THE IMPACT OF COVID 19 ON THE APPLICATION OF E-BANKING: THE CASE OF MACEDONIAN COMMERCIAL BANKS

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ABSTRACT

The crisis, (political, economic, military, health), but also every positive change or novelty in the society, such as the Industrial Revolution, the Information Revolution transform the national economies. These transformations cause a new way of functioning of institutions, including banks, but also affect the life and functioning of people as consumers. The global health crisis caused by Covid-19 in 2020 shook the whole world. The information technology (IT), but even more the Covid-19, have imposed the need for banks to conduct their activities almost completely online. Historically, retail banks have relied on their branches to provide customer service. Consumers realized all necessary banking transactions with a physical presence in the bank branches. The Internet, and especially Covid-19, has altered the way banks operate, but also the consumer behavior. With the migration to online banking, banks must invest in their IT departments, provide secure online platforms, initiate and follow the changes in legislation, to provide reliable and quality services to consumers. Hence, this paper aims to answer the following research questions: What was the situation with the electronic banking in the Macedonian commercial banks before Covid-19? What is the impact of Covid-19 on the electronic conduct of transactions of banks? What are the opportunities and threats to the banking sector from the digitalization process? How the legislation affects the e- bank's operations? To answer these questions, a survey with banks will be conducted, using a questionnaire. The extensive questionnaire will be submitted to all commercial banks in Macedonia. It contains open and closed questions (Likert scale, semantic differential, multiple-choice questions).
After processing the research data, the results showed that Macedonian banks are following the world trends and that they are trying to fully implement the digitalization of their services.

KEYWORDS: Covid-19, Information Revolution, Digitalization, Online Banking, E-Banking, E-Legislation, Bank's Branches

JEL CLASSIFICATION CODES: G21, E59, 033

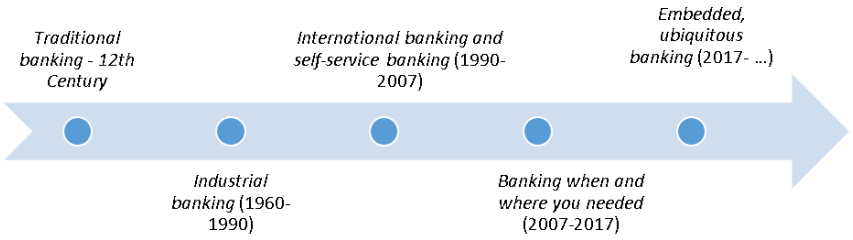
1. INTRODUCTION

Traditional banking started in the 12th century with the Medici family, and it was built around the bank branch as a primary unit for providing banking services. This type of banking is still characteristic of particular banks in emerging countries. Important to note is that for over five centuries now some banks still operate on a basis of physical distribution. Having in mind that banking has evolved into Embedded, ubiquitous banking (King, 2018), banks in emerging and transition economies, such as the Republic of North Macedonia, should deeply reconsider their strategic pathways for the future. According to King (2018), the emergence of major non-bank competitors (fintech companies), totally reshape and redefine the banking sector and the financial system. Incumbent "brick and mortar" banks should

make breakthrough changes in their organizational structure, human resources, distribution channels, etc., in order to maintain competitiveness and survive the radical changes coming from the digital transformation and the new digital economy. As Bill Gates stated in his speech in 1994, "Banking is necessary, banks are not" and that "Banks are dinosaurs, they can be bypassed". The main idea behind these sentences was that advances in technology impose faster development of the banking industry and many advantages not only for banks, but for customers as well.

The trends of industrialization, deregulation, liberalization, and globalization reshaped banking and banks' business models, but the level of impact of these trends was enhanced with the emergence of information technology and arrival of fintech companies. The outcome of these trends was the full digitalization of the banking business and its evolution towards Embedded, ubiquitous banking (2017- …). Covid 19, just additionally pressured banks' to embrace the digital transformation, which requires banks, not only to add additional layer in their delivery channels, such as implementing e-banking through personal computers and mobile phones, but to fully focus on customer lifestyle. In Figure 1 a timeline is shown concerning the evolution of banking, based on which the stage of evolution of Macedonian banking can be determined.

Figure 1 Evolution of Banking



Source: Adapted and edited from King, B. (2018), *Banking anywhere, never at a bank*, Marshall Cavendish Business, pg.277

