Macedonia, the challenges which the banking sector experiences nowadays , as well as the sources of green financing available to it. The concluding observations from this research showed that in our country, apart from the voluntary approach to defining guidelines for green instruments, certain financial and regulatory incentives are also needed for the process of green transformation of the financial sector in the Republic of North Macedonia.

Keywords: green financing, green bonds, green credits, EBRD, GGF
JEL Classification: G1, Q5

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Introduction

The last decade could be considered as a historic turning point in the fight against climate change. In the process of adapting to these changes, green financing appears as one of the possibilities for financing projects that are essential for the future of all.

Green financing is a broad term that can refer to financial investments in sustainable development projects and initiatives, environmental products and policies that encourage the development of a sustainable economy. Having regard to the estimates of the current financial needs for green investments, it can definitely be said that the state budgets are far from sufficient to support all projects. That is the reason why there is a need for large amounts of private capital and the active involvement of large institutional investors (OECD, 2006).

The function of international financial institutions is essential in supporting green financing and transition, in several aspects. The most important is that they have a pioneering role in finding and testing new ways of financing through the covenants they impose on their clients. Their role in mobilizing private capital is essential, regarding the process of mobilization through innovative instruments and channelling it into green projects.

The mobilization of capital for green investments, despite the rise of the green agenda in recent years, is still quite limited.

Basically, green financing includes financing public and private projects in environmental goods and services, as well as the prevention and mitigation of climate change.

The subject of this research is the challenge facing the financial sector in the Republic of North Macedonia when it comes to green financing. Bearing in mind that green financing in the Republic of North Macedonia is still in an initial phase, unlike world trends, the financial sector has a wide range of opportunities for the development of green financing that will be analyzed and summarized in this paper.

The main aim of this paper is to analyze the trends of green financing in the Republic of North Macedonia and the challenges facing the banking sector.

In this research will be made an appropriate analysis of the research subject through the collection of secondary objective data. The methods of analysis and synthesis, descriptive methods, comparison methods, quantitative methods, and deductive methods will be used, through which appropriate conclusions will be drawn.

This paper consists of five parts. The first part is dedicated to defining green financing and its essential meaning. The second part deals with topics related to green banking and the emergence of green banks. The third section elaborates on the role of international financial institutions in supporting green financing. The fourth part defines the position of the Republic of North Macedonia in relation to green financing and analyzes the development trends of green lending activities, while the fifth part emphasizes the importance of international institutions supporting green financing, with a special review of EBRD and GGF as one of the most active supporters when it comes to green financing in the Republic of North Macedonia. The last part of this paper contains the concluding observations.

1. Defining green financing and its meaning

Defining green finance is a serious challenge. One of the reasons is that in all the papers the definitions differ from each other, and the second reason is its connection with other "types" of financing such as sustainable financing or responsible investment, however, when talking about financing and investing in environmental projects, it is mostly meant of green financing. The G20 green finance study group defines green financing as the financing of investments that deliver environmental benefits in the broader context of environmentally sustainable development. These environmental benefits include reductions in air, water and land pollution, reductions in greenhouse gas emissions, improved energy efficiency in the use of existing natural resources, as well as climate change mitigation and adaptation and their mutual benefits. The Organization for Economic Co-operation and Development (OECD) defines green finance as finance for achieving economic growth by reducing pollution and greenhouse gas emissions, minimizing waste and improving efficiency in the use of natural resources. In the simplest terms, green financing represents any structured financial activity, product or service, which is created to ensure a better environmental effect (Nelson, 2004).

In recent years, green financing has been the number one priority of the United Nations. Bearing in mind that green financing plays an important role in meeting the goals of sustainable development, the United Nations and its environment team are already actively working with the public and private sectors in an attempt to harmonize international financial systems.
Green financing aims to increase the level of financial flows (from banking,

microcredit institutions, insurance and investments) from the public, private and non-profit sectors to sustainable development priorities. A key part is to be better at managing environmental and social risks, take advantage of opportunities that bring a decent rate of return and environmental benefits, and ensure greater accountability.

Green financing is growing rapidly and represents a significant commercial opportunity for companies dealing with financial services.

In addition to public finances, a significant increase in support from the financial services sector is also needed to achieve the set goals. This not only represents a commercial opportunity for the financial services sector but also an opportunity for the sector to demonstrate its social purpose, playing a key role in the transition to a sustainable world with low carbon emissions.

The financial sector represents a fundamental catalyst for increasing awareness of the need and volume of green financing. Currently, however, the financial sector as a whole is not "green". Banks and investors still provide significant amounts of funds for environmentally destructive activities, including the burning of fossil fuels far above the levels that must be observed to prevent catastrophic climate change.

2. Green banking and green banks

Most of the financing of green projects and investments in sustainable energy sources goes through banks. The term green banking itself can be defined as banking from which there are some benefits for the country to preserve the environment.

The emergence of green banks in the financial sector is a trend in the last five to seven years, although in recent years green financing and green banking have become top topics and priorities of all countries. Green banks are usually publicly capitalized entities, established specifically to facilitate the entry of private investment and capital into domestic infrastructure and industry aimed at reducing carbon emissions, mitigating the effect of climate change, and also other green sectors such as water and waste management.

As a trigger for the establishment of green banks in certain countries can be singled out the fact that in those countries there is a lack of funds for financing and supporting "green" projects.

The fact that they are created to fulfil a certain mission means that the trigger force of these banks is not profit but enabling a clean and sustainable environment. The mission of all green banks is to fight climate change fi-

nancially, however, certain green banks go a step further, which means, they engage in the fight and support to improve resilience and serve low-income communities.

An additional role of these banks is the presentation of profitability from investments in these types of projects, i.e. to act as a kind of catalyst in the development of this market. Green banks had the advantage that, unlike commercial banks, they are free from the pressure of competition.

Everything abovementioned highlights the importance of the existence and development of green banks, but despite this, there are significant barriers that they face.

The main obstacle can be said to be environmental, energy and climate policies and regulations that often favour investments in fossil fuels instead of green infrastructure.

Another barrier that can be singled out is regulatory policies that have unintended consequences.

The lack of appropriate financial instruments and funds with characteristics that private investors are looking for, can be pointed out as the third barrier.

Thus, as an additional barrier appears the lack of objective information, data and skills to assess transactions and underlying risks.

Due to the barriers that exist, the role of green banks in developing countries is taken over by development banks.

3. The role of development banks in green financing

State development banks have a great capacity as a catalyst when it comes to mobilizing key investments in order to transform an economy into a green economy with low carbon dioxide emissions. They are the basic instrument in the last decades with the help of which governments manage to make a serious step in greening the entire economy, as well as develop innovative financial solutions. Supporting these types of projects and investments by development banks is crucial because they require longer terms, low-interest rates, and alternative approaches to collateral evaluation.

In general, several key functions can be singled out for development banks, such as providing countercyclical financing, encouraging innovation and structural transformation, supporting the financing of infrastructure projects, promoting environmental sustainability and combating climate change. A key precondition for a state development bank to play its part consists of two

elements. The first element is to ensure a sufficient level of capital, which is usually provided by the government, while the second element is to mobilize and use private funds in the direction of financing projects that lead to the reduction of carbon emissions and the reduction of the effect of climate change. Banks with their capacity can be indebted more easily on the domestic and international capital market, so they can use these loans in the form of their own lending, according to current plans.

The provision of technical and consulting assistance by development banks for projects and investments related to the green economy is also of crucial importance for all investors who receive enormous assistance for the successful realization of these types of green projects.

4.   The Republic of North Macedonia and green financing

Macedonian banks are increasingly involved in the promotion of the green agenda and represent a kind of promoter of investments in sustainable energy sources. According to the information from the annual reports and the websites of the commercial banks, it can be concluded that the main sources of green financing in the Republic of North Macedonia are the European Bank for Reconstruction and Development - EBRD through the GEFF fund and the GGF (Green for Growth) credit line for energy efficiency.

As at 2022, the National Bank has started publishing data connected to the sources of financing for green financing in the Republic of North Macedonia, which are mainly realized through the so-called green credit lines.

The definition of World Bank is taken as definition for green credits, which the term "green" credit explains as a method of financing that allows the credit user to invest exclusively in projects with a significant positive contribution to the environment and in projects that contribute to the reduction of negative effects from climate change.

Chart 1 – Green credit lines in the Republic of North Macedonia

Source: NBRM, https://www.nbrm.mk/
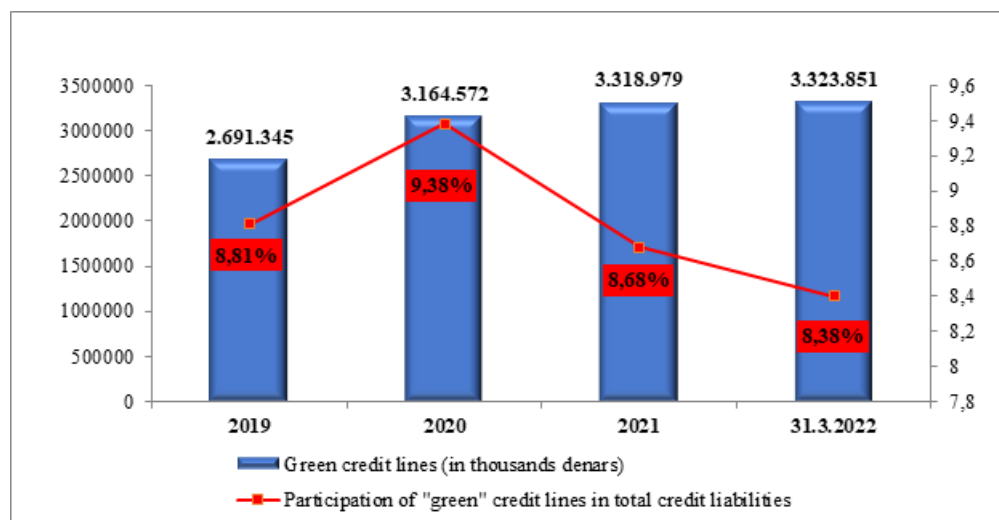
According to the data from NBRM, as at December 31, 2021, presented in chart 1, the liabilities of the banks based on green credit lines are at the amount of 3,318,979,000 MKD. It can be noted that the bank liabilities in the section of green credit lines, as a part of the total liabilities for loans, show a modest trend of declining by 0.7% compared to 2020. One of the reasons for the reduction in the amount of credit lines intended for financing green projects is the Covid 19 pandemic, which forced banks to focus on liquidity, and support of the population and legal entities. The share of credit lines for green financing concerning total liabilities as at December 31, 2021, is 8.68%. If we look at the first quarter of 2022, it can be concluded that the growth of green loans during this year will be significantly increased compared to the current trend.

Chart 2 - Green credit lines divided into bank groups for the Republic of North Macedonia as at December 31, 2021.

Source: NBRM*,* https://www.nbrm.mk/
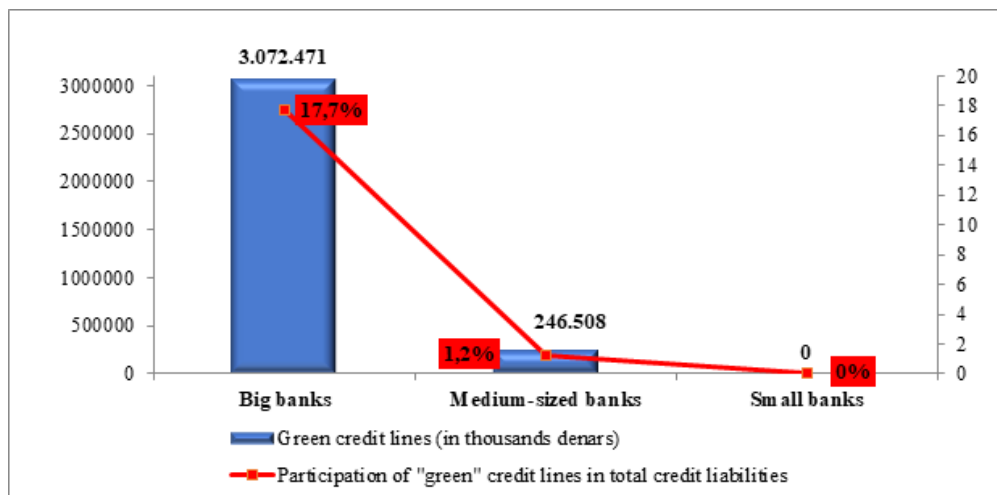
The percentage of green credit lines used by the big 5 banks in relation to medium-sized and small banks is huge, i.e. 93% or 3,072,471,000 denars or 49.96 million euros out of a total of 53.97 as at December 31, 2021. One of the reasons that the concentration is high among the big banks is the trust that foreign creditors have towards the big 5 banks. Another reason that can be mentioned is the large customer base and the potential of big banks for quick and efficient allocation of funds. According to the data submitted to the National Bank, the portfolio of green loans of the big banks is 17.7% in relation to the total liabilities for loans, as at December 31, 2021 (chart 2).

Chart 3 - Green credit lines by customer type for the Republic of North Macedonia as at December 31, 2021.

Source: NBRM, https://www.nbrm.mk/
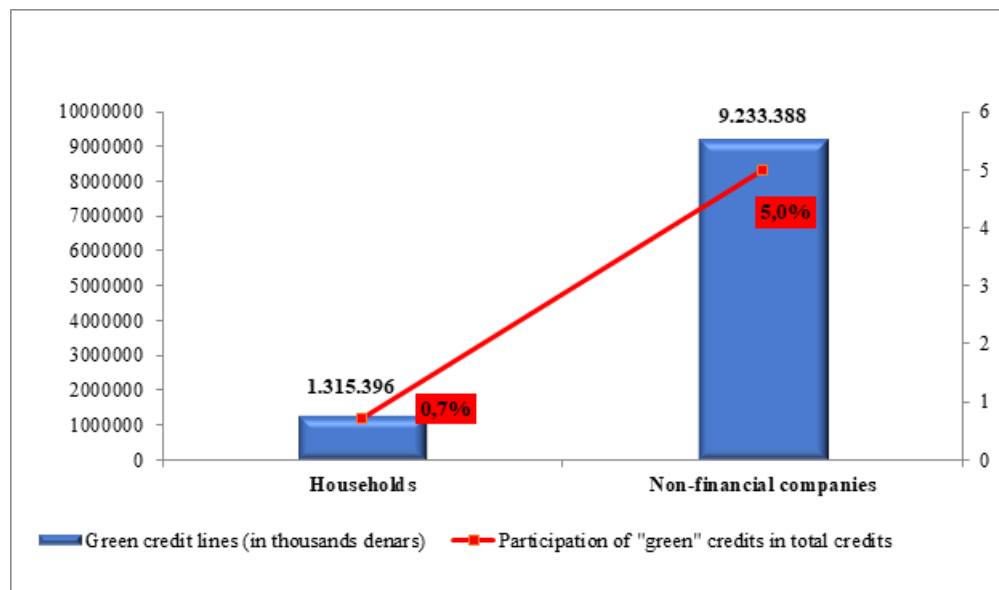
   Of the total number of green credits, 88% are credits given to non-financial companies, while 12%, i.e. 1,315,396 denars or 21.39 million euros, are given to green credits of the population as at December 31, 2021 (chart 3). The share of green credits in the total credits of legal entities is far greater than the green credits of the population, i.e. 5.03% and 0.67% in favour of legal entities. One of the reasons for the greater interest of legal entities is primarily their commitment to reducing operating costs through investment in energy-efficient projects.

   If we compare the situation by the size of banks, the situation with green credit portfolio in terms of financing sources is diametrically different in the segment of big and medium-sized banks compared to small banks (chart 4). Thus, large and medium-sized banks participate with almost 50% each in the total portfolio of green loans, with the difference that among medium-sized banks, the percentage of participation of green loans in total loans given is much higher and is 8.73% compared to 1.68% among big banks.

Chart 4 - Green credit lines by groups of banks in the Republic of North Macedonia as at December 31, 2021.

Source: NBRM, https://www.nbrm.mk/
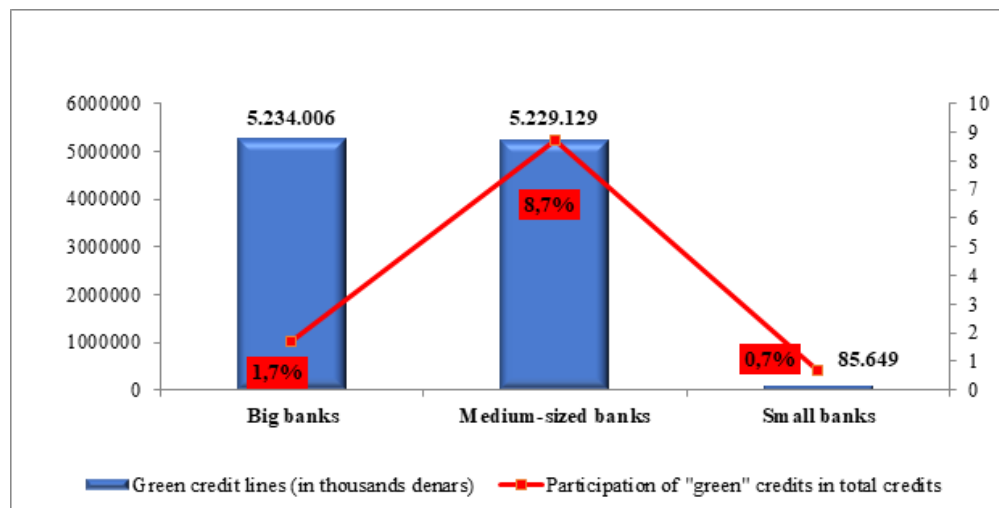
5. International institutions supporting green financing in the Republic of North Macedonia

The financial institutions that are most active in supporting green financing in the Republic of North Macedonia through commercial banks are the GGF fund (Green for Growth Fund) and the European Bank for Reconstruction and Development.

5.1 EBRD

The EBRD was founded in 1991 in order to finance structural projects in the former socialist countries of Central and Eastern Europe in the process of transition to a market economy.

One of the core determinations and commitments of the EBRD is the protection of the environment and the commitment to the promotion and support of renewable energy. In the last few years, the transition to a green economy has emerged as the main commitment of the EBRD, as well as a key element in the performance of the banks.

The Republic of North Macedonia joined the EBRD on April 21, 1993, by submitting capital in the amount of 17.62 million euros. Currently, 70 projects are active, so, the current portfolio comes to 819 million euros.

Chart 5 –Sectors portfolio investments in the Republic of North Macedonia as at December 31, 2021.

Source: EBRD, https://www.ebrd.com/north-macedonia-data.html
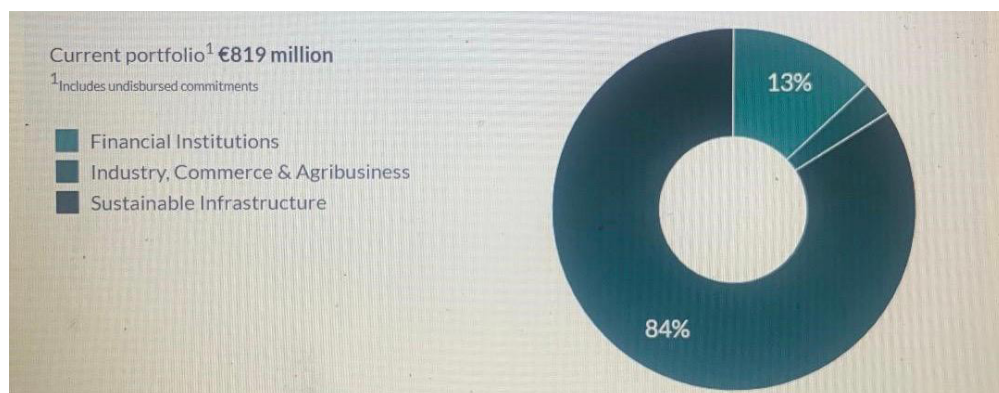
According to the information available on the website of EBRD, presented in chart 5, most of the investments in the Republic of North Macedonia are investments in sustainable infrastructure with 84%, then 12% in financial institutions and 4% as support in industry, commerce and agribusiness.

EBRD is also present in the Western Balkans and in the Republic of North Macedonia through the Green Economy Finance Facility (GEFF) with which, through commercial banks, they support households and the business sector in energy efficiency projects and energy-renewable products and services.

5.2 GGF

GGF, in addition to EBRD, has been one of the biggest supporters of green financing in the Republic of North Macedonia for the last 15 years. The fund was established in 2009 as an initiative of the European Investment Bank and the German Development Bank KfW as a public-private partnership.

GGF is an investment fund whose main focus is mitigating climate change and promoting sustainable economic growth by investing in projects and measures that reduce energy consumption, resource use, and CO_2 emissions.

GGF is present in the Republic of North Macedonia through 2 banks, Halkbank AD Skopje and Ohridska Banka AD (now Sparkasse Bank) and one direct investment in windmills. The initial investment in Halkbank is 20 million euros, while in Ohridska Banka it is 14 million euros. As at December 31, 2021, Macedonia in the total portfolio of the fund, which amounts to 606 million euros, participates with 3%, i.e. 19.8 million euros.

Chart 6 –GGF Investments in the Republic of North Macedonia as at December 31, 2021.

Source: GGF*,* https://www.ggf.lu/
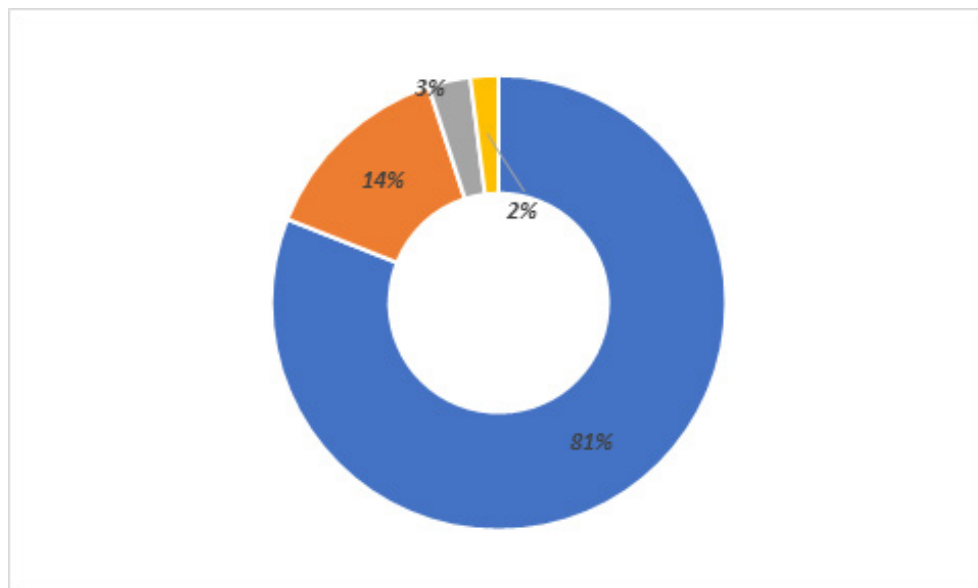
Most of the fund's investments in the Republic of North Macedonia were made in the sphere of increasing the energy efficiency of buildings, i.e. 81%, while investments in commercial sources of renewable energy are 14% (chart 6). The technical assistance provided by GGF to its partner institutions as well as to end users is particularly important in increasing awareness of climate change and the need for transformation into sustainable and energy-efficient projects. The total amount of aid provided on this basis amounts to 600 thousand euros in 24 projects.

Conclusion

One of the basic challenges facing the Macedonian banking sector is finding long-term sources of funding from domestic and foreign investors to support long-term sustainable projects. Taking into account the participation of green financing sources in the total liabilities, it can be said that banks have a serious challenge in animating institutional investors in green projects. The low level of participation of green financing sources in total sources is also a challenge for domestic banks to promote green financing instruments.

The role of the Development Bank and the GGF fund in the green agenda is really important. Until now, the Development Bank has taken an active part in the green transition both through support to the domestic banks and by animating the domestic and international institutional investors.

In conditions where there is a lack of private capital for green investments in the country, as is the case in the Republic of North Macedonia, it is necessary to create a favourable environment that will stimulate green investments. Above all, the developed business climate, the rule of law, as well as the definition of an investment regime for green investments would represent a catalyst for green investments. For all this, there must be a coordinated approach of all public and private actors in the financial sector at all levels.

The role of government is crucial when it comes to supporting strategic green finance policy. The government of the Republic of North Macedonia only with clear political signals can stimulate the actors in the financial sector to provide unselfish support for the development of green financing in the country. An additional contribution should be made by the Ministry of Finance, which, together with the National Bank, through the supervision of the banks, would help in understanding the risks and reducing them. Through fiscal policy, the government can contribute to increasing the rate of return on green investments, which will directly stimulate the private capital to invest in green projects. The government through various tax deductions can actively promote the allocation of funds to projects related to renewable energy sources.

In our country, apart from the voluntary approach to defining guidelines for green instruments, certain financial and regulatory incentives are also needed for the process of green transformation of the financial sector. Voluntary principles and guidelines for green instruments should apply to all elements of bank balance sheets, both loans and sources such as credit lines and obliges. An additional step would be the approach to defining a transparency policy for green financing in order to minimize the risk of green money laundering.

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SILVANA MOJSOVSKA[*]   UDK   338.246:330.55(497.7)"2016/2021"
(Original scientific paper)

MACROECONOMIC STABILITY AND GROWTH DETERMINANTS OF THE REPUBLIC OF NORTH MACEDONIA

Abstract: This article addresses macroeconomic challenges and growth determinants of the Republic of North Macedonia. The overview of the Macedonian macroeconomic indicators in the period 2016-2021 serves as a basis for identifying the macroeconomics trends, as well as outlining the areas of policy-making where outstanding risk-management would be necessary in the mid/long term. The research indicate that major macroeconomic policy challenges relate to public debt management, budget deficit and inflation. The external shocks such as COVID-19, rising energy and food prices (as implication of the Russian invasion in Ukraine) have contributed the most to the imbalances.

The GDP growth has been largely affected by the global development. In purpose of acceleration of the GDP growth, several issues must be addressed - low productivity; low rate of innovations and technological development; unfavorable structure of the economy: mismatch among the labour market demand and supply, as well as education which does not reflect the needs of the economy. The paper provides recommendations about policy outlook and actions necessary for improvement of the state of affairs in the mentioned areas.

Key words: Macroeconomic stability; Competitiveness; Growth determinants

JEL Classification: E5; O1; O3

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Introduction

The global developments at the start of the third decade of 21st century have provoked shift from expansionary to contractionary monetary and economic policies, while at the same time strengthening the pressure on the national policy-makers to find ways to boost economic growth. Both challenges, elaborated from the perspective of the Republic of North Macedonia, are discussed below. More specifically, the paper identifies major risks with regards to the macroeconomic stability, as well as growth determinants pertinent to the increase of the competitiveness. The paper uses statistical data from official institutions and refers to the relevant studies and other documents.

1. The macroeconomic stability of the Republic of North Macedonia

The macroeconomic stability is usually measured by five variables: inflation; interest rates; public debt relative to GDP; fiscal deficit and currency stability. Macroeconomic stability provides overall outlook of the monetary, fiscal and financial stability. Table 1 represents data of the main macroeconomic indicators of North Macedonia necessary for understanding the macroeconomic outlook of the country.

Table 1. Macroeconomic indicators of the Republic of North Macedonia

	2016	2017	2018	2019	2020	2021	Q1 2022	Q2 2022
GDP rate	2.8	1.1	2.9	3.9	-6.1	4.0	2.4	2.8
Inflation (end of period)	-0.2	2.4	0.9	0.4	2.3	4.9	8.8	14.5
Inflation (average)	-0.2	1.4	1.5	0.8	1.2	3.2	7.7	12.3
Public debt* (% of GDP)	48.4	47.7	48.4	49.2	61.0	60.8	54.9	55.4
Public debt* (mil. EUR)	4711	4787	5202	5541	6483	7135	7170	7227
Basic interest rates (%)	3.75	3.25	2.50	2.25	1.50	1.25	1.25	2.0
Fiscal deficit	-2.6	-2.7	-1.8	-2.1	-8.1	-5.4	-0.8	-0.4

Exchange rate Den/EUR (average)	61.60	61.57	61.51	61.51	61.67	61.63	61.70	61.65
Current account balance (% of GDP)	-2.9	-1.0	-0.1	-3.3	-3.4	-3.5	-13.4	-7.1
Direct investment (mil. EUR)	316.9	180.0	603.7	363.3	154.7	435.2	107.5	138.8
Direct investment (% of GDP)	3.3	1.8	5.6	3.2	1.5	3.7	3.7	4.2
Gross foreign reserves (mil. EUR)	2613.4	2336.3	2867.1	3262.6	3359.9	3643.3	3272.5	3116.1
Unemployment rate	23.7	22.4	20.7	17.3	16.4	15.7	14.8	14.5

Source: National Bank of North Macedonia (https://www.nbrm.mk/osnovni_ekonomski_pokazateli.nspx)

* Public debt data were provided by the Ministry of Finance (https://finance.gov.mk/stock-of-debt-2/?lang=en)

According to the National Bank's data,[2] North Macedonia had low inflation rate up till 2021, indicating strong price stability. The country's inflation of 1.2% in 2020 was mostly due to the rise of prices of chemical and pharmaceutical products relative to Covid-19. In 2021, rising prices of crude oil and gasoline affected the prices of other commodities and contributed to average inflation of 3.2%. Following the Russian invasion to Ukraine in February 2022, the energy and food prices on the global level have surged up and activated the inflation chain, resulting in two-digit inflation rates that were unknown in most of the countries in the last two decades. In North Macedonia, the inflation rate in June 2022 reached 14.5% year on year. This poses serious pressure on the standard of living, as high food and energy prices are trickling down to real incomes; leading to a drop of purchasing power of the households and companies.

The National Bank has introduced measures to control the inflation, mainly through increase of the basic interest rate. It has been increased up to 2% in 2022. Previously, the basic interest rate was gradually lowered down to

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[2]   https://www.nbrm.mk/osnovni_ekonomski_pokazateli.nspx

1.25% in 2021 (from 3.75% in 2016) in purpose of stimulating the economic growth of the country through boost of the aggregate demand. The external shocks in 2022 forced shift from expansionary towards contractionary monetary policy, i.e. increase of the basic interest rates aims to limit the outstanding money supply and decrease inflation. The main issue related to the contractionary monetary policy is the tendency of slowing the growth, which is rather disadvantageous after economic slowdown caused by Covid-19 pandemic. Macedonian GDP rate experienced fall of 6% in 2020, as implication of the Covid-19 global lockdowns. A recovery rate of 4% growth was registered in 2021, indicating that pre-Covid-19 level has not yet been reached. In this context, creating the contractionary monetary environment at this stage has many backlogs for the businesses. It could contribute to stagflation – a situation of parallel decline of the economic growth and rising inflation.

The Macedonian National Bank has mostly followed the actions of the European Central Bank in shaping its anti-inflationary policy, which was expected due to the currency peg to Euro, country's status as an EU candidate and intense trade cooperation with EU. Apart of the interest rates, other monetary instruments were used, mostly referring to the increase of mandatory reserve of the banks and adjusting terms of auctions of treasury bills to restricting supply of money.

Apart of the inflation, the most challenging macroeconomic issue is related to the public debt (general government debt and public enterprises guaranteed debt and non-guaranteed debt). The public debt rose sharply in 2020, up to EUR 7.1bn or over 61% of GDP (from 47.7% or EUR 4.8bn in 2017), due to heavy external funding to bridge the government's crisis-induced financing gap in 2020. In absolute terms, the debt continued to rise in 2022 and reached EUR 7.2n in Q2, while in relative terms it decreased down to 55.4% of GDP in Q2 2022, owing to higher GDP over the period.

Further increase of the public debt is foreseen in the view of the economic projections for 2022 and 2023. In the April 2022 edition of its World Economic Outlook, the International Monetary Fund projected growth slow down to 3,2% in 2022, and a further slow down to 2.7% in 2023. Moreover, the country's average consumer price inflation is forecast at 6.9% in 2022 and 3.6% in 2023, compared to 3.2% in 2021.[3]

In April 2022, the Republic of North Macedonia submitted a request for a two-year Precautionary and Liquidity Line (PLL) to the IMF. This credit

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[3] https://www.imf.org/en/Countries/MKD#

line, available to member countries with sound economic fundamentals, policy frameworks, and policies, can help safeguard economies against external shocks by providing upfront access to IMF resources.[4] PPL would certainly assist the country in coping with the crisis, while payback would be burdened with lower interest rate compared to other types of lending.

The fiscal deficit almost quadrupled in 2020, rising to 8.2% of GDP. This was due to the foregone tax revenues from the decline in economic activity and additional expenditures on anti-crisis measures to support households and companies. The fiscal deficit narrowed to 5.4% of GDP in 2021, which was attributable to less COVID-19 related measures in 2021. In the Q1 and Q2 of 2022, the fiscal deficit has been 0.8% and 0.4% of GDP, respectively, due to stabilization of the economy, as well as traditionally lower public spending in the first half of the year. Given the energy crises and rising inflation in the second half of 2022, along with the projections for 2023, the management of the fiscal stability of the country would remain a challenge in the upcoming years.

The national currency remained stable during the pandemic in 2020 and 2021, as well in 2022. The National Bank pursues long-term policy of currency peg to the euro, which significantly contributes to the macroeconomic stability. On the other hand, the gross foreign reserves, that registered upward trend up till 2021, even during the Covid-19 times, started to decrease in 2022. During the first half of the year, the reserves decreased to EUR 3.1bn, compared to EUR 3.6bn at the end of 2021. This is part of the anti-inflationary measures, as an increase in reserve holdings leads to an increase in the monetary base which, if the latter is not (or not fully) sterilised, leads to higher inflation.

In April 2022, Fitch rating agency affirmed North Macedonia's Long-Term Issuer Default Ratings (IDR) at 'BB+" with a Negative Outlook.[5] It confirmed the ratings as of 2021. Affirmation of the credit rating serves as a recognition of the state's efforts to maintain macroeconomic stability during times of crises, while negative outlook mostly relates to the risks noted above. In addition, Fitch referred to the risks related to further widening of the current account deficit, which surged up to 13.4% of GDP in Q1 2022 and 7.1% in Q2 2022, due to reduced export demand and higher energy import costs. However, according to the Fitch projection on the current account deficit, it should ease

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[4]   https://www.imf.org/en/News/Articles/2022/04/20/pr22124-imf-executive-board-receives-request-for-liquidity-line-north-macedonia

[5]   https://www.fitchratings.com/research/sovereigns/fitch-affirms-north-macedonia-at-bb-outlook-negative-29-04-2022#:~:text=Sovereign%20Rating%20Model%20(SRM)%20and,(LT%20FC)%20IDR%20scale.

to 4.7 of GDI in 2023, in line with reduced energy imports and weaker fiscal impulse.[6]

Fitch outlook on North Macedonia is very relevant with regards to the perception of the macroeconomic stability by the foreign investors. In the first half of 2022, the FDI inflows in the country totaled EUR 246.3 mil., which is a relatively stable indicator compared to earlier years. Nevertheless, the global economic slowdown in 2022, along with the projections for 2023, point toward general decrease of the ventures – foreign or domestic. That might affect the number of the new jobs, although, it would not necessarily affect the rate of unemployment in the country. It was continuously declining over the analyzed period and dropped to 14.5% in the Q2 2022 from 23.7% in 2016. The rate of unemployment is mostly affected by other factors, primarily emigration that led to shrinking of the labour force contingent and its quality. In this context, the unemployment is unlikely to be a serious problem in the short/mid run. On the contrary, it seems that the lack of qualified labour force would be more challenging, given the emigration movements from the country.

The indicators discussed above show that macroeconomic stability in North Macedonia has been maintained for a longer period of time. Covid-19 and Russian invasion to Ukraine in 2022 that triggered energy crisis and global rise of the food prices, acted as external shocks to the macroeconomic setting in North Macedonia, demanding substantial state interventions. The state interventions in response to the Covid-19 have implied high fiscal deficit and widening of the public debt in 2020, while inflationary pressures in 2022 triggered implementation of the contractionary monetary policy's instruments. As projections with regards to the global economic trends foresee ease of the burdens in 2023, the macroeconomic stability of North Macedonia could be preserved with cautious risk management in these three mentioned areas.

2. Competitiveness and growth determinants of the Republic of North Macedonia

The competitiveness of the national economy is very complex to be measured. The World Economic Forum "Global Competitiveness Report" makes an effort to compare national economies according to their specifics in 12 pillars relevant for competitiveness. The pillars include: Institutions; Infrastructure; ICT adoption; Macroeconomic stability; Health; Skills; Product

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[6]   Ibidem

market; Labour market; Financial system; Market size; Business dynamism and Innovation capability. In the Global Competitiveness Report 2019,[7] the Republic of North Macedonia was ranked 82nd out of 141 country. The 2019 Report is the latest one providing detailed analysis according to the pillars and therefore, served as basis for this analysis. More specifically, North Macedonia scored lowest with regards to the pillars Market size (109) and Innovation capability (110), while best scores were noted with regards to Business dynamism (65) and ICT adoption (70). The market size is predefined category and poses limits to the country, but, the regional market of the Western Balkans could be considered as an option. All Western Balkan countries have similar characteristics in the field of competitiveness, confirmed by their rankings in the scope of 72nd (Serbia) to 92nd (Bosnia and Herzegovina).

Apart of the market size, other pillars in the competitiveness profile of North Macedonia indicate that the country should put serious efforts to improve the situation. The primary issues that should be considered in purpose of increase of the competitiveness are related to productivity, structural transformation of the economy in favour of the sectors producing higher value added, increase of the rate of innovation and technological development and encouraging new investment – domestic and foreign.

Productivity is the major problem in the Republic of North Macedonia. This term encompasses labour productivity; value added per worker and total factor productivity (labour and capital, i.e. technology as factors). The total factor productivity (TFP) could be simply explained as economic growth through technological innovations and higher efficiency as a result of higher skills and better capital management.

According to the calculations in the Systematic Diagnostic of the World Bank 2018,[8] over the periods 1993-2001 and 2009-2017, Republic of North Macedonia registered continuous decrease of the total factor productivity. "Decomposing growth by factors of production shows that GDP growth has been driven by the accumulation of capital and labor, the latter measured by the increase in employment. Meanwhile, since independence the contribution of TFP, which captures how efficiently and intensively capital and labor are utilized in production, has been negative, except in 2002–08 when the external environment was favorable and structural reforms were underway. The contribution of human capital, using years of schooling as a proxy for the quality of

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[7]   World Economic Forum, "The Global Competitiveness Report 2019.", WEF 2020
[8]   World Bank, Seizing a Brighter Future for All; Republic of Macedonia, 2018, Report Number 121840-MK

labor, has been low or negative since 2002 as education and skills formation deteriorated."[9]

The labour productivity in North Macedonia, measured according to the value added per worker, has been 80% of the value added per worker in the Western Balkan region and 40% of the value added in the EU members states that joined as of 2004.[10] In addition to the low(er) productivity, the Republic of North Macedonia faces serious emigration of the labour force that causes labour market's erosion. According to the World Bank, the labour force is projected to fall by 20 percent in the next 35 years, from 1.47 million in 2015 to 1.16 million by 2050.[11] Moreover, although emigration is draining the country of many of its most productive workers, remittances are minimal. This implies that the "exported" human capital has insignificant or zero contribution to the growth. Having in mind that the investment in the human capital is immense, the emigration triggers huge losses to the country.

In the World Bank's document "North Macedonia: Action Plan for recovery of Growth and Jobs",[12] a reference has been stated that both, domestic and foreign investors in the country, complain not only about the disconnect between their needs and skills taught in the education system, but also about the shortage of vocational and management skills. Firms singled out skills as biggest obstacle—outranking wage expectations, the cost of social security, and labor regulations. The state aid aiming to support jobs creation in FDI has incorporated training of the workers, tailored to the needs of the companies and conducted at their premises. Apart of that, the authorities provide programmes for general training of computer and other skills, widely accessible to young and unemployed persons. Although these trainings provide some general knowledge, the gap of specific skills could be prevailed only by closer cooperation among education institutions and companies, through serious programmes for internships and vocational training.

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[9] Ibid, p. 44
[10] Ibid, p. 0-8
[11] Ibid, p. 0-7
[12] https://documents1.worldbank.org/curated/en/809991603810854005/pdf/Republic-of-North-Macedonia-Action-Plan-for-Recovery-of-Growth-and-Jobs.pdf

Table 2. GDP structure in the Republic of North Macedonia (in %)

Sectors	2018	2019	2020	2021
Agriculture, forestry and fishing	8.5	8.0	8.6	7.2
Mining and quarrying; Manufacturing; Electricity…	18.6	18.0	17.4	16.9
Construction	5.4	5.5	5.3	5,4
Wholesale and retail trade…	19.9	20.3	19.5	19.3
Information and communication	3.4	3.7	4.0	4.3
Financial and insurance activities	2.9	2.8	3.1	3.1
Real estate activities	10.0	9.9	10.5	10.5
Professional, scientific and technical activities; Administrative and support service activities	3.6	3.8	3.6	4.0
Public administration….	11.6	11.9	13.3	12.9
Arts, entertainment and recreation…	2.8	2.9	2.6	2.8

Source: State Statistical Office BDP News Release 3.1.20.16/2020; BDP News Release 3.1.22.15/2022

Changes in the education system should be done in purpose to serve and economy better. The structural transformation of the economy in favour of the sectors that produce higher value added is crucial for increase of the competitiveness, as sectors with low(er) value added dominate in the GDP and employment. As presented on Table 2, the sector wholesale and retail trade had largest share in GDP of 19.3% in 2021, while manufacturing industry participated with 16.9%. Agricultural sector had share of 7.2% in GDP, but, it has a high number of low paid employees, creating a spiral that decreases the economic growth potential. At the same time, the manufacturing sector has declining share over the analysed period, which indicates that structural transformation of GDP is necessary.