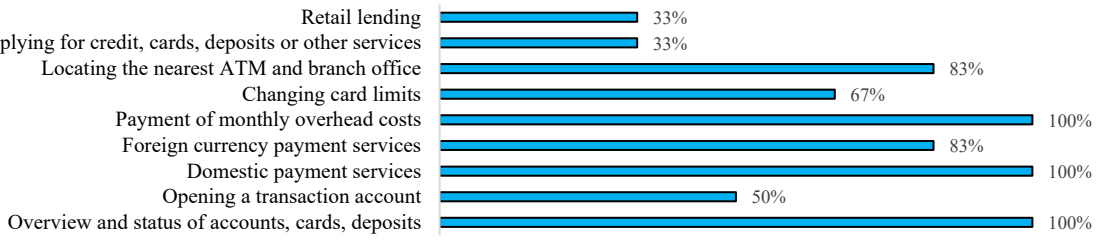
The traditional banking started in the 12th century with the Medici family, and it was built around the bank branch as a primary unit for providing banking services. During the next period of Industrial banking (1960-1990), banking had characteristics that are still present today in the banking systems of the most developed countries. At that time, two models of banking systems arose, the Anglo-Saxon and the continental European model, where in the Anglo-Saxon model there was a strict distinction between investment and commercial banking, and continental European model was characterized with the existence of universal banks which could compete with the dynamic development of nonbanking financial institutions. International banking and self-service banking (1990-2007) represent a period where many novelties in banking were introduced, such as: international standards for a bank operating, deregulation, liberalization, globalization and implementation of IT in banking. As a consequence, in this period of time self-service banking emerged in relation to the wide adoption of ATMs', POS terminals and the commercial Internet. From then on banks started focusing on types of products and services offered to customers instead of building adequate organizational structures. This was an attempt of banks, in developed countries, to provide customers' access outside of bank working hours. Banking when and where you needed (2007-2017), presents a period in which banking started to be redefined by the emergence of the smartphone in 2007 and was characterized with a shift to mobile payments, P2P and challenger banks. Finally, embedded, ubiquitous banking (2017- …), presents the period of innovations in financial services with greater financial inclusion and redefinition of banking business models.

Banks in the Republic of North Macedonia follow the trend of digitalization in order to maintain competitive and be a market leader, but when monitoring and analyzing Macedonian banking it can be stated that it is dwelled between the third and the fourth phase. According to the recent findings from the research conducted by Dimitrieska, Stanoevska and Danevska (2022) banks in the Republic of North Macedonia follow the new trends in digital banking. All of the surveyed Macedonian banks have already implemented E-banking, but the average level of their digitalization is at the level 2a[1], meaning that their web page does not only have informational character, but also

[1] Levels of digitalization of banks were measured through accessing the level of development of their web page and the possibility for interaction, such as:
Level 1 Information character (balance sheet review, reports) supplemented with interactive activities (credit calculator, credit card application, etc.)
Level 2 - Level 1 supplemented with full transaction - electronic payments and other electronic financial (overhead) transactionsin domestic payment operations.
Level 2a - Level 1 supplemented by full transaction - electronic payments and other electronic financial (overhead) transactions in domestic and foreign currency payment operations.
Level 3 - Application use of electronic products and services (electronic lending, insurance policies, account opening, deposit, etc.)

allows customers to conduct electronic payments and other electronic financial (overhead) transactions in domestic and foreign currency payment systems (63%); only one bank operates at level 3, which refers to the possibility only to fill out application for using electronic products and services (electronic lending, insurance policies, account opening, deposit, etc.); only one bank has its web page enriched with applied usage of electronic products and services (e-lending, insurance policies, account opening, deposit, etc.); and only one bank has its web page operational on a level of information enriched with e-payments and other e-financial (overhead) transactions, but only in domestic payment operations. According to the same research, none of the banks offers corporate lending, investment services (asset management, trading-securities), financial support (financial / investment advice) and Bancassurence in the form of E-banking services. As shown in Figure 2, only 33% of banks offer retail lending and applying for credit/debit cards, 50% offer opening a transaction account, 67% offer changing debit/credit card limits and 83% offer location of the nearest ATM and branch office and foreign currency payments.

Figure 2 Electronic banking services



Source: Danevska, B., A., Stanoevska, P. E., Dimitrieska, S.,(2022) The Empirical Evidence on E-Banking – The Case of the Republic of North Macedonia, *Global Journal of Management and Business Research: B Economics and Commerce, Volume 22 Issue 2 Version 1.0*

These findings, point out that not all of the banking services offered via bank branches are incorporated in e-banking, meaning that the Macedonian banks are not fully digitalized. Digital banks, by definition, require offering fully online banking products and services, such as transaction accounts; deposits; fund deposits, withdrawals, transfers as well as financing. Digital banks do not have a brick-and-mortar branch network, instead, they have one registered head office. However, here another issue arises related to the Macedonian legislation that is not yet adapted and harmonized with the current world tendencies in creating digital banks.

The purpose of this research paper is to determine the impact of Covid 19 on the process of bank digitalization, by examining the application of e-banking by Macedonian commercial banks. The aim is to determine banks' position in their digital transformation and to analyze whether Covid 19 had put additional pressure and imposed radical changes in their full embrace of digital technology. This is of great importance for the incumbent Macedonian banks, because 82% of Macedonian customers responded that E-banking plays a significant role in their daily lives, 16% responded that their usage of E-banking is neither insignificant nor significant and only 1% answered that their usage is insignificant (Dimitrieska, Stanoevska, Danevska, 2022). This finding is significant and should be translated into a warning sign for banks to start or increase their investments in E-banking today, more aggressively and without hesitations.