Apart of the overall GDP structure, the structure of the manufacturing industry deserves specific attention. The major Macedonian industries are metal, textile and food processing industry. The latter two are high-intensive labour industries that produce low value added products, implying that only the metal one brings higher effects to the GDP. In the past decade, FDI entrance provoked changes in the structure with chemical and other industries allied to automotive industry, being the leading ones. The FDI inflow implied changes in the export structure with dominance of the higher value added products. However, the net effect of such change is not considerable, as most of the

inputs for FDI production are imported. FDIs have not initiated the effect of integration of the local companies into the global supply chains, which is one of the expected benefits for the national economy from the FDI attraction.

Structural transformation is closely related to innovation. The statistics indicate that the investment in research and activity are very low in North Macedonia – only 0.4% of GDP in 2019, while private sector's share is only 0.1% of the GDP. This is rather disappointing, particularly if analysed from the TFP perspective. In purpose of improvement of the state of affairs in this field, the Fund for Innovation and Technical Development (FITD) was established in December 2013. Up till 2021, FITD articulated investment of over EUR 43 million in 600 companies in purpose of ITC adoption and innovation enhance.[13] FITD is an excellent mechanism for support of the companies and should be combined with other programmes, such smart specialisation strategy, in terms of achieving optimal rate of investment and results. Also, through these programmes, the policy-makers should seriously tackle the problem of low productivity.

Another growth determinant refers to the terms of financing the investment in the country. Access to finances in North Macedonia is related to rigid criteria set by the commercial banks. Fulfilling the criteria is particularly difficult for the small companies, in particular those having intention to start production business. There is Development Bank of the Republic of North Macedonia that provides certain support to the companies, but, wider financial platform is necessary to boost the investment of small companies. This is particularly relevant, as most of the economic operators (82% in 2021) are small companies with 1-9 employees.[14] In this respect, it must be noted that foreign investors had preferential treatment for the longer period of time in terms of subsidies granted by the state to FDIs on various basis. As of 2018, the Government has adopted Plan of Economic Development[15] that has enabled domestic companies to be eligible for state assistance. FDIs remain very important segment of the economic development of the country, and the efforts should be focused on the integration of the domestic companies with the foreign ones.

In 2021, the number of active business entities in North Macedonia was 72992.[16] Around 30% of the companies operate in the wholesale and retail sector; 10.9% in the manufacturing sector and 10.7% in the sector of professional,

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[13] FIDT, Perfomance analysis of companies co-funded by FIDT, September 2021, p. 7

[14] State Statistical Office, Business Entities – News Release 2021, No 6.1.22.14/2022

[15] https://vlada.mk/PlanEkonomskiRast

[16] Ibid

scientific and technical activities. The number of the companies experienced decrease of 3.8% (2853 entities) in 2020 due to the Covid-19 crisis, [17] implying to the high vulnerability of the small companies. This points out the need for better and consistent policy-response to boost the economic growth. It also includes coordination among policies regulating the macroeconomic stability (monetary and fiscal policy) with policies dealing with growth determinants, as both categories are interconnected and ad-hoc solutions could not provide sustainable results.

Conclusion

The macroeconomic stability in North Macedonia has been successfully maintained for a longer period of time. The pressures that were posed by Covid-19, followed by the outbreak of the energy crisis due to the Russian invasion to Ukraine in 2022 have triggered monetary and state interventions that posed public debt, fiscal deficit and inflation as major challenges that need to be addressed in the short-mid run. As projections with regards to the global economic trends have foreseen ease of the burdens in 2023, the macroeconomic stability of North Macedonia could be preserved with cautious risk management in these three mentioned areas.

In terms of competitiveness and growth determinants, the major issues that should be addressed by the policy makers in North Macedonia refer to:
- Increase of productivity, in particular labour productivity which is seriously lagging behind the potential competitors in the Western Balkans region;
- Structural transformation of the domestic industry in favour of the sectors producing value added products. The manufacturing industry is dominated by the FDIs in automotive industry, while domestic industries are mainly low value added and high labour intensive industries that could not provide rapid boost to the GDP growth.
- Increase of the innovation rate and technological advancement in the country; and
- Encouraging new investment through ensuring easier access to finances for domestic companies.

The macroeconomic stability is crucial condition for economic growth of the country, along with the external environment that determines national economy's actions on the global market. In case of disturbances of these two

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[17] .State Statistical Office, Business Entities – News Release 2020, No 6.1.21.15/2021

categories, state interventions are usually focused on setting the balance back. However, there is a parallel challenge of boosting the economic growth, in purpose to alleviate the consequences of the crisis. The national economies with higher competitiveness would be more prepared for the latter challenge, while less advanced economies would need to reconsider their growth determinants and approach towards building higher resilience to crises.

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4 State Statistical Office, BDP News Release 3.1.20.16/2020 and 3.1.22.15/2022

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INNOVATIVE SOLUTIONS FOR IMPROVING AND AUTOMATING BUSINESS PROCESSES FOR CUSTOMER CARE IN TELECOMMUNICATION SECTOR – EMPIRICAL EVIDENCE FROM SELECTED COUNTRIES

Abstract: The effects of ERP and CRM systems in support of customer care processes have revolutionized the way data is collected and processed. In recent years, new innovative technologies have appeared that have the capacity to make an even bigger revolution. These are technologies for automating processes with robotics, speech recognition and natural language processing. These forms of automation aim to automate business processes to improve operational efficiency, reduce costs, and reduce the time employees spend performing repetitive tasks and processing huge amounts of data from different systems. Since the aforementioned structured and manual processes can be performed by robots, employees could focus their time and effort on performing analytical and creative tasks, thereby increasing the added value of business activities.

In this paper, the aforementioned types of automation of business processes in the customer care department in the telecommunication sector are analyzed. In order to investigate customer satisfaction with the presented innovative solutions for the automation of business processes for customer care in the telecommunication sector in the Republic of North Macedonia and Austria, a survey was conducted through a specially designed questionnaire for the purposes of this paper.

Key words: Business processes, Robotic Process Automation, Natural Language Processing, Customer satisfaction, Telecomunication sector
JEL Classification: M31, O32

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Introduction

The competition in the telecommunication market has opened new dimensions for the researchers to determine new strategy planning techniques through the big data analytics of the data of customer relationship management systems (CRM) of telecommunication companies. Business Support System and Operational Support System are the current systems in CRM that provide customer details containing content data and call details respectively known as contextual data.

The customer life cycle in CRM consists of six phases including customer contact to customer service representative, services provided to the customer, use of services by a customer, bill generation, bill payment, and offer of new services to customers.[1] Every cycle consists of different processes that must constantly follow the latest technological innovations to ensure quality in the delivered services to the customers. The utilization of services by the customer is a most important phase of customer cycle since it provides the behaviour of the customer. The idea is first to collect data from the existing systems and then apply pattern recognition algorithms on obtained data to find out patterns which are the behaviour of customers. Once patterns are identified, then most suitable big data clustering method is applied to attain clusters of customers who show similar behaviour in their call activities.

To achieve steady growth and survive in the long term, telecommunication enterprises must innovate continuously. Therefore, they must combine best and next business practices. Best practices ensure efficiency, while next innovative practices really lead to competitive advantages. Traditional business process automation solutions such as Enterprise Resourcing Planning (ERP), Supply Chain Management (SCM) or CRM systems focus on the implementation of best practices. Next-generation process automation allows the implementation of next innovative practices at an economically acceptable cost level. This is possible through a flexible combination of business process definition and software application support.

The issue of how to determine the right processes to automate in any business is more about asking the right questions with the right group of people, listening to their answers, and pairing them with a long-term business goal. Common business processes that can be automated in every business has

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[1]   Shrivastava, P., Sahoo, L. and Pandey, M.: *Recognition of Telecom Customer's Behavior as Data Product in CRM Big Data Environment, 2018*

its own process pain points. Example of customer care area where business process automation can be set in place is traditional call centre. The traditional operating model of a customer call center in telecommunication companies in most cases does not achieve the goal. Especially when call centers are faced with a sudden increase in customer interactions, it often results in the kind of message that the service time will be longer than usual that frustrates the customer. Examples of an automation opportunity would be the following:

- Deconstructing overly complex processes resulting from the diverse requirements of a wide portfolio of products and services and a diverse range of customer segments - from residential consumers to sole traders, small/domestic enterprises ending with large companies as users.
- Interacting with multiple systems, including user data systems that are implemented over time and are difficult and expensive to adapt to changing business requirements.
- Depending on the large number of call center agents - with very different training, experience, knowledge and skills - to manage complex business processes and systems can result in high overall operating costs for call center operations.

For the execution of customer care business processes, workers currently spend substantial time dealing with ERP, CRM, spreadsheets and legacy systems in manual repetitive tasks, merging and moving massive amounts of data from one system to another. After the revolution that CRM and ERP created, a new terms are going to revolutionize the workplace: robotic process automation (RPA), speech recognition and natural language processing.[2] These types of innovative technologies aim to automate business processes (BPs) with the goal of improving efficiency while cutting costs by reducing the time humans spend dealing with information systems. This means that these structured and manual tasks can be done by a robot, so that the workers can dedicate their time and effort to tasks that add more value.[3] In this paper, the new innovative technologies for automation of business processes in the customer care department in the telecommunication sector are analyzed. The main research question is how these technologies affect customer satisfaction in telecommu-

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[2]   Anagnoste, S.: Robotic Automation Process – The next major revolution in terms of back office operations improvement, *Proceedings of the International Conference on Business Excellence 11*, Bucharest Academy of Economic Studies, 2017

[3]   Agguire, S., Rodriguez, A.: Automation of a business process using robotics process automation (RPA): A case study, *Applied Computer Sciences in Engineering* , 2017, pp 65-71

nication sector. In order to investigate customer satisfaction with the presented innovative solutions for automation of the customer care business processes in telecommunication sector in the Republic of North Macedonia and Austria, a survey was conducted through specially designed questionnaire for the purposes of this paper.

1. THE FEATUERS OF INNOVATIVE TECHNOLOGIES FOR AUTOMATION OF CUSTOMER CARE BUSINESS PROCESSES

Robots execute repetitive tasks by using graphical user interface adaptors instead of application programming interfaces, without changing the information technology infrastructure, meaning that the robot does repetitive tasks that used to be done by humans faster and cost efficient. Through RPA organizations can develop robots which will lead to automation of an extensive variety of back office and front office activities, bridging thus the organization and moving people to high-value added tasks. [4]

RPA can be defined as the concept of using a software platform of virtual robots to manipulate existing application software in the same way that a human does with a process or transaction.[5] This means that RPA uses robots to imitate repetitive tasks that humans have to perform. These robots are not physical robots, but software robots, meaning that a robot equals one software license.[6] Therefore, since RPA addresses the automation of rule-based routine tasks using intelligent algorithms, some authors are already applying artificial intelligence and machine learning technologies to create software solutions that can understand user behaviour and automate their tasks.[7] Customer care as

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[4]   Santos, F., Pereira, R. & Vasconcelos, J. B.: Towards robotic process automation implementation: an end-to-end perspective. Business Process Management Journal. 26 (2), 2020, pp. 405-420

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department having a direct interaction with the customers may apply as one of the first for such an automation solution.

For RPA adoption, it is important that the process can be decomposed into unambiguous rules, as RPA is only suited for rule-based tasks. Standardize the process before automating is also necessary because the more standardized the process is, the fewer exceptions happen.[8] Having not many exceptions to handle is a key success factor because having a lot of exceptions makes it time-consuming for the robot to automate. Then, it is also important that the process is mature because a mature process can be easily measured, documented and stable, with a better current cost awareness. Voluminous transactions are also suitable for RPA automation because high volume (amount of repetition) is considered as an opportunity for cost reduction. Also, if the tasks are repeated often, it means that can be done by robots faster and with less errors.

Frequent interactions with multiple systems is also a good candidate for automation, as RPA interacts with systems through the presentation layer, whereas doing the same thing with traditional automation would be more expensive and time-consuming. Another important feature is interacting with stable systems that do not change very often, so that the robot can interact with the interface without throwing exceptions that would be costly.

Tasks that are prone to human error are suited for automation because it allows reduction of costs and increase of performance, as robots do less mistakes than humans. Also, tasks with no need or limited need for worker intervention and low cognitive requirements are an important aspect because robots lack analytical and creative skills. Finally, data is important, in terms of digital availability and quality. To execute the tasks correctly, the data must be correct and available digitally.

Speech recognition is another innovative technique that could support business process in customer care departments. Speech recognition could be defined as the ability of a machine or program to identify words and phrases in spoken language and convert them to a machine-readable format.[9] The rudimentary speech recognition software has a limited vocabulary of words and phrases and can only identify them if they are pronounced very clearly. More

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[8] Lintukangas, A.: Improving indirect procurement process by utilizing robotic process automation, Lappeenranta University of Technology School of Business and Management, 2017, Master's Theses

[9] Zhong M., Yashesh G., Jinyu L., Yifan G.,: Character-Aware Attention-Based End-to-End Speech Recognition, IEEE Automatic Speech Recognition and Understanding Workshop (ASRU); 2019, IEEE

sophisticated software has the ability to accept natural speech. Speech recognition works using algorithms through acoustic and language modelling. Acoustic modelling represents the relationship between linguistic units of speech and audio signals, while language modelling matches sounds with word sequences to help distinguish between words that sound similar.

Although convenient, speech recognition technology still has a few issues to work out as it is constantly evolving. The pros of speech recognition software are that it is easy to use and readily available. Speech recognition software is now often installed on computers and mobile devices, allowing for easy access. The downsides of speech recognition include its inability to pick up words due to pronunciation variations, lack of support for most languages outside of English, and inability to sort through background noise. These factors may lead to inaccuracies.

Optimal Automatic Speech Recognition takes place when the evaluation is done under circumstances identical to those in which the recognition system was trained. In the speech applications demanded in the actual real world this will almost never happen. There are several variability sources which produce mismatches between the training and test conditions. Depending on his physical or emotional state, a speaker will produce sounds with unwanted variations transmitting no acoustic relevant information. The phonetic context of the sounds produced will also introduce undesired variations. Another source of variability is constituted by the changes produced in the speaker's environment and the characteristics of the channel used to communicate. The strategies used to eliminate the group of environmental sources of variation are called Robust Recognition Techniques. Hence, Robust Speech Recognition is recognition that is as invulnerable as possible to changes that occur in the evaluation environment. Robustness techniques constitute a fundamental area of research for voice processing.

Good speech recognition programs let users customize them to their needs. The features that enable this include[10]:

- *Language weighting*. This feature tells the algorithm to give special attention to certain words, such as those spoken frequently or that are unique to the conversation or subject. For example, the software can be trained to listen for specific product references.

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[10] Gaikwad, S., Gawali, B.W., Yannawar, P.: A Review on Speech Recognition Technique, International Journal of Computer Application, Vol. 10, No. 3, 2010, pp. 16-24

- *Acoustic training*. The software tunes out ambient noise that pollutes spoken audio. Acoustic training software programs with can distinguish speaking style, pace and volume among the chatter of many people talking in an office.
- *Speaker labelling*. This capability enables a program to label individual participants and identify their specific contributions to a conversation.
- *Profanity filtering*. Here, the software filters out undesirable words and language.

There are several advantages to using speech recognition software, including the following:

- *Machine-to-human communication*. The technology enables electronic devices to communicate with humans in natural language.
- *Readily accessible*. This software is frequently installed in computers and mobile devices, making it accessible.
- *Easy to use*. Well-designed software is straightforward to operate and often runs in the background.
- *Continuous, automatic improvement*. Speech recognition systems that incorporate Artificial Intelligence (AI) become more effective and easier to use over time. As systems complete speech recognition tasks, they generate more data about human speech and get better at what they do.

While convenient, speech recognition technology still has a few issues to work through. Limitations include:

- *Inconsistent performance*. The systems may be unable to capture words accurately because of variations in pronunciation, lack of support for some languages and inability to sort through background noise. Ambient noise can be especially challenging. Acoustic training can help filter it out, but these programs aren't perfect. Sometimes it's impossible to isolate the human voice.
- *Speed*. Some speech recognition programs take time to deploy and master. The speech processing may feel relatively slow.
- *Source file issues*. Speech recognition success depends on the recording equipment used, not just the software.

Natural Language Processing (NLP) is another innovative supporting technology for business processes from customer care departments. NLP could be defined as a software process that transforms structured data into

plain-language content.[11] It can be used to produce long-form content for organizations to automate custom reports, as well as produce custom content for a web or mobile application. It can also be used to generate short blurbs of text in interactive conversations (chatbots). An efficient and effective system for natural language processing was developed for improving free text analysis and establishing a virtual assistant. The virtual assistant is a software, which is designed to imitate a natural conversation. The way a chatbot or virtual assistant function works is by recognizing the user's input or utterance, by pattern matching. This pattern matching occurs due to the fact that the software is trained to recognize these sentences using machine learning methods.[12]

After matching it to a pattern, it checks the response set for that pattern and gives the output. The major difference from classical programming is the fact that a chatbot can understand the context of a sentence. This means that the input and output of the first question will be carried over and matched to subsequent questions, just like a natural conversation. Although this is a big leap in the computation of natural language processing, chatbots still cannot process complex questions and perform complex activities. Since chatbots require a huge amount of computing power, hence consumer based software is offered as a service by the major tech giants like Google, Microsoft, Facebook, and IBM. These companies do the computation on their servers, and offer the software as a cloud-based service on their platform.

Computational linguistics has improved so much in scope and speed in the past decade that it is now able to be incorporated into consumer based products. Some of the fundamental factors that have made these possible are the exponential increase in computer processing power, the vast language datasets available, the development and research of machine learning algorithms and the research and development in understanding the semantics of human language and conversation.

Natural language processing platforms provide what is contextually called a virtual assistant. These virtual assistants or chatbots are programmed using machine learning algorithms. The primary purpose of these tools is to mimic natural human conversation.

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[11]   Dale, R.: *Classical Approaches to Natural Language Processing.* In Handbook of Natural Language Processing, Chapter I, 2010, pp. 3-7,

[12]   Nimavat K. and Champaneria T.: *Chatbots: An overview types, architecture, tools and future possibilities* International Journal for Scientific Research and Development, 5 (7) (2017), pp. 1019-1024

This field is still in a very early stage of development. Businesses are experimenting with it, such as the telecommunication sector and various other industries, which use chatbots as the first point of contact in the online support system. One major advantage of these tools is that they can be trained from the mistakes they make, and hence they are continuously improving. The amount of data being fed into the system is increasing day by day, which only making these platforms better. Understanding human language is a very complicated feat because there are underlying layers of logic in conversation, but with virtual assistants being implemented in consumer technology, human-computer conversations are only going to get better.

2. ANALYSIS OF USER SATISFACTION FROM AUTOMATED BUSINESS PROCESSES FOR USER CARE IN THE TELECOMMUNICATION SECTOR IN SELECTED COUNTRIES

When tracing development directions, telecommunications companies need a detailed understanding of the needs of users of their services. It is also essential to provide users with the most appropriate products and services they need. Failure to meet this goal can significantly affect the company's competitiveness. For these reasons, understanding and measuring user satisfaction is of great importance to telecommunications companies. Satisfaction is a widely accepted concept despite the real difficulties associated with measuring and interpreting the usual approaches to its assessment. The most common approach is to use general satisfaction surveys conducted within the telecommunications sector after each call for service from a customer care center. If the experience with the service exceeds the expectations that the customers had from the service, then the satisfaction is high and vice versa.

The subject of the research performed for the purposes of this paper aims to analyze the current state of knowledge of new technologies by users in the telecommunications sector who had the opportunity to use the services supported by innovative technologies in the customer care sector, as well as their satisfaction with the same services. The research covers the services supported by the innovative robotics process automation solutions, then the virtual expert services (software that is designed to imitate natural conversation or stimulate written communication) and virtual agent support when a technical problem occurs on the services used. Also, the research should answer several research questions, namely:

- How familiar are the customers with the new analyzed technologies?
- What is their satisfaction after using the services?
- Would the customers choose a service from an agent (a natural person) or a service offered with new technologies?

For the purposes of the research, a questionnaire survey was used as a quantitative method that serves to collect primary data. Bearing in mind that based on previous research, users of different age groups may have different views on their satisfaction with the use of new innovative technologies, in this paper the connection of the age group with the acceptance of the use of services supported by innovative technologies is analyzed. For this reason, a random selection of users from different age structures was made to ensure representativeness of the data.

In addition to age, the survey questionnaire also contains respondents' data on gender, place of residence and level of education as generic demographic data. The survey questionnaire was answered by a total of 264 respondents, with 170 respondents residing in the Republic of North Macedonia and 94 respondents residing in the Republic of Austria. In terms of gender representation, 60% are female, while 40% are male.

The foundations of this research are based on the research question whether innovative solutions in the customer care department are still in the development and experimentation phase and do not reach the expected level of acceptance and satisfaction by service users. The majority of the respondents, 67%, answered that they would prefer direct contact with an agent, while the rest of the respondents declared that they would choose a service offered by a solution from digital innovative technologies.

The research showed that even among respondents in the age groups up to 45 years old, the majority of people would not accept a service from digital technology if they were also offered the option of direct contact with a physical person, although the data indicated that the majority of respondents in the lower age groups were familiar with the innovative technologies that are analyzed in this paper. According to the results obtained from the answers, respondents from all levels of education would prefer contact with an agent rather than any of the innovative technologies.

Of the total number of respondents, 49% had the experience of communicating with a chatbot or virtual expert. The percentage of all age groups for knowledge of the use of digital solutions such as robotics is also high (over 70% in all age groups). But it should be stated that the percentage of accep-

tance of automation with robotics decreases significantly with the increase of the age structure because the results show that there is a greater lack of understanding of new technologies among older respondents. In absolute numbers, 208 out of 264 respondents are familiar with the background work and use of process robotics technology and 205 respondents declared that they have no objection to the automation of human procedures with robotics.

The last part of the questionnaire covers the topic of virtual support of an agent in case of a technical problem of the client. Respondents' responses show that the majority, 73%, would agree to virtual support from an agent for a technical issue rather than waiting for a physical visit to provide adequate on-site service. The analysis by age groups shows that the only exception to this attitude is the age group over 56 years old, where the majority of respondents would prefer a visit to a physical person on the spot of the problem. But the percentage of respondents who used this technology of virtual support during a technical equipment problem is relatively low, and amounts to only 20%.

The conclusion of all the obtained presented results in this part of the paper is that the respondents are partially familiar with the new technologies, while the knowledge of robotics technologies is more common, while the new experimental services of virtual experts and service support are in the familiarization and awareness phase. However, the significant percentage of use of these services should not be left out.

Conclusion

Telecommunications companies are actively using the latest digital technologies to support their business processes in customer care sectors. One big advantage of these technologies is that they can be upgraded through the mistakes they make, that is, they can learn from historical data and constantly improve. The amount of data that is stored in these systems increases significantly day by day, and thus new technologies enable more sophisticated and better solutions.

Based on the analysis of the characteristics of new innovative technologies used to support business processes in the customer care sector in telecommunications companies, as well as the results obtained from empirical research, it can be concluded that agents are accepted as the best solution if they are works for a specific and more complicated problem, while digital solutions are accepted as a service that has 24/7 availability and is suitable for solving easy and recurring problems.

Lower age groups more easily accept digital technologies as a simple process of communication, while higher age groups practice and accept contact with a physical person more. It can be concluded that innovative solutions in the customer care department are still in the development and experimentation phase. Although they are improving daily in different aspects, they still do not reach the expected level of acceptance by the users of the services.

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ANNEX

Questionnaire
A.) Basic data

* Required questions

1. Years *
- up to 18 years
- 18-25 years old
- 26-35 years old
- 36-45 years
- 46-55 years
- 56+ years

2. Place of residence *
- Republic of North Macedonia
- Republic of Austria

3. Gender *
- Men
- Female
- Neutral

4. Education *
- •Primary education
- •Secondary Education
- • Higher education (undergraduate studies)
- • Higher education (Master's or Doctor of Science)

B.) New technologies as services

Innovative information technologies for the automation of business processes for customer care in the telecommunications sector

1. If you have a problem with a service from a company in the telecommunications sector and need to get in touch with the customer care department, would you prefer contact with an agent or would you accept a digital technology solution (virtual agent, chatbot, robot, etc.)? *
- • Agent
- • Digital technology solution

2. Please briefly explain your answer to the previous question!

_____

3. Have you heard about the "chatbot / virtual expert" service (artificial intelligence technology that simulates human conversation through written communication or voice command) of telecommunication companies? If not, please continue to question number 6! *
- • Yes
- • No

4. If you answered "yes" to the previous question, have you had the experience of communicating with a "chatbot / virtual expert"?
- • Yes
- • No

5. If you have had the experience of communicating with a "chatbot/virtual expert" please explain in more detail and would you use the service again?

_____

6. Do you know that digital solutions such as robotization of certain human procedures are often used in the back-end operation of service delivery in the telecommunications sector?*
- Yes
- No

7. Are you against the automation of human actions with a robotic solution? *
- Yes
- No

8. If you answered "yes" to the previous question, please briefly elaborate on your answer!

_____

9. Virtual support in the event of a technical problem of the service is established when the agent with whom you communicate via telephone contact will get access to the camera of your smartphone device, during which you will be able to show him the router in real time and accordingly the agent will be able to give you instructions on how to fix it. This makes the service instantaneous instead of waiting for a technician to visit your home to repair the router. Would you agree to this procedure or would you still choose a physical person to check the technical equipment? *
- Yes, I would agree with virtual support
- No, I would still like a physical person to check the technical equipment

10. Please briefly explain your answer to the previous question!
- Yes
- No

11. Have you ever heard of a service in the telecommunications sector for virtual support in the event of a technical equipment problem (for example, a malfunctioning Internet router)? *
- Yes
- No

12. If you answered "yes" to the previous question, have you had the experience of using a virtual support service during a technical problem with a service from a company in the telecommunications sector?

    • Yes
    • No

ISKRA STANCEVA GIGOV[*]
VLADIMIR PETKOVSKI[**]

ECONOMIC SECURITY AND PHYSICAL SAFETY IN EU COUNTRIES

Abstract: Evaluating of the population quality of life in each country, including EU countries, it is especially important to take into account economic security and physical safety. These are particularly sensitive categories in the context of a crisis of a different nature, including the Covid-19 pandemic health crisis. Considering that, the paper is aimed at perceiving the conditions and changes in the economic security and physical safety of the EU countries' population, particularly in the period after the emergence of the global financial and economic crisis, as well as the Covid-19 pandemic, namely from 2010 to 2021.

The results indicate that the global financial and economic crisis has a direct impact on the economic security of individuals in the EU. Thus, seen from 2010 to 2014, there is a gradual increase in the share of the population that cannot cope with unexpected expenses and/or has regular monthly payments in arrears. These participations are decreasing over the coming years, including the years after the emergence of the Covid-19 pandemic. The pandemic did not leave drastic consequences in a large part of the EU countries in the analyzed segments, i.e. they successfully coped with the unexpected financial implications of the pandemic crisis and the payment of regular expenses, as well as in maintaining physical safety.

Key words: Material living conditions, Economic security, Physical safety, EU countries

JEL classification: I31, D6

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Introduction

There are many risks that can unexpectedly and negatively affect the financial security of an individual or household. These risks are usually divided into two categories: economic and physical security. The first category is analyzed through statistics that measure a range of different situations that people may face, such as not being able to face unexpected financial costs or being short of financial means to pay a mortgage, rent, utility bills or rent. The second part of the analysis deals with physical security, analyzing crime statistics as well as subjective information about the share of the population that faces crime, violence or vandalism in the area where they live.

These are particularly sensitive categories in conditions of crisis of various nature, including the health pandemic crisis Covid-19. For this purpose, the paper is aimed at evaluating the economic security and physical safety of the population in the EU countries, as well as the changes that occurred especially in the period immediately after the emergence of the global financial crisis (2007/2008) as well as the period of the emergence of the Covid-19 pandemic. In doing so, relevant indicators are used during the research.

The rest of this paper is structured as follows. In the next section results related to economic security are perceived. Then the analyzes and results related to physical security follow, and finally the key conclusions from the analysis are drawn.

1. ECONOMIC SECURITY OF EU COUNTRIES

The concept of economic security, in a narrow sense, implies the ability of an individual to use financial resources if they are urgently needed. Broadly defined, it encompasses the overall vulnerability or resilience of people to such adverse situations and the existence of support mechanisms - human and social resources - that provide the necessary security to individuals.

Having in mind that economic security is especially important for the people quality of life, including in EU, this part of the paper focus on the evaluation of this aspect. Hence, the data in Chart 1 indicates that in 2019, almost every third person (30.9%) in the EU can't cope with unexpected financial expenses. As a consequence of the global financial and economic crisis, the share of the population that could not face unexpected financial expenses was 37.1%

in 2010, and this share gradually rose to a peak of 40.4% by 2012.[1] This means that this kind of crisis left significant impact on the economic security and EU citizens' quality of life.

Chart 1. Percentage of population with the inability to face unexpected financial expenses, 2010 and 2019
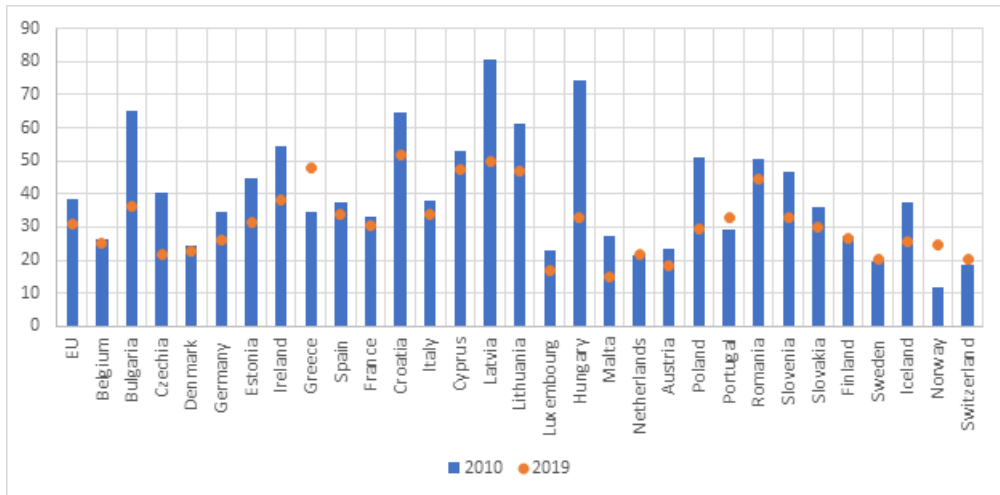
Source: Eurostat (ilc_mdes04)

The data also shows that economic uncertainty was generally more prevalent in two of the Baltic (Latvia and Lithuania), several Eastern (Croatia, Romania, Bulgaria), as well as in two Southern member states (Greece and Cyprus). In 2019, more than half of the population stated that they could not pay for unexpected financial expenses in one of the member states of the European Union (EU), namely Croatia (51.7%). On the other hand, less than a quarter of the population faced such difficulties in Denmark, Netherlands, Czech Republic, Sweden, Austria, Luxembourg and Malta, where the lowest participation was recorded, at 15.1%.

Across the EU, the share of the population unable to face unexpected financial costs fell by 6.2 percentage points between 2010 and 2019. The largest decrease was observed in Hungary, where the share of the population unable to face unexpected financial expenses fell by 40.9 percentage points.

The impact of the Covid19 pandemic is visible in Chart 2, which present that similar conditions are observed even after the outbreak of the pandemic.

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[1]   Eurostat, https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes04/default/table?lang=en

Namely, in the majority of EU countries, the tendency to reduce the percentage of people who cannot face unforeseen expenses from 2019 continued in 2020 and 2021, while in some it remained at the same level. The exception is a few of them (Bulgaria, Germany, Greece, Spain, Luxembourg, Hungary, Malta and Romania) where the crisis caused a certain increase in this percentage. But this applies mainly to 2020. Already in 2021, the trend of decreasing this percentage continues in these countries as well. This indicates that despite expected deteriorations as a result of the pandemic, stable economies did not allow the pandemic to be reflected in the quality of life of the population seen through this indicator.

Chart 2. Percentage of population unable to face unexpected financial costs after the outbreak of the Covid-19 pandemic
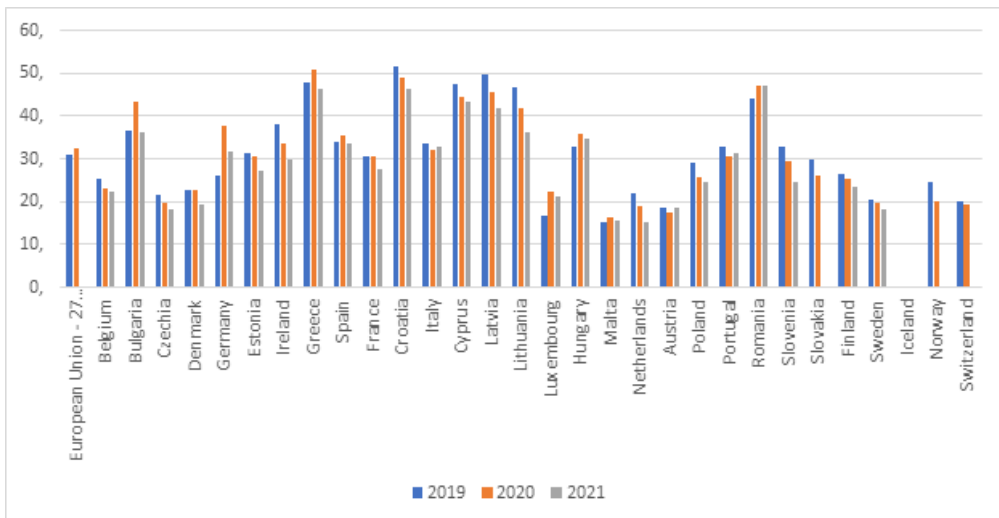
Source: Eurostat (ilc_mdes04)

In its broadest sense, the term economic vulnerability refers to situations in which individuals, households or subgroups of the population are exposed to risks as a result of insufficient resources to deal with the consequences of unexpected situations. This indicator can be used to identify those groups in society that are unable to withstand the potential damage that may be caused by an unwelcome (financial) shock. As a matter of course, most of the population living below the poverty line could not face unexpected financial expenses. The risk of economic vulnerability in many of these countries was often significantly higher for people living below the poverty line than for

people living above the poverty line. In 2019, almost two thirds (63.7%) of the EU population living below the poverty line faced such risks, while the corresponding share of people living above the poverty line was less than a quarter (24.4%). As shown, overall economic vulnerability is generally less prevalent in Western and Nordic member states.[2]

Chart 3. Percentage of population with mortgage or rental arrears, 2010 and 2019
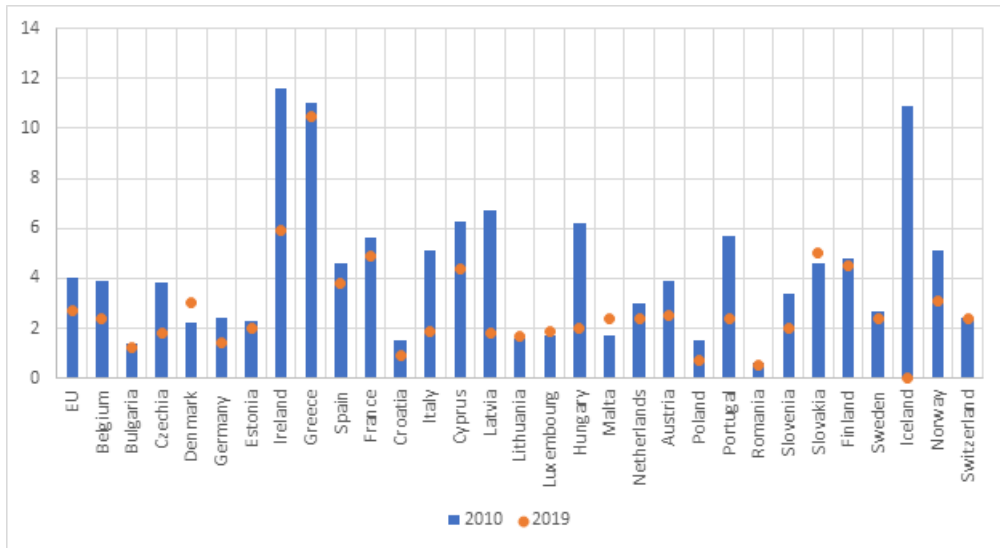
Source: Eurostat (ilc_mdes06)

When it comes to indebtedness and unpaid debts of the population, in 2019, mortgage or rental arrears were most prevalent in Greece, where 10.5% of the total population had outstanding debts of this type. This is significantly higher than in any other EU member state, as the next highest percentage was recorded in Ireland 5.9%, followed by Slovakia 5.0%. The share of the population reporting mortgage or rent arrears is below 5.0% in the rest of the EU member states, falling to less than 2.0% in ten of them and reaching a low of 0.5% in Romania. These low levels are partly a result of the small share of the overall population that had a mortgage or rented at market rates, limiting the proportion of people who might be in arrears on their mortgage or rent. The

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[2]   Petkovski V. and Stanceva Gigov, I., Kvalitetot na zivot na naselenieto vo Republika Severna Makedonija vo vreme na Covid-19 pandemijata, Univerzitet Sv. Kiril i Metodij vo Skopje, Ekonomski institut – Skopje, Skopje, 2022 godina, p. 95

percentage of the population in arrears with mortgage or rent payments more than doubled between 2010 and 2019 in Malta (from 1.1% to 2.4%), while four other member states registered a minimal increase, namely Greece (from 10.2% to 10.5%.), Denmark (from 2.7% to 3.0%), Lithuania (from 1.3% to 1.7%) and Luxembourg (from 1.4% to 1 .9%). On the other hand, in twenty-one member states, that share of the population decreased slightly. (Chart 3)

Chart 4. Percentage of population with mortgage or rental arrears after the outbreak of the Covid-19 pandemic
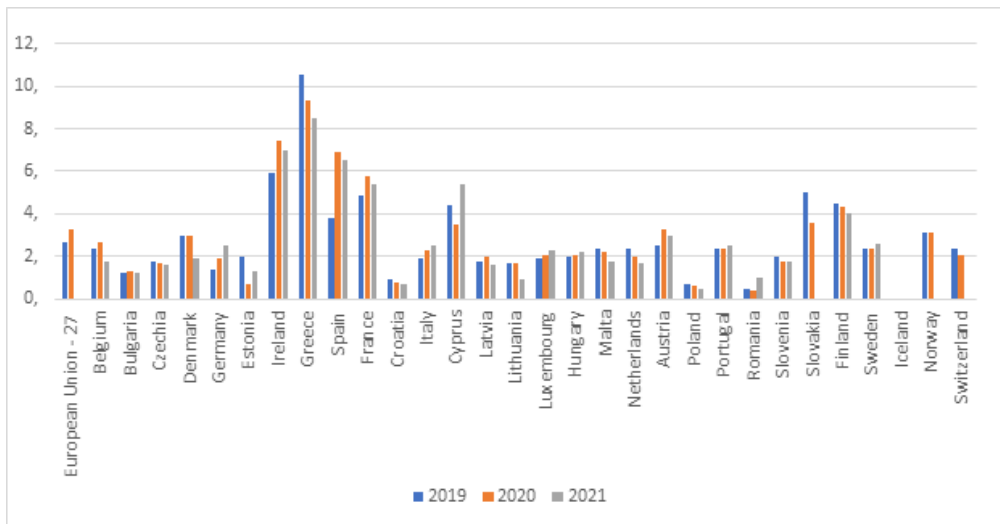
Source: Eurostat (ilc_mdes06)

The data presented in Chart 5 cover the broader concept, which in addition to arrears for housing-related payments (mortgage or rent), also includes arrears for other items such as utility bills or rent payments that are usually paid in monthly instalments. Less than a tenth (8.2%) of the EU population had such outstanding debts in 2019. In Greece, almost half (41.4 %) of the population had mortgage or rent debts, utility bills or rent payments, and this share is almost a third (29.3 %) in Bulgaria. In contrast, 17 of the 27 member states recorded single-digit percentages of less than 10.0%. At the same time, the percentage of the population that was in arrears on mortgage or rent, utility bills or rent payments fell to 2.8% in the Czech Republic. In 2019, the share of the Romanian population that was late on mortgage or rent, utility bills or rent payments was about 30.8 times higher than the share that was late only on mortgage or rent payments. A similar pattern is observed in Croatia (17.4 times

higher) and Bulgaria (24.4 times higher), where the vast majority of arrears are therefore related to utility bills or rent payments.

In the conditions of a pandemic crisis, there is a certain increase in this percentage of the population in almost 11 EU countries in the range of 0.1 to 1.5 percentage points in a given country, presented in Chart 3. Taking into account the changes from the pre-pandemic period that were previously shown, it can be concluded that the crisis caused only minor shifts in the negative direction in certain countries. (Chart 4)

Chart 5. Percentage of population with arrears (mortgage or rent, utility bills or hire purchase), 2010 and 2019
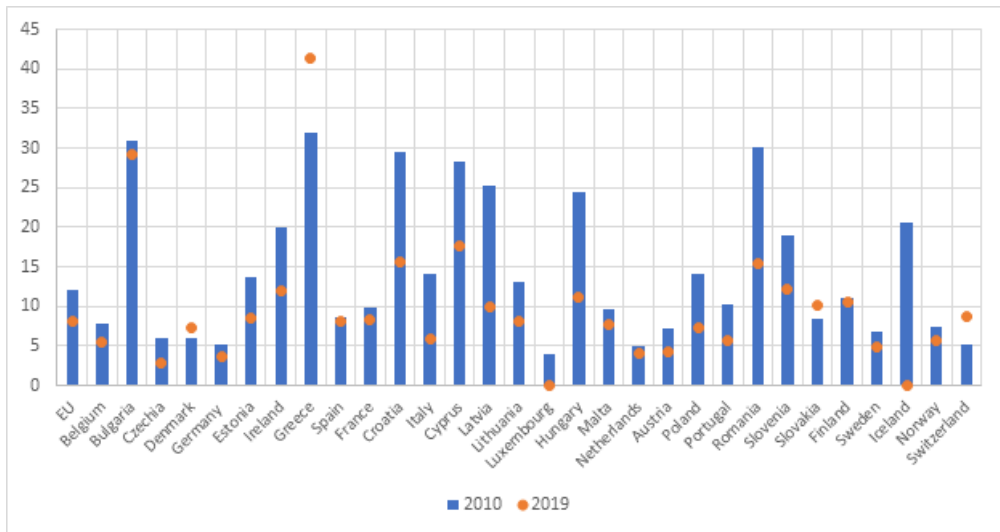
Source: Eurostat (ilc_mdes05)

The overall proportion of the EU population with mortgage or rent arrears, utility bills or rent payments fell by 4.2 percentage points between 2010 and 2019. However, in three EU member states, in the same period, the share increased, most notably in Greece (+10.5 percentage points), the other two countries are Denmark and Finland (increases were really small, 1.1 and 0.2 percentage points points, respectively). In Malta, this share remained unchanged in the relevant period. In all the remaining 23 member states, the share of the population in mortgage or rent arrears, utility bills or rent payments fell, most notably in Latvia (-15.3 percentage points) and Croatia (-14.4 percentage points).

Also according to this indicator, in 2020 in almost 40% of the countries there were minimal increases in the percentage of the population that is late in paying this category of expenses. Given that the changes are minor, it is considered that the pandemic did not cause drastic disruptions in this segment of the population's life. (Chart 6)

In addition to low income (both in relative and absolute terms), which is a major contributing factor in explaining the proportion of the population in arrears for mortgage or rent, utility bills or rent payments, there are other factors that can affect the ability of individuals to service their debt and other regular expenses. One of them is the composition of the household. For example, people living in single-person households with dependent children or households with three or more dependent children are more likely to experience economic insecurity than the population as a whole. While, in 2019, just under a tenth (8.2%) of the EU population had mortgage or rent arrears, utility bills or rent payments, this share is almost double - 15.5% among households with single persons with dependent children and it was also significantly higher, i.e. 13.3% in households consisting of two adults with three or more dependent children. In all EU member states, households 58.9% in Greece and 35.2% in Bulgaria. Households consisting of two adults

Chart 6. Percentage of population with arrears (mortgage or rent, utility bills or hire purchase) after the outbreak of the Covid-19 pandemic
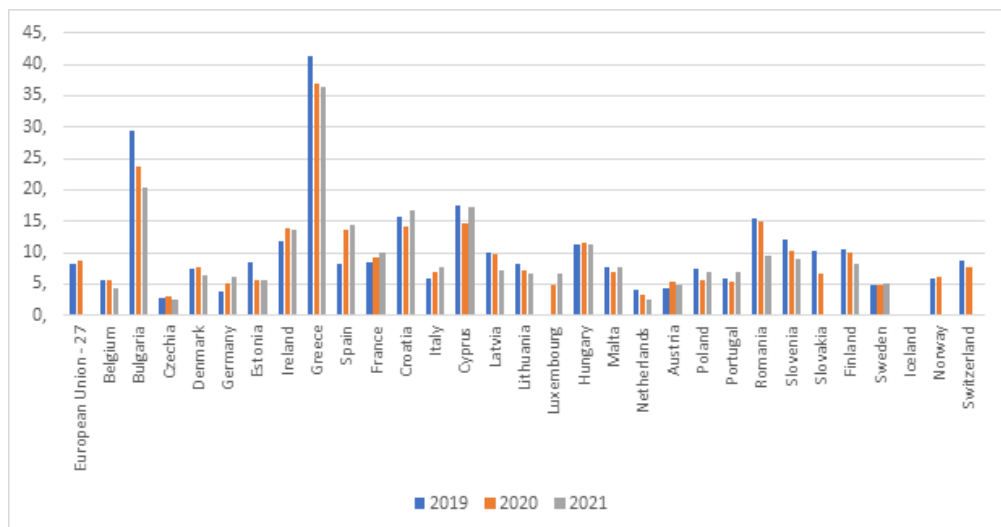
Source: Eurostat (ilc_mdes05)

with three or more dependent children were also more likely to be in debt than the average share. This share reached a maximum of almost two-thirds (60.0%) in Bulgaria, while the next highest shares were recorded in Greece (52.0%) and Cyprus (29.5%).[3]

2. PHYSICAL SAFETY IN EU COUNTRIES

In addition to financial security, the physical security of the population is also important for the quality of life. Physical safety refers to protection from any situation that puts an individual's physical safety at risk - this can include crime and violence. Often, the perceived lack of physical safety can affect the subjective well-being of the population. For example, homicide accounts for only a small proportion of the total number of deaths in the EU each year, but its impact on people's emotional lives can be significant. Consequently, some crimes that have the potential to affect a person's physical safety are often socially amplified, increasing feelings of insecurity or anxiety.

In 2019, the homicide rate per 100,000 inhabitants peaked at 4.74 in Latvia, with the second and third highest rates also among the Baltic member states, with 3.01 homicides per 100,000 inhabitants in Lithuania and 1.74 in Estonia. At the other end of the range, the lowest coefficients are recorded in Slovenia (0.48), Italy (0.52) and Poland (0.54). A comparison between 2010 and 2019 reveals that the number of homicides per 100,000 inhabitants is generally declining. The incidence of homicides fell by a significant margin in both Lithuania and Estonia, while relatively large decreases were also seen in Luxembourg, Greece and Bulgaria. In six EU member states, an increase in the rate was observed: Denmark, France, Austria, Sweden, Cyprus and Latvia. (Chart 7)

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[3]   Op.Cit., Petkovski V. and Stanceva Gigov, I., Kvalitetot na zivot na naselenieto vo Republika Severna Makedonija vo vreme na Covid-19 pandemijata, ..., p. 98

Chart 7. Number of Intentional homicide Per hundred thousand inhabitants in EU countries, 2010, 2019 and 2020
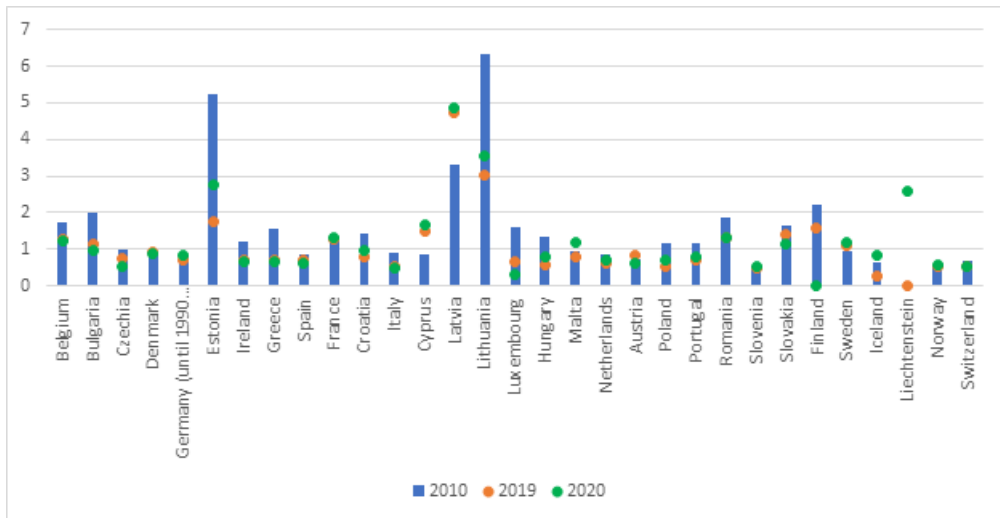
Source: Eurostat (crim_off_cat)

The number of homicides during the pandemic year 2020 shows a certain stability. Namely, there are no major disturbances and significant increases in these figures. Hence, the pandemic did not leave direct negative implications in this segment that year. But it should also be assumed that the pandemic may have its impact on the number of homicides a little later, in a year. (Chart 7)

As previously mentioned, individual perceptions of crime rates do not always correspond to the actual prevalence of crime, and this is one reason why subjective indicators can be useful as a supplement to objective indicators. In 2019, almost one in nine people (11.0%) in EU witnessed crime, violence or vandalism in the area where they lived (see Figure 47). This share peaked with more than a fifth (20.2%) of the population in Bulgaria, followed by 16.9% in Greece and 16.3% in the Netherlands. In 16 member states, the share of the population that perceived crime, violence or vandalism in their area was less than 10.0%, and the lowest rates were recorded in Hungary (5.3%), Poland (4.4%), Lithuania (3 .2%) and Croatia (2.7%). (Chart 8)

Between 2010 and 2019, generally there has been a decline in the share of the population who have perceived crime, violence or vandalism in the area where they live. In the EU, this percentage fell from 13.1% in 2010 to 11.0% in 2019, and it also fell in the majority (22 out of 27) of the member states. There are relatively large reductions in Latvia, Estonia, the Czech Republic and Bul-

garia. In contrast, the proportion of the population who witnessed crime, violence or vandalism in their area of residence increased at a modest pace in five Member States. Sweden recorded the biggest increase (by 1.7 percentage points). Such relatively similar tendencies and conditions were also observed during the pandemic year 2020. (Chart 8)

Chart 8. Percentage of the population who have witnessed crime, violence or vandalism in their area of residence, 2010, 2019 and 2020
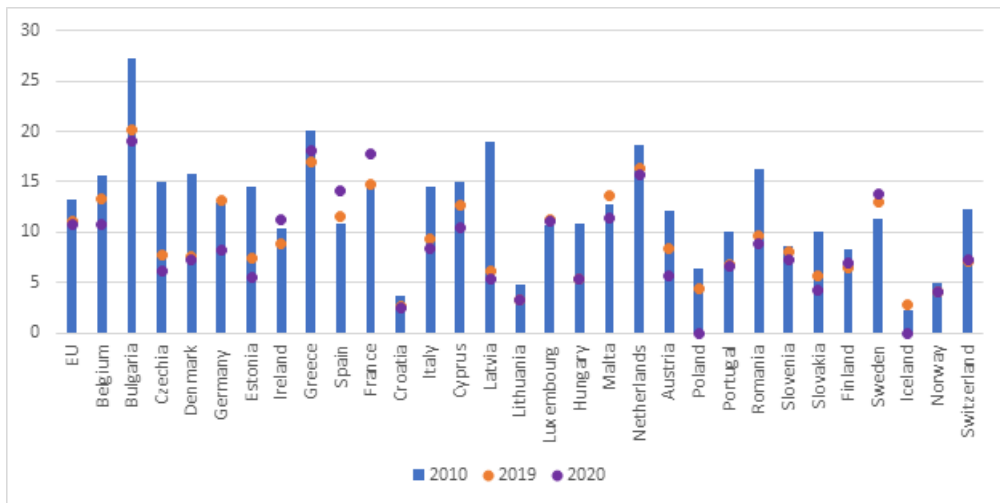
Source: Eurostat (ilc_mddw03)

Likewise, 13.4% of the EU population living below the poverty line in 2019 thought there was crime, violence or vandalism in the area where they lived. This percentage is slightly lower among the population that lived above the poverty threshold (10.6%). This pattern is found in most EU member states and was particularly evident in France, with respective proportions of 21.8% and 13.6%.[4]

The Chart 9 below shows the perceived crime, violence or vandalism according to the degree of urbanization. In 2019, the perception among the EU population that these issues were relevant to the area where they lived was significantly higher for people living in cities (17.0%) than suburbs (9.1%) or rural areas (5.6%). The percentage of the population that believes there is crime, violence or vandalism in the area where they lived is the highest in

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[4]   Eurostat, https://ec.europa.eu/eurostat/databrowser/view/ILC_MDDW03__custom_17807 50/default/table?lang=en

Bulgaria. In 2019, the share of people living in Bulgarian cities who noticed such problems was 1.6 times higher than the EU average (27.8% compared to 17.0%). The lowest levels of perception - in all three degrees of urbanization - were observed in Lithuania and Croatia.

In all EU member states, the highest perception of crime, violence or vandalism is seen among people living in cities. More than a quarter of city dwellers in Bulgaria and Greece and more than 20% in France, Germany, the Netherlands and Belgium reported such security problems. The lowest perception of crime, violence or vandalism is generally seen among people living in rural areas. This pattern was repeated in most member states, except Bulgaria, Belgium, Estonia, Hungary and Lithuania, for which the lowest rate was recorded for cities and suburbs.

Char 9. Percentage of the population who witnessed crime, violence or vandalism in their place of residence, according to degree of urbanization 2019

Source: Eurostat (ilc_mddw06)

In Latvia, the share of city dwellers who have witnessed crime, violence or vandalism in their area is 8.4 times higher than for people living in rural areas. In Ireland, Croatia, Germany, the Czech Republic, Greece, Poland and Austria, the perception of security problems among city dwellers was at least 3.5 times higher than among people living in rural areas. On the other hand, in Hungary, Slovakia, Romania, Cyprus, Belgium, Bulgaria and Sweden, the

share of city dwellers who have noticed such problems is less than double that of people living in rural areas.

Conclusion

The foregoing shows that the global financial and economic crisis has a direct impact on the economic security of individuals in the EU. Thus, by 2014 there was a gradual increase in the share of the population that could not cope with unexpected expenses and/or had regular monthly payments in arrears, but these shares fell during the following years.

A relatively high share of the population of Greece, Bulgaria and Cyprus had debts for mortgages, rent, utility bills or rent payments in 2019, while economic insecurity, measured by the share of the population unable to face unexpected financial costs, affected of more than half of Croatia's total population. In addition, people who were at risk of poverty (living below the poverty line) were more likely to be unable to service their regular payments or to be unable to cope with unexpected financial expenses. Also, households composed of single adults with children and households composed of two adults with three or more dependent children are generally the most economically vulnerable subpopulation when analyzing information by household type.

The impact of the Covid-19 pandemic, although expected to exacerbate the problem, that did not happen. Fortunately, it only minimally reflected in a negative direction and only in some countries. At the same time, the pandemic did not further threaten or reduce the level of personal safety. Hence, it can be concluded that it did not affect the level of economic security and physical security at least for this short period of analysis. The consequences of this crisis may be felt later, but they will not be able to be directly distinguished, considering the new economic crisis as well as the crisis caused by the military conflict between Ukraine and Russia.

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THE CHALLENGES OF TOUCHPOINT MANAGEMENT OF TELECOMMUNICATIONS COMPANIES WITH EMPIRICAL ANALYSIS FOR THE REPUBLIC OF NORTH MACEDONIA

Abstract: The goal of touchpoint management is to create the best possible customer experience in a company, determined by customers' satisfaction and the development of innovative opportunities to improve service quality in all functional areas in the company's organizational structure. Nowadays, the development of information communication technologies has enabled innovative ways to get in touch with customers, so successful telecommunications companies pay great attention to customer experience and touchpoint management, as critical factors for customer retention.

The goal of the research in this paper is to explore the various touchpoints and the challenges of managing them in creating a positive customer experience for customers. In order to examine the influence of successful touchpoint management on positive customer experience and the increase of customer satisfaction, an empirical survey of the customers of the two largest telecommunications companies in the Republic of North Macedonia was carried out.

Key words: Customer experience, Touchpoints, Telecommunications companies, Customers, Customer satisfaction
JEL Classification: M31, O32

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Introduction

Touchpoint management enables efficient and effective communication with customers, while building long term relationships with them. The literature identifies six aspects of the communication process: message, communicator(s), dyad (relationship), interaction, context, and smart/technological device. For the communication process to be of a high quality and to enable a positive customer experience, there are a number of factors that companies should take into account when managing touchpoints, among which the most important are accessibility (preference and skills) and effectiveness (achieving the goal of communication)[1].

The possibility of managing the touchpoints appears when the customer has available several touchpoints for interaction with the company, as well as the possibility of their various combinations. The combination of touchpoints can be managed in different ways, depending on the specified parameters and barriers between the participants in the communication process.

Touchpoints can provide a lot of information, even more than the required amount. The communicator, in this case the telecommunication operator, is the one who decides how much data from a given touchpoint he needs and the customer will receive. If there is a need for the involvement of a human resource/employee in the touchpoint, then his abilities and skills can support the process of managing the touchpoints, in order to provide the customer with a positive customer experience.

The touchpoint mapping is an intuitive and easy way to understand customer experience based on touchpoints, from the management side of companies[2]. By applying quantitative methods for data collection in the mapping process, a real insight into the customer experience of the customers in a given company is obtained.

The main goal of this paper is to identify the touchpoints that are crucial for a positive customer experience and the touchpoints that customers do not use at all or are dissatisfied with them and may be the reason for ending the cooperation with the company.

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[1]   Jensen, M.: Touchpoints, Time and Dyads: A case of Internal Organizational Communication, International Journal of Multidisciplinary Academic Research, 4(2), 2016, 21–33
[2]   Halvorsrud, R., Kvale, K. & Følstad, A.: Improving Service Quality through Customer Journey Analysis, Journal of Service Theory and Practice, 26(6), 2016, pp. 840-867

1. CUSTOMER EXPERIENCE DEFINITION AND MAPPING

The concept of customer experience was established in the 90s of the last century. The customer experience can be viewed from two points of view: customer's side and company's side. Creating the best customer experience is a critical success factor for companies, because there is a high correlation between customer satisfaction and company revenues. Ensuring a positive customer experience requires a cross-functional approach throughout the organizational structure and its functions.[3]

In recent years, customer experiences are co-created by customers and the company, with customers being co -creators of the customer experience, not just passive recipients of what companies provide to them. Nowadays the customers have the power to influence the consumption decisions of others, to shape the internal processes of companies, and make suggestions for service innovation, design and delivered experience. Customer experience is one of the fastest growing areas today, managing the way customers visit and behave in-store. The key to success is the company to rely on touch, taste and hearing, to create experiences, manage expectations, emotional restraint and activate customers' memories.[4]

Several studies have raised awareness of considering the customer experience as input into the design and management processes.[5] This input can be in different forms, such as mapping the customer experience, redesigning the customer experience in the internal organization of the company, co-designing the customer experience directly with the customers and satisfaction measurement of key customer experiences.[6]

There are five steps defined in the customer experience mapping process[7]:

1. Integrating customer history data available to companies, as well as customer feedback and past experiences.

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[3]   Gulati, R.: Silo busting. Harvard business review, 85(5), 2007, 98-108

[4]   Hong, T.: *Customer Experience as a Competitive Differentiator in Subscription Services – Thinking Beyond the Paywall*. Helsinki Metropolia University of Applied Sciences, 2016

[5]   Halvorsrud, R., Kvale, K. & Følstad, A.: Improving Service Quality through Customer Journey Analysis, Journal of Service Theory and Practice, 26(6), 2016, pp. 840-867.

[6]   Rawson, A., Duncan, E. & Jones, C. (2013). The truth about customer experience. Harvard Business Review, 91, 90-98

[7]   Temkin, D. B., Mcinnes, A. & Zinsor, R.: Mapping the Customer Journey. Forrester Research Inc., 2010, 1-20

2. Development of initial assumptions about ways to improve customer experience, through analysis of interactions between customers and companies.

3. Researching the needs, perceptions and preferences of customers as a basis for improving business processes that include interactive points.

4. Analysis of the data obtained from the previous steps at an individual level, of each customer or each interaction, with special reference to how the interactions affect the perception of the brand.

5. Mapping the customer experience, i.e. translating the previously mentioned analysis into a simple map, thus obtaining final conclusions about the analyzed business processes, about the needs and perceptions of the customers.

As a result of customer experience mapping, the company should eliminate the reasons of the inappropriate and ineffective experience of customers who regularly interact with the company, that is, to redesign the customer experience. The implementation of the redesigned customer experience is an extremely essential and challenging step, which involves two changes at a high organizational level[8]:

- Modifying the organization and its processes to deliver excellent customer experiences; and
- Aligning metrics and incentives to support customer experience, not just touchpoints.

Embracing the new customer experience enables company transformation with cross-functional business processes and enabling bottom-up innovation.

2. THE CHALLENGES OF TOUCHPOINT MANAGEMENT

Nowadays, the globalization of the market and the development of information communication technologies have opened up many ways to get in touch with customers, so companies pay more attention to the management of touchpoints, especially the quality of the communication process and the relationship with customers.

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[8]   Rawson, A., Duncan, E. & Jones, C. (2013). The truth about customer experience. Harvard Business Review, 91, 90-98

The term touchpoint originally comes from the field of business and marketing communications. In marketing, customer touchpoints are defined as points of contact with brand customers and many studies in the field of marketing communications have attempted to identify and study them.[9] Touchpoints include verbal and non-verbal communication as a way of human expression of thoughts and feelings.

A touchpoint is defined as anything (area, point/set of points or surface/ set of surfaces) in time and space in order to temporarily enable information sharing and connection of customers.[10] Nowadays, people stay in touch using smartphones, social media, SMS, email, video calls, or multimedia messaging service (MMS). So, this means that touchpoints can rely on several media, but also on one or more channels.

Behavior with a certain level of communication is basically intentional. In the process of achieving specific goals, people tend to use specific actions that are highly complementary to their goals.[11] This combination is called the goal-action relationship and is the simplest way to recognize other people's intentions. People try to guess what other individuals intend because every person is goal-oriented in the process of communicating with others and always plans to reach personal goals with the help of communication techniques.

The touchpoint is also defined as the occurrence of direct contact between the customer and the actual product or service.[12] Touchpoints work in both directions, they can be recognized from the customer's perspective, as well as from the company's perspective. Therefore, it is crucial for the company to recognize the touchpoints from its own point of view, but also to get familiar the recognized touchpoints from the customers.

The touchpoint management allows gaining a comprehensive view of the customer experience, focusing on all touchpoints, because focusing on a few of them may not give the expected results. The complete customer experience designed today is typically a mixture of many touchpoints, live and

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9   Lee, K., Chung, K. W., & Nam, K. Y.: Orchestrating designable touchpoints for service businesses. Design management review, 24 (3), 2013, pp.14–21
10   Jensen, M.: Touchpoints, Time and Dyads: A case of Internal Organizational Communication, International Journal of Multidisciplinary Academic Research, 4(2), 2016, 21–33
11   Wilson, S. R.: Communication theory and the concept of „goal". In: Whaley, B. B. & Samter, W. (eds.). Explaining communication. Contemporary theories and exemplars. London: Routledge, 2010
12   Roto, V., Joutsela, M. & Nuutinen, M.: Brand Experience Goals Guiding the Design of Multiple Touchpoints. Presentation. Experience design for multi-ple customer touchpoints. Conference NordiCHI'16 on October 23-27. Gothenburg, 2016

digital channels, which imposes the need for a comprehensive view of the full orchestra of touchpoints. In other words, the goal of the touchpoint management is the creation of the best possible customer experience in a company, determined by customer satisfaction and the development of innovative methods to improve service in all functional units in the company's organizational structure (sales, marketing, customer care etc.). [13]

Touchpoints can be categorized in several ways, and for the purposes of this paper special emphasis is given to the categorization of touchpoints in relation to the purchase process. Knowing the touchpoints in the pre-purchase, during purchase and post-purchase stages is vital. To increase overall customer satisfaction, an excellent customer experience needs to be delivered across all touchpoints to meet customer expectations throughout their interactions with the company. This categorization is also used in the empirical research conducted in this paper.

Table 1. Categorization of touchpoints in relation to the purchase process

Before purchase	During purchase	After purchase
Social Media	Store/Office	Billing
Ratings & Reviews	Website	Transactional Email
Recommendations (WOM)	Catalog	E-mail Marketing
Advertising	Contact center	After sales support
Marketing/PR	Sales Staff	Online Help Center

Source: Survey Monkey (2022). Identify Customer Touchpoints. Available at :
https://www.surveymonkey.com/mp/identify-customer-touchpoints/

2.1. Touchpoint management in telecommunications companies

For the purposes of this paper, we can define touchpoints as different points in the experience of contacts between a telecommunications company and its customers, including cognitive, emotional, behavioral, sensory and social components.[14]

From a company's business perspective, customer experience encompasses every aspect of a company's offering – the quality of customer care, but

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[13]   Lotz, S., Raabe, J. & Roggenhofer, S.: The role of customer care in a customer experience transformation. McKinsey on Customer Care: Excellence in the Digital Age, 1, 2019, 1-7
[14]   Lemon, K. N. & Verhoef, P. C.: Understanding Customer Experience Throughout the Customer Journey. Journal of Marketing, 80 (November), 2016, 69–96

also advertising, product packaging and service features, ease of use and reliability. It is an internal and subjective response that customers have with any direct or indirect contact with the telecommunication company.

Customers and telecommunication companies today communicate through multiple channels and media, making the customer experience even more complex.[15] For example, a customer may initially contact a telecommunications company through its website, then send an email, call the company, meet with a consultant at the point of sale, and after a week ask a question on the company's Facebook page. Telecommunication companies that manage to improve these interactions at all touchpoints throughout the customer experience, have a competitive advantage and are able to improve customer relationships.

The ease of interaction, as well as the quality of the interaction can be a determinant for implementing a successful touchpoint management strategy. In fact, touchpoint management generally requires close interaction between the telecommunication company and the customer. Successful telecommunication companies establish systems that facilitate this interaction, obtaining specific information needed to translate individual customer needs into specific product specifications. This results in a close company-customer base interaction, adding value to both the telecommunications company and the customer.

Several studies show that the two main drivers of customer satisfaction are product/service quality and interaction quality. To achieve a high degree of customer satisfaction, it is necessary, but not sufficient, to deliver high-quality telecommunication products or services. Telecommunication companies are also committed to creating and managing customer interaction points in a way that meets customer expectations.

We can conclude that touchpoint management is a relatively new marketing tool that aims to find, evaluate and control customer touchpoints by collecting customer feedback.

3. EMPIRICAL RESEARCH

The subject of research of this paper is the touchpoint management as a basis for a successful customer experience of the telecommunication operators present in the Republic of North Macedonia.

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15   Rawson, A., Duncan, E. & Jones, C. (2013). The truth about customer experience. Harvard Business Review, 91, 90-98

The purpose of the research is to show the value of a successful customer experience and to explore the different touchpoints and the way of their management – which help in its realization. Good products and services are not enough for a business to be successful. To stand out, companies need to provide a heterogeneous (unlike the competition) yet successful customer experience for their customers. For the realization of the purpose of the research, a survey was conducted of the customers of the two largest telecommunication operators in the Republic of North Macedonia - A1 Macedonia and Makedonski Telekom.

The research question analyzed in this paper refers to the quality of the customer experience created by telecommunication operators in the Republic of North Macedonia, and how it affects the retention of their customers. Furthermore, the effects of appropriate combinations of multiple touchpoints that are expected to add value to business operations and increase customer satisfaction are analyzed. This leads to the following four research questions that are the subject of analysis in this paper:

1. What are the customer touchpoints in telecommunications companies?
2. Is the mass customization of telecommunications companies relevant to optimize customer experience?
3. Which touchpoints have a high probability of mass customization for the telecommunication companies and are most relevant to a positive customer experience?
4. What are the main touchpoints for which customers would recommend the telecommunications company through word of mouth (WOM)?

The empirical research consists of a quantitative analysis that was conducted on a random sample of 120 respondents - customers of the telecommunication operators.

The survey was conducted through an online questionnaire consisting of 19 questions and sent to respondents electronically. The collected results of the research were further processed accordingly in order to perceive the level of satisfaction of the respondents with the touchpoints of the telecommunication companies.

The survey questionnaire consists of two parts. Through the questions from the first part, the demographic data for the respondents were collected, namely gender, age, education and how long the respondent has been using the company's telecommunication services. In the second part, respondents on a Likert scale from 1 to 5 declared the influence of the touchpoints grouped in re-

lation to the purchase process, that is, whether they refer to before the purchase process, during the purchase process or after the purchase process. Respondents declare themselves with a grade from 1 - the lowest level of satisfaction, to 5 - the highest level of satisfaction with the touchpoint used by the company.

The results of the research on the touchpoints in the pre-purchase period show that respondents believe that the marketing/PR touchpoint has the greatest impact on their satisfaction, with an average score of 4.06 for all respondents, or 4.17 or 3.95 for the telecommunication operators Telecom Macedonia or A1. The next touchpoint that contributed the most to customer satisfaction was advertising, with an average score of 4.045, or 4.14 and 3.95 for the two telecommunication operators, Telecom and A1. The touchpoint ratings and reviews had the least impact on customer satisfaction, with an average score on the Likert scale of 3.825, or 3.94 and 3.71 for the two telecommunication operators Telecom and A1 respectively.

The respondents declared the following touchpoints characteristics of the stage during the purchase: store/office, website, catalog, contact center and sales staff. The analyzed data showed that the level of satisfaction of the respondents is the highest for the touchpoint of the store/office with an average score on the Likert scale of 4.155 and for the touchpoint of sale staff with an average score of 4.145. The height of the ratings for the individual telecommunication operators, Telecom and A1 were 4.37 and 3.94 respectively for the touchpoint store and 4.48 and 3.81 for the touchpoint website. The lowest level of satisfaction among the respondents was observed for the touchpoints catalog (3.63 in total, and 3.65 and 3.61 respectively for the two telecommunication operators Telecom and A1) and contact center (3.65 in total on the Likert scale and 3.9 and 3.4 on the same scale for operators Telecom and A1 respectively).

The analysis of customer satisfaction with touchpoints for the post-purchase period shows that the level of satisfaction was the lowest for the touchpoint e-mail marketing, with an overall average score on the Likert scale of 3.69, or 3.77 and 3.61 for telecommunication operators Telecom and A1 respectively. The remaining touchpoints received higher customer satisfaction scores from respondents, with the highest scores for billing with a total score of 4.035 and transactional email with 4.00. The specific scores for telecommunication operators Telecom and A1 are 4.22 and 3.85 respectively for the billing touchpoint, and 4.12 and 3.88 respectively for the transactional email touchpoint.

Conclusion

Customer experiences can be understood from a number of different approaches. If we sublimate them, we could define them as an approach that is widely used in all phases of design research and the management of services and products. Customer experience is a type of business innovation that cannot simply be copied, it is derived from the needs and desires of each company's customers and expresses its uniqueness.

Touchpoints include verbal and non-verbal communication as a way of human expression of thoughts and feelings. It is important to note that a touchpoint is not synonymous with a medium because it can rely on several media. Also, the touchpoint is not a technological device, because it can often be contacted without using devices, or by using more than one device at the same time.

A touchpoint is defined as anything in time and space that temporarily enables the sharing of information and the connection of entities. Each touchpoint has a certain availability, being transmitted from one communicator to another through one or several media. There are multiple categorizations of touchpoints, while this research paper considered touchpoints categorized by purchase, namely pre-purchase touchpoints: social media, ratings and reviews, recommendations (WOM), advertising and marketing/PR; touchpoints during purchase: store/office, website, catalog, contact center and sales staff; and touchpoints after purchase: billing, transactional email, email marketing, after-sales support and online help center. This categorization of touchpoints was implemented in the empirical research, and for them respondents declared their level of customer satisfaction.

From the results of the empirical research conducted on telecommunication services in the Republic of North Macedonia, it can be concluded that telecommunication operators use a combined mix of touchpoints from all three analyzed phases, before purchase, during purchase and after purchase of products and services.

From each group of touchpoints, it is noted that there are one to two points that have a significantly higher level of customer satisfaction, as well as that there are touchpoints that have a lower level of influence on customer satisfaction. It provides a good basis for improving the quality of part of the touchpoints by the companies, with the aim of further increasing their customer satisfaction and reducing the risk of leaving the company by the customers.

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4   Jensen, M.: Touchpoint Management and Interpersonal Communication, *Studies in Media and Communicaton, 4*(1), 2016, 30-48.

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7   Lemon, K. N. & Verhoef, P. C.: Understanding Customer Experience Throughout the Customer Journey. Journal of Marketing, 80 (November), 2016, 69–96.

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12 Temkin, D. B., Mcinnes, A. & Zinsor, R.: Mapping the Customer Journey. Forrester Research Inc., 2010, 1-20

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ANNEX

Questionnaire

The questionnaire consists of 19 questions, of which the first 4 are for rounding, and the remaining 15 are for evaluation from 1 to 5 (1 - do not agree to 5 - completely agree).

First part: General data about the respondent

1. Gender
A) Male
B) Female

2. Age
A) From 18 to 24 years
B) From 25 to 35 years
C) From 35 to 45 years
D) More than 45 years

3. Education
A) Secondary education
B) Higher education
C) Master's degree
D) Doctorate

4. How long have you been a customer of the services of the telecommunications operator A1 Macedonia?
A) From 1 to 2 years
B) From 2 to 5 years
C) More than 5 years

Part Two: Interactive Points

5. Please rate your satisfaction with the listed interactive points which are divided into three groups: before purchase, during purchase and after purchase.

	1	2	3	4	5
Before purchase					
Social Media					
Ratings & Reviews					
Recommendations (WOM)					
Advertising					
Marketing/PR					
During purchase					
Store/Office					
Website					
Catalog					
Contact center					
Sales Staff					
After purchase					
Billing					
Transactional Email					
Email Marketing					
After sales support					
Online Help Center					

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ANALYSIS OF CRISIS MANAGEMENT IN THE HOTEL INDUSTRY: THE CASE OF MACAU

Abstract: Everywhere in the world, the COVID-19 pandemic is still raging, though at a different pace, and Macau is no exception. Due to the coronavirus outbreak, Macau was among the first places outside of Mainland China to begin a cautious tourism shutdown in February 2020. And despite being vital to Macau's economy, tourism and hospitality had all but disappeared by March 2020 after the city closed its borders to domestic and international travelers. This led to a sharp decline in the number of tourists, which had a negative impact on the hotel businesses and gambling establishments that depend on tourists' income. As a result, Macau's hotel income declined. Nonetheless, the decisiveness and speed of Macau's government decision-making of were valid for the hotel recovery and future development of hotel industry. Also, hotels showing their willingness to support and conform to the government's policy was crucial to the management of the crisis.

Key words: COVID-19, crisis management, hotel industry, Macau
JEL Classification: L83; Z32; Z38

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Introduction

The global hotel industry has seen unprecedented levels of disruption as a result of the COVID-19 outbreak. Numerous hotels have been forced to temporarily close or run at a small portion of their capacity as a result of local lockdowns and travel restrictions. And even though the hotel industry is used to dealing with disruptions (for example, the 2003 SARS outbreak), it has never been on this scale.

With every hotel at every corner of the globe being affected at different levels, the hotel sector value chain touches almost all aspects of a country's economy, especially for countries that are highly dependent on tourism. For Macau, the city that is most reliant on tourism, thus directly supporting more than half of its GDP[1], closure due to the virus outbreak came at a huge price, seriously debilitating the hotel sector. On January 22, 2020, the first case of the COVID-19 virus in Macau was verified to have occurred[2]. The country's government then decided to take additional action by enacting several public policies to stop a community outbreak. However, the policies that were implemented concurrently to lessen the economic shock came in thanks to the government's strong financial position, which was made possible by the pre-COVID-19 gaming tax revenue that resulted in a reserve of almost MOP 580 billion (US$72 billion) at the end of 2019[3]. Also, among the uneasy but pragmatic measures were the suspension of tourists visiting the city and an agreement with hotel casino operators to temporarily shut down business for 15 days in February 2020[4]. With this, Macau became the first city outside of Mainland China to enact a tourism lockdown[5].

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1. THE IMPACT OF THE PANDEMIC ON THE HOTEL INDUSTRY AND ITS RESPONSE

The crisis caused by COVID-19 induced a complete collapse of the hotel industry in Macau, creating a dramatic impact on its tourism-dependent economy. As coronavirus cases grew in China, Macau decided to go into lockdown, imposing border restrictions on some visitors worldwide as well as the closure of leisure facilities, canceling events and shows, and taking quarantine measures. In 2019, an increase of 10.1% year-on-year compared with 2018 was recorded in total tourist arrivals, resulting in 39.40 million, out of which 27.92 million (70.9%) came from Mainland China, 7.35 million (18.7%) from Hong Kong, 1.06 million (2.7%) from the Taiwan region, and 13.07% (7.8%) from other markets[6]. A decline in tourists of -85% to 5.89 million was recorded in 2020 due to the travel restrictions. Once their largest market, tourists from Mainland China recorded an 83 percent decline, resulting in 4.75 million[7].

A moreover dramatic collapse has been seen in the hotel industry, where the occupancy rates in 2020 accounted for barely 28.6%, as opposed to 90.8% in 2019 and 91.1% in 2018 (see Table 1). At the end of 2019, there were 123 operating hotel establishments, with a decrease of 3 hotel establishments in 2020 to 120[7].

Table 1. Hotel performance indicators 2015-2020

Year Category	2015	2016	2017	2018	2019	2020
	%	%	%	%	%	%
Grand total	81.5	83.3	87.2	91.1	90.8	28.6
Hotels	82.0	83.8	87.7	91.6	91.4	28.4
5* hotels	83.4	83.7	87.8	92.4	92.2	25.1
4* hotels	80.6	86.3	89.4	91.3	90.2	33.0
3* hotels	79.7	82.3	86.2	91.5	92.2	37.3
2* hotels	67.4	68.4	75.1	73.2	73.9	30.2
Guest houses	59.8	56.5	59.5	62.1	63.8	34.7

Source: Macau Statistics and Census Service (2020)

[6]   Macau Statistics and Census Service (2019). *Macau Travel and Tourism Statistics*. Available at: https://industry.macaotourism.gov.mo/e-publication/MTTS2019/2019_MGTO_Statistics.pdf

[7]   Macau Statistics and Census Service (2020). *Macau Travel and Tourism Statistics*. Available at: https://dataplus.macaotourism.gov.mo/document/CHT/Book/MacauTourismFigures/2020/index.html#p=1

When Macau imposed a tourism lockdown and an entry ban on all visitors worldwide from March 18, 2020, visitors from Mainland China, Hong Kong, and Taiwan were still permitted to enter. Hereby analyzed by type of expenditure, tourists spend MOP 2.54 billion (US$314.4 million), or 21.3%, on accommodation and MOP 2.15 billion (US$267.1 million), or 18.1%, on food and beverages out of the total MOP 11.93 billion (US$1.47 billion)[8].

The total number of hotel overnight guests (see Table 2) was 3.8 million, a decrease of 72.5% from 14.1 million in 2020. If compared with the tourism arrivals in 2020, which amounted to 5.89 million, 3.8 million overnight stays mean that nearly 65.7% of the tourists stayed in hotel establishments. For 2019, out of 39.4 million tourists, 14.1 million account for only 35.7% of overnight stays in hotel establishments. During the travel ban in 2020, Europe saw the biggest decline in Macau with overnight guests of -91.3%, followed by the Americas with -89.7% and Oceania with an -88.8% decline.

Table 2. Hotel overnight guests* 2015-2020

Market Year	Asia	Americas	Europe	Oceania	Others	Total
2015	10,174,836	93,240	66,433	47,925	186,435	10,568,869
2016	11,569,698	103,235	75,262	52,465	199,074	11,999,734
2017	12,710,602	99,477	73,768	49,675	221,651	13,155,173
2018	13,506,092	105,453	72,089	50,167	220,091	13,955,891
2019	13,685,842	106,217	70,240	45,485	194,641	14,102,425
% (18/19)	1.33%	0.7%	-2.5%	-9.3%	-11.5%	1.04%
2020	3,817,669	10,859	6,041	5,076	34,662	3,874,307
% (19/20)	-72.1%	-89.7%	-91.3%	-88.8%	-82.1%	-72.5%

*- Hotel overnight guests – people who stayed in hotel establishments.
Source: Macau Statistics and Census Service (2020)

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8   Macau Statistics and Census Service (2020). *Macau Travel and Tourism Statistics*. Available at: https://dataplus.macaotourism.gov.mo/document/CHT/Book/MacauTourismFigures/2020/index.html#p=1

The devastation caused by the COVID-19 pandemic can be seen everywhere in the mentioned statistics. Hotel occupancy, visitor arrivals, and overnight guest stays all decreased sharply. Aside from the losses, Macau's preparations in the COVID-19 pre-crisis phase in coordination with the hotel industry have proven successful with an outcome of zero deaths and 46 infected cases[9]. Beginning with the cancellation of the Chinese New Year celebrations in mid-January, the Macau government immediately imposed a broad ban on all public celebrations and holidays[10]. Working closely with the hotel industry, good crisis management measures also included a 14-day immediate quarantine policy upon discovering the first imported case, as well as border temperature detection systems[11]. Hotels and other companies all over Macau have also followed the government's requests and have either adjusted their working hours or suspended service until further notice for at least two weeks from February 5, 2020, on. Moreover, hotels were used as quarantine hotels, with, by the end of March, 12 hotels with a total room capacity of 4,534, or 10% of Macau's hotel inventory[12]. The decision for hotels to provide rooms for quarantine is expected as a part of corporate social responsibility[13] and a test for gaming operators on an issue that could be included in the public tendering of future casino licenses[14]. Macau's casino licenses will expire in 2022, signaling the start of a global casino tendering process[15]. By the beginning of April, Macau's government started handling back the quarantine hotels, thus spending US$6.26 million in this period using private sector hotels for the

[9]   Macau Government Tourism Office (2020). *Special webpage against epidemics*. Available at: www.ssm.gov.mo/

[10] Macau Tourism Dataplus (2020). *1st October golden week (2019)*. Available at: www.pata.org/macaotourism-data-plus-debuts-golden-week-statistics/

[11] Liu, M. T., Wang, S., McCartney, G. & Wong, I. A. (2021). Taking a break is for accomplishing a longer journey: hospitality industry in Macao under the COVID-19 pandemic. *International Journal of Contemporary Hospitality Management. 33*(4), 1249-1275.

[12] Lam, A. (2020). *Quarantine capacity rising after Sheraton becomes first Cotai property to volunteer*. Available at: https://macaudailytimes.com.mo/quarantine-capacity-rising-after-sheraton-becomes-first-cotai-property-to-volunteer.html

[13] McCartney, G. (2021). *The impact of the coronavirus outbreak on Macao. From tourism lockdown to tourism recovery. Current issues in tourism, 24*(19). 2683–2692.

[14] Wong, J. K. C. (2020). *Macau Chief Executive says COVID-19 an "exam" for gaming concessionaires' CSR contribution*. Available at: https://www.asgam.com/index.php/2020/03/24/macau-chief-executive-says-covid-19-an-exam-for-gamingconcessionaires-csr-contribution/

[15] Ristova Maglovska, C., & Angelkova Petkova, T. (2020). *Casino tourism and casino hotels*. Goce Delcev University of Stip. ISBN 978-608-244-759-9.

quarantine program[16]. By the end of May, the Macau government had spent an additional US$8.6 million on quarantine hotels[17].

On March 17, Macau finally prevented all visitors outside non-resident workers and closed the borders to all other non-residents[18]. The IVS (Independent Visitors Scheme) was reinstated by the Chinese government in August, allowing for independent travel to Macau from any of China's provinces in exchange for passing the COVID-19 test. While international visitors are not allowed to enter the city until 2020, residents of Macau who are returning from abroad must undergo a 14-day quarantine[19].

When at the beginning of 2020 the Macau government started converting hotels into medical observation centers where visitors may quarantine for as long as was necessary, these hotels were either included on the "designated list" of accommodations or they might have been chosen voluntarily or by the government. The quantity of quarantine hotels varied in line with the anticipated demand in 2020. Around the end of 2020, visitors indicated a desire to have the option of choosing where to quarantine. Therefore, the previously known "designated list" of hotels for medical surveillance was divided into two new lists starting on December 20, starting as an "optional list"[20] and "designated list"[21]. The average number of people per room is assumed to be 1,27[22].

[16]   Macau News. (2020). *Macau's financial reserves gain 5.6% in 2019*. Available at: https://macaunews.mo/macaus-financial-reserves-gain-5-6-in-2019/
[17]   Lou, L. (2021). Casino capitalism in the era of COVID-19: examining Macau's pandemic response. *Social Transformations in Chinese Societies*, Vol. ahead-of-print No. ahead-of print.
[18]   Asia Gaming Brief. (2020a). *Macau closes borders after new infections*. Available at: https://agbrief.com/headline/macau-closes-borders-after-new-infections/
[19]   McCartney, G., Pinto, J., & Liu, M. (2021). City resilience and recovery from COVID-19: The case of Macao. *Cities, 112*(103130). 1-9.
[20]   The "optional list" is available for residents, relatives, and nonresidents. Inbound visitors staying at optional hotels can choose which establishments they would like to quarantine at, but must bear the costs of their stay. At optional hotels, the price for a full quarantine is defined by the establishment (Moura, 2020).
[21]   The hotels on the "designated list" for medical observation are only available for Macau residents, relatives, and non-resident workers. Inbound visitors staying at designated hotels still have no choice regarding the hotel they are staying at, but part of the costs incurred while quarantining are partially subsidized. Residents and relatives pay 400 MOP (US$49.5) per person per day to quarantine at designated hotels. (Moura, 2020).
[22]   Salgado, A. C., & Neves, D. L. (2021). *Macau's hospitality sector: planning a response to the pandemic*. Available at: https://run.unl.pt/bitstream/10362/139186/1/macaus-hospitality-sector---planning-a-response-to-a-pandemic.pdf

Macau's collaboration with the hotel industry as a part of crisis response can be shown as a positive impact or a "first line of defense" against potential carriers of COVID-19[17] during the pre-crisis and crisis waves. Still, in order to handle the crisis management properly, hotels will need to develop a response plan for future pandemic outbreaks such as COVID-19, as their frequency has been rapidly increasing. Just in the past century, there were five registered pandemics, but this century, up until 2021, only four have been registered: severe acute respiratory syndrome (SARS), swine flu, Middle East respiratory syndrome (MERS), and COVID-19. Although certain crises are unavoidable, Macau has learned from them and used what it has learned to prepare for possible future problems.

In their consulting project, Salgado and Neves (2021)[23] prepared and analyzed a crisis response scenario for the 5-star luxury StarWorld hotel. The analysis put StarWorld hotel in two annual scenarios as a hotel on the "designated quarantine list" (see Equation 1) and the "optional quarantine list" (see Equation 2). The results in both scenarios showed disappointing data, not necessarily due to the implications of the scenarios on its accommodation segment, but instead due to the impact of the scenarios' conditions on casino revenues. The StarWorld hotel is heavily dependent on its gambling segment, whose business model focuses more on its integrated casino than on the hotel's accommodation. Therefore, the hotel's best chance is to follow the standard scenario (see Equation 3) and continue operating as usual, as this scenario does not undermine casino revenues further.

Equation 1. Designated crisis response scenario for StarWorld hotel

$$26.456 \ quarantied \ residents \ \times 14 \ days \ = 91.206 \ nights \ \div 1.2 \ people \ per \ room$$
$$= 84.125 \ rooms \ sold \ \times MOP \ 400 \ = 55.1 \ milliom \ room \ revenue$$

Equation 2. Optional crisis response scenario for StarWorld hotel

$$21.431 \ quarantied \ residents \ \times 14 \ days = 52977 \ nights \ \div 1.2 \ people \ per \ room$$
$$= 54.065 \ rooms \ sold \ \times \approx MOP \ 784 \ = 51.3 \ million \ room \ revenue$$

Equation 3. Standard crisis response scenario for StarWorld hotel

$$51.000 \ rooms \ sold \ \times MOP \ 1509 \ ADR = 77.1 \ million \ room \ revenue$$

Source: Galaxy Entertainment Group Annual 2020 Report

Source: Galaxy Entertainment Group Annual 2020 Report

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[23] Salgado, A. C., & Neves, D. L. (2021). *Macau's hospitality sector: planning a response to the pandemic*. Available at: https://run.unl.pt/bitstream/10362/139186/1/macaus-hospitality-sector---planning-a-response-to-a-pandemic.pdf

This situation imposes another challenge for Macau hotels when it comes to crisis responses, and that is that the hotels should invest in upgrading their offer beyond the casinos or ensure that the casinos are operating properly by employing strategies during crises. The truth is that Macau's hotel industry is closely associated with tourism and gaming, making it highly dependent on their success. Contrarily, the best course of action for StarWorld hotel and every other casino hotel is to concentrate on how they can set themselves apart from the quarantine lists. The primary strategy to accomplish this is to raise awareness that casino hotels are secure locations, while maintaining the hotel's value proposition of superior gaming services.

Considering the successes in managing the crisis response in the hotel industry, measures have shown an increase of 21.5% occupancy in all types of hotel establishments in 2021, resulting in a total of 50.1%. Among the most visited hotels are again the 3-star hotels, which recorded an increase of 65.7%[24].

Graph 1. Occupancy rates of hotel establishments
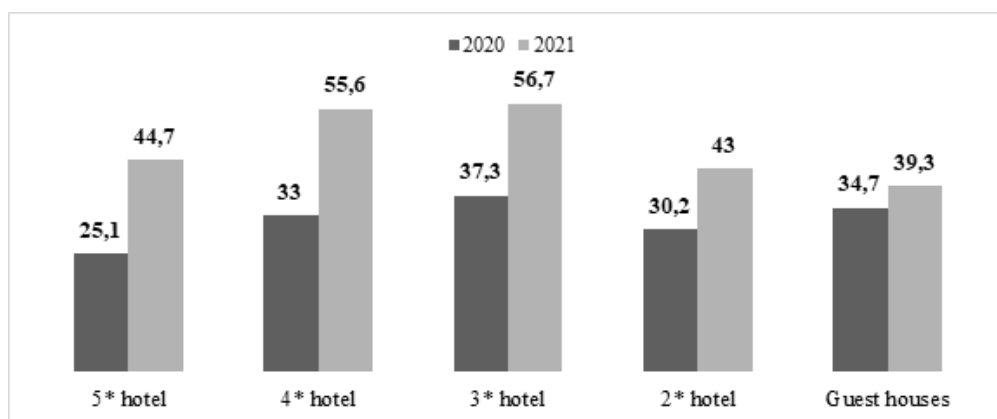
Source: Macau Government Tourism Office (2021)

According to the Macau Government Tourism Office, as of December 2021, there were 136 hotel establishments, providing 44,224 rooms, while in 2022 there were 140 hotel establishments, providing 45,251 rooms, an increase of 2.4% (Macau Government Tourism Office, 2021; 2022b). Still, the

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[24] Macau Government Tourism Office (2021). *Monthly Tourism Highlights*. Available at: https://dataplus.macaotourism.gov.mo/Publication/document/ENG/Book/VAHightlights/ 2021/tourism%20highlights_Dec_%202021_E.pdf

average room rate recorded a decline from MOP 920.4 (US$114) in 2020 to MOP 834.5 (US$103.3) in 2021[25].

Aside from the statistics, it must be considered that Macau hotels have also taken prompt actions towards fighting the COVID-19 battle. With around 30,000 employees and 13,000 hotel rooms, Sands China Ltd. initiated several corporate health and sanitization initiatives and ran a marketing campaign using those photos as part of the property recovery. More than 50 different internal staff training sessions on health, safety, and virus protection were held by Galaxy Entertainment Group. Wynn Macau and MGM Macau also contributed a range of COVID-19 preventive items, including protective clothing, face masks, and liquid bleach, to help local charities and social care groups[26].

Macau's crisis management measures still impose some restrictions, even in 2022, where all international visitors must undergo a 10-day quarantine at a designated location upon arrival and undergo self-health management for 7 more days. Most arrivals must pay quarantine fees, if applicable. Residents from Mainland China, Hong Kong, and Taiwan may enter Macau if they have not been to other locations in the previous 21 days[27]. And while the COVID-19 pandemic is still spreading and cases are increasing as a result of newly mutated varieties, the sense of urgency affects all the Macau government's decisions and actions, including the economic rescue and recovery.

2. ECONOMIC RESCUE AND RECOVERY

Macau is a casino-based economy, thus being the largest casino economy globally[28]. Macau's economic structure is very simple. Gaming taxes account for most of the government's revenue. Tourism, hotels, retail, and other industries are mostly derivatives of the gambling industry[29]. Casino taxes

[25] Macau Government Tourism Office (2022a). *Global Indicators*. Available at: https://data-plus.macaotourism.gov.mo/document/CHT/Report/GlobalIndicators/2021/1.%20Global%20Indicators%20%202021%20Dec.pdf

[26] Liu, M. T., Wang, S., McCartney, G. & Wong, I. A. (2021). Taking a break is for accomplishing a longer journey: hospitality industry in Macao under the COVID-19 pandemic. *International Journal of Contemporary Hospitality Management. 33*(4), 1249-1275

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[28] McCartney G. (2019). Securing Chinese mass market visitation to Cotai's Integrated Resorts (IRs). Determinants of gaming and non-gaming attributes that influence IR selection. *Tourism and Hospitality Research, 20*(3). 317–330.

[29] Yanfeng, B., & Yongxi, L. (2020). Macao COVID-19 epidemic response mechanism and

contributed US$12.3 billion (85%) of Macau's total tax revenue of US$14.4 billion in 2019. The country now has total fiscal reserves of about MOP 580 billion (US$72 billion)[30] and one of the highest GDPs per capita in the world at US$79,975[31]. The International Monetary Fund (IMF) acknowledged that Macau's huge reserves offered a significant buffer against shocks to the economy but cautioned that because most visitors were coming from Mainland China, Macau's economy remained vulnerable to changes in policy and economic conditions there[32]. In conclusion, the decrease in arrivals and total visitor spending move linearly along with the decrease in the Macanese Gross Domestic Product (GDP). According to the Statistics and Census Service (2022)[33], Macau's gross domestic product dropped 54.1% from MOP 445,530 million (US$55.4 million) to MOP 204,410 million (US$25.4 million). In 2021, the GDP was MOP 239,406 million (US$29.7 million), which is an increase of 17.1%.

For Macau, the biggest sector of the gaming industry is "Games of Fortune". Total gross revenue from "Games of Fortune" was MOP 60,441 million (US$7.5 million) in 2020, while in 2019 it was MOP 292,455 million (US$36.3 million)[34], it declined significantly by approximately 79% over the last years. In 2020, a total of 23.1% of Macau's employed population was working in the entertainment, cultural, gaming, and other service sectors, with gaming and related activities accounting for 20.5% of that total. The industry that includes hotels, restaurants, and other related businesses employed 13.8% of all workers, coming in second only to gambling[35].

Since the outbreak, it is fair to say that Macau's economic activities are far from having returned to "normal" as they were before COVID-19, but thanks to the tens of billions of unused casino taxes sitting in its government

financial implications of emergency response. *Sub National Fiscal Research, 4*, 26-35.

[30] Asia Gaming Brief. (2020b). *Macau financial reserves reached over US$72 billion in 2019*. Available at: https://agbrief.com/headline/macau-financial-reserves-reached-over-us72-billion-in-2019/

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[33] Macau Statistics and Census Service (2022). *Gross Domestic Product (GDP) and per-capita GDP*. Available at: https://www.dsec.gov.mo/ts/#!/step2/PredefinedReport/en-US/32

[34] Gaming Inspection and Coordination Bureau Macau (2021). *Gaming sector*. Available at: https://www.dicj.gov.mo/web/en/frontpage/index.html

[35] Macau Statistics and Census Service (2021). *Labor force*. Available at: https://www.dsec.gov.mo/en-US/Statistic?id=3

coffers, Macau's government was able to lessen the economic shock. Even though the gaming revenues have gone down slightly in recent years, the figures are still about four times that of Las Vegas, accounting for more than 80% of government revenues in Macau[36]. This is because licensed casino operators in Macau are required to "pay 35 percent casino tax on gross gaming revenues and not less than 2 percent to a public foundation for the promotion of cultural, social, economic, educational, scientific, academic, and charity projects"[37]. Subsequently, local service sectors such as hotels profit from this as well.

As part of the recovery phase, the Macau government took several economic measures to stimulate the hotel industry. Highlights of these measures included the following[38]:

- Exemption of rent charges on properties owned by public authorities from February 1 to April 30, 2020 (e.g., for hotels and establishments serving food and beverage);
- Tax-related measures include: the exemption of the circulation tax paid on commercial vehicles, such as buses, taxis, goods-transportation vehicles, tractors, school vehicles, instruction vehicles, cross-border hire vehicles, and vehicles registered by hotels or the refund of the amount already paid;
- Casinos, hotels with fewer than three stars, and government entities are included in the subsidy of utilities;
- From May to December 2021, the government reduced an estimated MOP440 million (US$55.0 million) in tourist tax, which is generally imposed at 5% on services provided by hotels;
- Additionally, the local government spent up to MOP120 million, or roughly US$15 million, between April and December 2021 to pay for locals to stay in one of the city's hotels for a single night. Locals who stayed at a hotel during that time were credited MOP200 (US$25) by the government;
- The Macau Government provided US$625 per month for three months for eligible employees and self-employed professionals, including hotel employees. In the first half of 2020, Macau's unemployment rate only increased to 3.5%.

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[36]   Lou, L. (2021). Casino capitalism in the era of COVID-19: examining Macau's pandemic response. *Social Transformations in Chinese Societies*, Vol. ahead-of-print No. ahead-of print.
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As such, the fight is far from over, but recovery and sustained growth post-COVID-19 in Macau are possible. Yet the question to be asked is: has Macau been overly reliant on gambling revenues, and has it allowed, for that matter, the COVID-19 pandemic to have devastating results for the other industries and sectors? If not for the gaming tax revenues, the main government and industry revenue streams suffered dramatically during the pandemic, which devastated the hotel industry even more. Being already dependent on casino establishments, the hotel industry has proven to be very vulnerable.

Conclusion

Highlighting Macau as a case study will amplify the collaborative efforts between the government and the hotel industry that have proven to be particularly interesting cases worth studying from a crisis management perspective. Through collaboration, both sides showed their ability to be resilient and to implement wide-ranging economic stimulus incentives as well as prompt actions not only to control the pandemic but also to recover after COVID-19. The hotel industry deployed distinctive, supportive efforts and conformity with governmental power and policies. This can be described as a rational approach because, simply put, there are no alternative revenues that could be made in a lockdown situation. Positively, this resulted in having hotels act as the "first line of defense" against possible COVID-19 carriers, while tax payments from the gambling industry helped Macau's struggling economy.

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STATE OF E-COMMERCE DURING THE COVID-19 PANDEMIC IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The COVID-19 pandemic set new rules for engagement, basically limiting the physical contact of individuals. As the world was entering lockdown, this showed as an opportunity for digital activities, such as e-commerce, to grow exponentially as the sole method for purchasing products and services in this period. The paper focuses on three different types of e-commerce activities, business-to-business, business-to-commerce and m-commerce, analyzing their state before and during the pandemic years. National economies of developed and countries in transition are also analyzed, to show the growth of e-commerce in various settings.

Special focus is placed on the country of North Macedonia, as an economy in transition, and the levels of acceptance of e-commerce from 2017 onwards. Data from the research shows that the steady rise of e-commerce in the country is accelerated in pandemic years, however total level of GMV is still below developed countries. Companies that haven't adapted to digital activities can be left behind, as the whole world is shifting based on the pandemic response. The research shows several relevant conclusions, such as the expected rise of B2B e-commerce as the primary method of purchasing on a company level, as well as the enormous impact of m-commerce sales that is expected after pandemic years.

Key words: *E-commerce, m-commerce, North Macedonia, COVID-19*
JEL classification: L81

Introduction

E-commerce appears as a consequence of the development of information and communication technologies, which has been elevated in its use especially during the COVID-19 pandemic. Buying products online can be the fastest and often the cheapest way, while the contactless features were important to establish it as a new default process of buying and selling items during the emergence of the pandemic in 2020. According to Turbanet al., E-commerce is the exchange of goods and services between independent organizations and/or people through the use of powerful information-communication systems and globally standardized network infrastructure. For this purpose, supply chain partners must connect their business processes and information-communication systems. These systems have to work together temporarily and seamlessly, they have to share, exchange and process data throughout the entire business process. Data security and privacy, as well as compliance with laws and procedures, should of course be guaranteed throughout the process. Kalakota and Whintons define e-commerce from four different perspectives:

- **Communication perspective**: According to this perspective, e-commerce is the delivery of information, products/services or payments through telecommunication channels, computer networks or any other electronic means of communication.
- **Business Process Perspective**: This perspective states that electronic commerce is the application of technology for the purpose of automating business transactions and work flow.
- **Service perspective**: E-commerce is defined as a tool to satisfy the desires of companies, consumers and management to reduce costs, improve the quality of goods / services and increase the speed of delivery.
- **Internet perspective**: E-commerce is an opportunity to buy and sell products, services and information on the Internet.

The paper is focused on researching the growth of e-commerce in the Republic of North Macedonia, as well as comparing it with other relevant countries on an international level, following global trends.

1. METHODOLOGY OF RESEARCH

For the purposes of the research process, secondary sources of information are utilized - scientific papers, studies, books, academic journals, case

studies. They will serve to, through their elaboration or citation, give a historical overview, current conditions and future aspects in the development of e-commerce. Several types of research methods were used in the paper:

- Descriptive method, used to describe the basic terms related to the subject of research, through definition and explanation;

- Analytical method, analyze the existing researches;

- The logical method is used for proof when making the final conclusions and recommendations;

- Method of generalization, through which individual observations and observations should lead to general conclusions, which are based on reality.

The research techniques with which the data is processed during the research are the following:

- Collecting data from various sources, books, scientific literature, publications, collections, laws and regulations;

- Collecting materials resulting from specific research in the area;

2. GROWTH OF E-COMMERCE BY MODELS DURING THE COVID-19 PANDEMIC

### 2.1 B2B & B2C e-commerce models

The B2B model of e-commerce includes trade between companies over the Internet, information exchange and cooperation with business partners. This model connects all participants in the business process, manufacturers, suppliers, distributors and intermediaries, leading to the final consumer. Companies quickly saw the opportunity for large cost savings they could achieve through procurement and sales automation, specifically during the lockdown periods of the COVID-19 pandemic. In this model of e-commerce, the company makes an order for purchases from another company directly over the Internet, whereby the preparation of the documentation, the time for processing the order and the delivery of the goods are greatly reduced. B2B during the pandemic offered companies, especially small and medium-sized ones, an excellent opportunity to make contacts with new suppliers, manufacturers, find new business partners, access new markets and reduce costs.

In a highly competitive business environment, B2B e-commerce offers business efficiency and many cost-saving options. The advantages of B2B

solutions during the pandemic are evident in all areas of business operations. The Internet provides the most economical platform for B2B e-commerce, here there is an opportunity to connect companies without the need to apply an additional network. This e-commerce model contributes to lower procurement costs, reduced inventory, reduced sales and marketing costs. There is a shortening of the production cycle due to the more efficient communication of all participants in the production process. In the procurement process, higher employee productivity is achieved, it reduces the possibility of error and shortens the time of the entire process, which leads to a reduction in costs. Marketing and sales through the Internet get an inexpensive and efficient marketing and sales channel that offers the opportunity to expand these activities with minimal investment. The gross merchandise volume (GMV) of B2B e-commerce transactions in 2019 was 22.56 billion dollars, while in 2020 in expanded to over 31 billion dollars.

Compared to B2C, as a model is one of the most recognized and geared towards individual consumers. This model represents commerce over the Internet between a company and a consumer who buys for his personal needs . B2C markets have made a significant contribution to the commercial development of the Internet. The Internet provides access to a new space for commerce, a virtual space, that uses digital data to facilitate market exchange. In the last decade, the new e-market has become widely available for consumers, and for companies it has offered numerous opportunities and challenges.

As shown in graph 1, B2C e-commerce GMV is showing significant growth during the pandemic years, with a steady increase on a yearly level. B2C interaction enables better integration of consumers with products and services. Search tools and Internet communities contribute to reducing the consumer's costs for searching for products and prices. Modern consumers search intensively until they find and receive a suitable affordable offer, while the virtual space offered them a no-contact option in recent pandemic years.

Graph 1. E-commerce sales on a global level (2014 – 2025)

Source: https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/
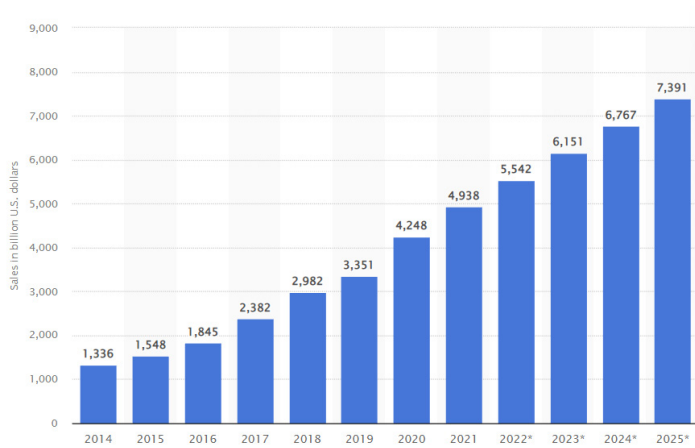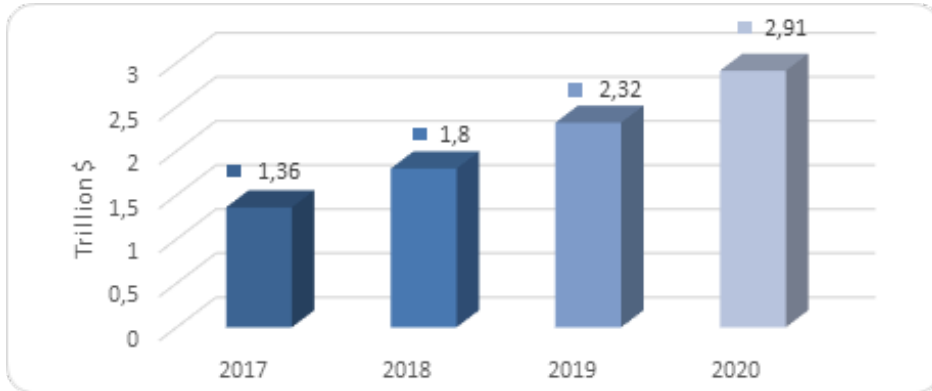
2.2 M-commerce

Mobile commerce refers to the conduct of e-commerce through wireless communication devices, smartphones and tablets. M-commerce is carried out through mobile devices and appropriate data transfer protocols. This way of doing business is on the rise in the world because the user is not bound to place and time, the service is available anywhere at any time. M-commerce involves purchasing via a mobile device, mobile marketing, mobile banking or using a digital wallet[1]. Mobile shopping in addition to mobile apps can also be done through optimized websites, even through social media platforms.

A prerequisite for the development of m-commerce is the progress and introduction of new technologies in mobile telecommunications, that is, the development of the Wi-Fi network, network services (3G, 4G, 5G), the global system for mobile communication (GSM), etc. Interest in m-commerce is increasing with the availability and mass of mobile technology as well as the possibility of cheap access to mobile internet. The perspective for the growing development of m-commerce comes from the opportunities to develop new business models and the integration of new technologies[2].

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[1]   Safieddine F., (2016), E-systems for Business and Commerce, chapter 7, CRC Publishing
[2]   Alotaibi, R.S. (2021) Understanding customer loyalty of M-commerce applications in Saudi Arabia. Int. Trans. J. Eng. Manag. Appl. Sci. Technol., 12, 1–12.

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Graph 2. Value of M-commerce (2017-2020)

Graph 2 indicates the global growth trend of mobile commerce. Some estimates say that the percentage of m-commerce in the total e-commerce will be up to 75% in the coming years. The reason for the growth so far, on which future estimates are based, is the rapid development of mobile technology and mobile devices, new innovative solutions, accessible mobile internet and the integration of mobile applications in all segments of everyday life. M-commerce will continue to develop and new opportunities and new challenges will appear.

3. IMPORTANCE OF E-COMMERCE DURING THE GLOBAL PANDEMIC COVID-19

The COVID-19 pandemic has accelerated digital transformations. Digital solutions have become necessary and increasingly necessary for the continuation of some economic and social activities from a distance. These solutions are of crucial importance for online work, online education, telemedicine, as well as for maintaining social connections in times of physical distancing. We are also witnessing the growth of e-commerce not only in developed countries but also in developing countries, which will have long-term implications. However, unless a suitable solution is found, the existing digital divide is likely to result in even greater inequality. In that context, it is necessary to make an assessment of the impact of the pandemic in different regions of the world. Greater efforts are needed from all interested parties - the government, compa-

nies, consumers and international partners in order for e-commerce to play a positive and major role in the national and international recovery.

Despite the global recession show in table 1, the pandemic led to a further acceleration of digital transformation. The pandemic has reinforced the importance of removing existing barriers in e-commerce. Countries that take advantage of the potential of e-commerce will be able to better and to a greater extent take advantage of the opportunities offered by the digital economy.

Table 1. Global economic influence of COVID-19

Global GDP	↓ -4,3%
Global product trade	↓ -9%
Global services trade	↓ -15%

Source: UNCTAD, https://unctad.org/system/files/non-official-document/p01_tdb_ede_wg2021_Fredriksson.pdf

The accelerated growth trend of e-commerce, shown in table 2, is very likely to be maintained during the recovery from the consequences, as the "new normal" settles in the following years.

Table 2. Global trends for e-commerce during COVID-19

	2018	2019	2020
Percentage of e-commerce in B2C	14,5%	15,8,%	21,3%

Source: UNCTAD, https://unctad.org/system/files/non-official-document/p01_tdb_ede_wg2021_Fredriksson.pdf

The digital economy and e-commerce are playing an ever-increasing role in efforts to achieve the Sustainable Development Goals, bringing new opportunities and new challenges. Countries that harness the potential of e-commerce will be better positioned to reap the benefits of global markets, their products and services in this digital economy, while those that do not risk being left behind. The COVID-19 pandemic dominated global economic development during 2020 and 2021. Movement restrictions and other public health measures have reduced economic activity in many sectors and countries, affecting production, distribution and consumption, especially in countries that were less prepared to deal with the crisis. The pandemic caused a sharp slowdown in economic activity for which economies were largely unpre-

pared. A consequence of this situation was the penetration of e-commerce, due to the need to move many activities online. It seems likely that the accelerated e-commerce growth trend seen during the pandemic will continue during the recovery.

In the fight against COVID-19, economic activities that require close physical contact were strictly limited. In this context, e-commerce appears as the main pillar of the economy in the crisis. E-commerce can help further reduce the risk of new infections by minimizing face-to-face interactions. It can help preserve jobs during the crisis and can help increase the acceptance of physical distancing measures among the population. A crisis can have a lasting impact on companies, consumer preferences and buying habits. Consumers are more willing than ever to embrace online shopping and experiment with new services. Governments should enable conditions and take actions to ensure that e-commerce will use its full potential during this public health and economic crisis.

Table 3: Retail e-commerce, 2018-2020

Country	Retail e-commerce ($ billion)			Total sales ($ billion)			Percentage of retail e-commerce (% retail)		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Australia	13.5	14.4	22.9	239	229	242	5.6	6.3	9.4
Canada	13.9	16.5	28.1	467	462	452	3.0	3.6	6.2
China	1,060.4	1,233.6	1,414.3	5,755	5,957	5,681	18.4	20.7	24.9
South Korea	76.8	84.3	104.4	423	406	403	18.2	20.8	25.9
United Kingdom	84.0	89.0	130.6	565	564	560	14.9	15.8	23.3
USA	519.6	598.0	791.7	5,269	5,452	5,638	9.9	11.0	14.0
Total	1,770	2,038	2,495	12,752	13,102	13,003	14%	16%	19%

Source: UNCTAD, https://unctad.org/, based on data from national institutions of the analyzed countries

Table 3 shows us the dramatic rise of e-commerce in certain countries in the context of the restriction of movement caused by COVID-19 and an increased percentage of participation in the total retail sales. As shown in Table 3, South Korea recorded the highest share of e-commerce at 25.9% in 2020, up from 20.8% the previous year. This data shows the growing importance of e-commerce. It also indicates the need for countries, especially developing and transition countries, to take such information into account when rebuilding their economies.

Table 4. Top 10 economies in transition according to UNCTAD index for B2C e-commerce, 2020

Rank	Economies in transition	Index value	World rank
1	Belorussia	78,8	35
2	Russia	76,6	41
3	Serbia	75,3	43
4	Georgia	73,6	47
5	Ukraine	71,2	51
6	**North Macedonia**	**71.1**	**52**
7	Moldavia	70,8	53
8	Kazakhstan	68,2	60
9	Azerbaijan	60,0	65
10	Bosnia and Herzegovina	58,1	70

Source: UNCTAD, https://unctad.org/, based on data from national institutions of the analyzed countries

According to the UNCTAD B2C E-Commerce Index, North Macedonia is in 6th place among economies in transition and 52nd in the world ranking. The index is formed based on the percentage of internet users, percentage of individuals with an account, the security of internet services and trust in postal services.

Table 5: Best B2C companies in the world according to GMV (Gross Merchandising Volume)

GMV rank		Company	State	Industry	GMV ($ billions)			GMV (%)	
2020	2019				2018	2019	2020	2018-19	2019-20
1	1	Alibaba	China	E-commerce	866	954	1,145	10.2	20.1
2	2	Amazon	USA	E-commerce	344	417	575	21.0	38.0
3	3	JD.com	China	E-commerce	253	302	379	19.1	25.4
4	4	Pinduoduo	China	E-commerce	71	146	242	104.4	65.9
5	9	Shopify	Canada	Internet mediums and services	41	61	120	48.7	95.6
6	7	eBay	USA	E-commerce	90	86	100	-4.8	17.0
7	10	Meituan	China	E-commerce	43	57	71	33.0	24.6
8	12	Walmart	USA	Retail	25	37	64	47.0	72.4
9	8	Uber	USA	Internet mediums and services	50	65	58	30.5	-10.9
10	13	Rakuten	Japan	E-commerce	30	34	42	13.6	24.2
11	5	Expedia	USA	Internet mediums and services	100	108	37	8.2	-65.9

GMV rank		Compa-ny	State	Industry	GMV ($ billions)			GMV (%)	
2020	**2019**				**2018**	**2019**	**2020**	**2018-19**	**2019-20**
12	6	Booking Holdings	USA	Internet mediums and services	93	96	35	4.0	-63.3
13	11	Airbnb	USA	Internet mediums and services	29	38	24	29.3	-37.1
		Total			**2,035**	**2,399**	**2,890**	**17.9**	**20.5**

Source*: UNCTAD,* https://unctad.org

According to Table 5, leading e-commerce companies have made huge fortunes during the COVID-19 pandemic. It is obvious and expected that companies offering transportation and travel services will have a dramatic drop in rank and gross product value, while companies with digital facing activities (e-commerce, internet mediums etc.) will be at the forefront. Of the leading 13 companies in the world, 7 are from the USA and 4 from China.

4. STATE OF E-COMMERCE DURING THE COVID-19 PANDEMIC IN THE REPUBLIC OF NORTH MACEDONIA

Both on a global scale and in the Republic of North Macedonia e-commerce is seeing significant growth in the number and value of online transactions. Most online purchases were made with domestic payment cards to domestic e-stores. According to the statistics of the National Bank of N. Macedonia, the growth of online shopping towards domestic e-stores in 2020 is 137% higher compared to 2019. During the 2020 pandemic a total of 178 million euros were spent on Macedonian e-stores, of which 6% or 11 million euros were made with foreign cards. In 2019, transactions with Macedonian e-stores worth 75 million euros were realized.

According to the National Bank of N. Macedonia, the value of online payments with domestic cards to foreign e-stores recorded a drop of 54% or 62 million euros in total in 2020. compared to 135 million euros in 2019. This

drop in passion for e-tailers is expected and is due to the drop in travel arrangements, hotel bookings, airline tickets, etc. due to movement restrictions and foreign travel bans.

During 2020, online transactions worth 10.8 million euros were made from abroad to domestic e-stores, compared to 6.8 million euros in 2019, which is an increase of 58.8%. The total value of e-commerce in N. Macedonia during the 2020 pandemic. amounts to 240 million euros or a growth of 14.2% compared to 2019 when the value is 210 million euros, Graph 3. Although the growth is not so large and significant, it is more important that the structure of e-commerce is changing and more and more Macedonian consumers buy from domestic e-tailers. In 2019, only 35.7% of the total value belonged to domestic e-traders, while in 2020, 74% of the value of e-trade was realized to domestic e-traders.

Graph 3. Value and structure of online shopping in North Macedonia in 2019 and 2020 (million €)
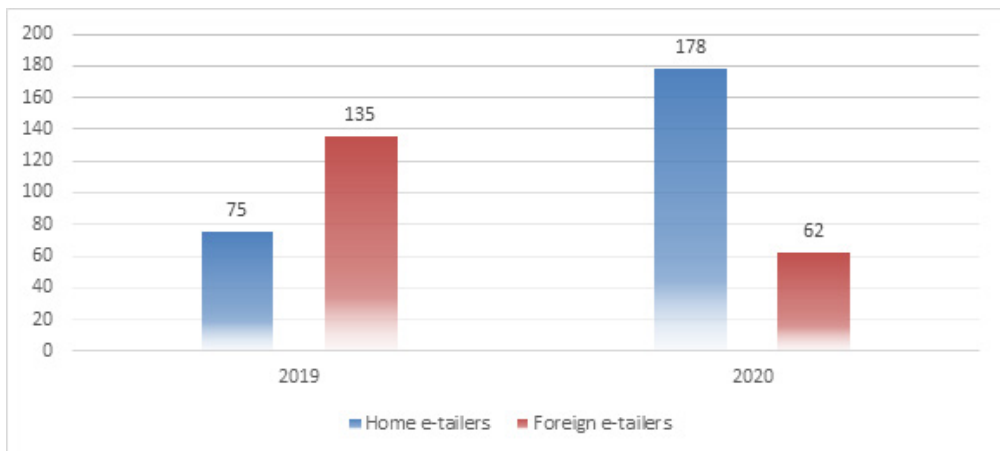
Source: National Bank of N. Macedonia, https://www.nbrm.mk

Graph 4 shows the growth and value of e-commerce to domestic e-traders by quarter, where growth can be observed for 2020 starting from the second quarter, that is, with the start of the COVID-19 pandemic.

Graph 4. Value of online transactions towards home e-tailers 2019 – 2020 (million €)

Source: National Bank of N. Macedonia, https://www.nbrm.mk/ns-newsarticle-soopstenie-862020-en.nspx
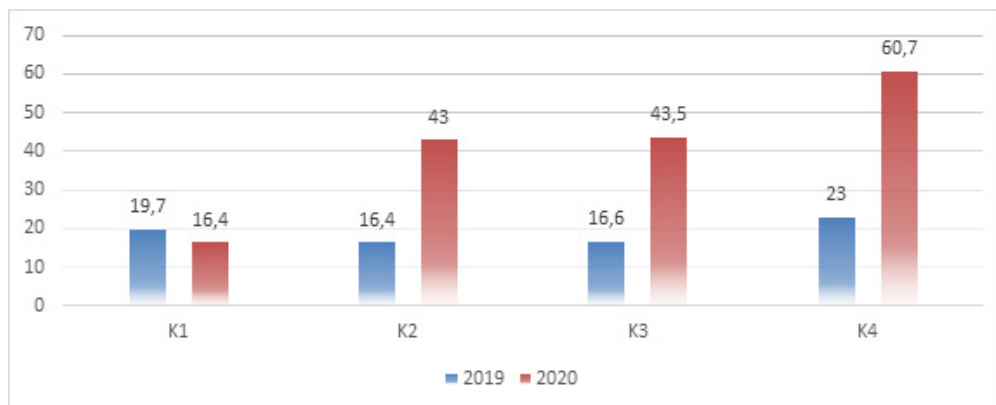
According to data from the State Statistics Office[3], in 2020 40.1% of individuals with internet access have shopped online in the last 12 months. The percentage in 2019 is 36%, while in 2017 only 20% of Internet users shopped online. The number of new e-stores is also growing. In 2020 439 new e-stores were opened, which is a growth of 43% compared to the previous year. The total number of online sales outlets according to the State Statistics Office at the end of 2020. is 1459. These data indicate increased growth and interest in e-commerce in N. Macedonia. It is also evident the trust that citizens gain in online shopping among domestic e-traders, which is encouraging for the future growth and development of e-commerce.

Conclusion

The paper researches a relevant topic for the development of e-commerce in countries in transition, with special focus of North Macedonia. As the data shows, e-commerce is still at generally lower levels than developed countries, however is on the rise accelerated by the COVID-19 pandemic. The rise of this trend will depend on the digital readiness and preparedness of the countries as well as the enabling conditions for e-commerce. In fact, the companies that best handled the crisis were highly prepared and supported by appropri-

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[3]   https://www.stat.gov.mk

ate and sound e-commerce strategies. Economies with a high level of internet coverage, with consistent e-commerce strategies and economies that prioritize e-commerce development through coordinated activities stand to benefit the most during the COVID-19 crisis. In terms of companies, those with a long-standing presence on the Internet, traditional businesses with sufficient funds to invest in upgrading their business to e-commerce, communication networks and digital platforms, and companies that overcome the problems of transport logistics, have coped best with the crisis.

Relevant conclusions for the public and private sector:

- **Faster digitalization for SMEs** – more flexible in accepting digitalization of work process, as smaller teams can virtualize their collaboration much easier than corporations

- **New payment methods are critical** – economies with broader types of payment methods (such as PayPal, Venmo etc.) generally achieve greater e-commerce sales. This is also due to the elimination of the "gray" economy with other payment options (cash on hand)

- **B2B transactions may become primarily digital** – trends in recent years (until the pandemic) show a steady rise of B2B e-commerce, with faster adoption during COVID-19. As these transactions are also repeating ones, digitalization saves time and costs, accelerating its acceptance

- **B2C e-commerce transactions in rising economies still struggle** – compared to developed countries, consistently lower numbers in retail e-commerce transactions are registered in countries in transition. The awareness of e-commerce benefits rose during the pandemic years, however still at a slower pace than developed countries. To increase the acceptance of e-commerce, governments can ensure that the proper infrastructure is in place, along with security and privacy laws and measures, while simultaneously promoting the use and best practices of e-commerce for individual buyers.

- **M-commerce is the future** – the growth in B2B and B2C e-commerce in pandemic years is evident, however m-commerce shows much significant growth during those years. Based on the statistics presented in the paper, m-commerce can become one of the standards for online transactions in the following years, with up to 75% participation in digital transactions.

The research can be expanded by including data from e-commerce sales by specific industry before and after the pandemic years. Additionally, the research can be updated with data in researching the "new normal", as the pandemic onset quiets down in the following years. As the trend was viewed solely through the processing of secondary data, primary research can be included to follow-up the transition from retail to e-commerce activities by companies, as well as explore benefits and drawbacks. Finally, since the paper researched e-commerce, efforts can be made to explore the broader e-business implications on various business processes in the organizations.

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6   https://unctad.org/system/files/non-officialdocument/p01_tdb_ede_wg2021_Fredriksson.pdf

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