For achieving the purpose of this research paper, a detailed analysis of the situation in the banking sector before and after Covid-19 was conducted, concerning the electronic conduct of transactions of banks. Having in mind the emerging trends in banking and the impact of Covid 19, this research paper will attempt to answer the following research questions:

1. What was the situation with the implementation of electronic banking in the Macedonian commercial banks before Covid-19?
2. What is the impact of Covid-19 on the electronic conduct of transactions of banks?
3. What are the opportunities and threats to the banking sector from the digitalization process?
4. How the legislation affects the e- bank's operations?

Level 3a - Applied use, complete electronic products and services (electronic lending, insurance policies, account opening, deposit, etc.)
Level 4 - Level 3 supplemented with a strategic commitment to electronic offer of investment services and financial support

2. LITERATURE REVIEW

The Covid 19 forced and encouraged banks to focus on developing online solutions so that they could continue delivering their services without exposing their employees to increased risks of getting infected. Some of the banks commenced, whereas those which were more aware of the digital transformation in the digital economy upgraded the e-banking services as a top on their priority list. Electronic banking, defined as the usage of banking services through PCs and mobile phones, has offered the customers many benefits which in turn enabled its easy adoption. The literature offers a variety of definitions for e-banking, as shown in Table 1, and from them, it can be deducted that e-banking is regarded as an additional layer of distribution channels for banking services and products.

Table 1 Defining E-banking

Hyde (2015)	E-banking is an innovation when new information technologies merge into traditional banking services.
Southard and Siau, (2004); Witman and Poust, (2008)	E-banking service is basically a self-service by customers, so for banks, it requires less resources and lower transaction and production costs.
Shah, M., and Clarke, S. (2009)	E-banking can mean the provision of information about a bank and its services via a home page on the World Wide Web (WWW) or via Internet.
Keivani, Jouzbark and Khodadadi, Khalili Sourkouhi (2012)	✔ Electronic banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The forms of e-banking are personal computer (PC) banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. ✔ Electronic banking is providing banking products and services through electronic delivery channels.

The Covid 19 pandemic has unveiled the benefits of the usage of digital technology in banking. Conducting payments, taking loans, depositing, investment, and consulting services are only a limited number of services that banks provide through e-banking and, during Covid 19 customers were able to have access to all of these services despite banks' reduced bank branches' working hours and decreased front office workforce (due to following restricted measures). Nevertheless, Covid 19 had an impact on the overall usage of the Internet and E-banking. In Table 2 the number of internet users is demonstrated in the Western Balkan countries and it perfectly shows its sharp increase during the Covid 19 from 10 to 18 pp (when analyzing all the countries), when comparing the year 2019 to 2021.

Table 2 Share of individuals who use the Internet

Year	2017	2018	2019	2020	2021
Montenegro	59	60	62	73	80
North Macedonia	57	60	65	74	78
Albania	:	57	63	70	78
Serbia	46	49	63	64	76
Bosnia and Herzegovina	:	56	60	66	70
Kosovo	80	85	81	94	:

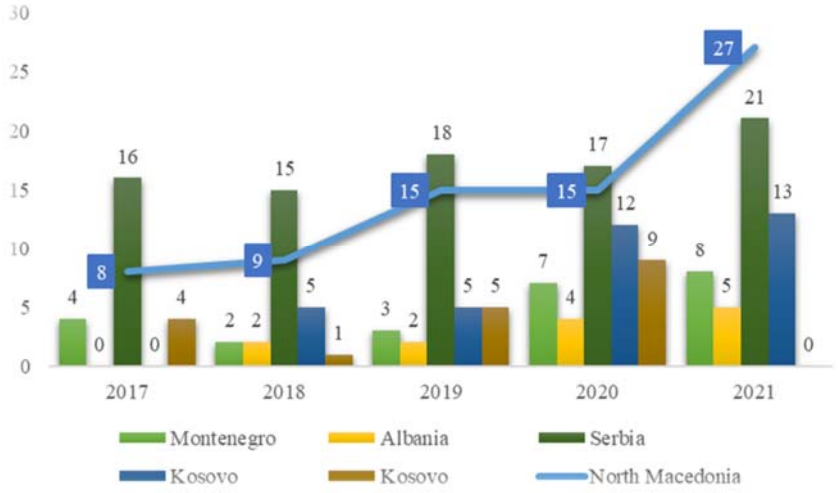
Source: Eurostat 30/03/2022

Additionally, when analyzing the data regarding the share of individuals who use e-banking in the Western Balkan countries (Figure 3), it can also be noted that there is a sharp increase in the usage of E-banking, particularly in Serbia and North Macedonia, from 12 to 13 p.p., when comparing the year 2019 to 2021.

From this data, and previous research conducted by the authors, customer behavior was deeply under the impact of Covid 19, when discussing embracing digital technology. Now, more than ever, business owners and individuals as banks' customers rely on this technology to meet their banking needs, because they have acknowledged the advantages that it offers. However, the question posed in this paper is, where did banks stand during Covid 19? To what extent

does Covid 19 have an impact on their implementation of digital technology and offering online solutions?

Figure 3 Individuals using E-banking (in %)



Source: Eurostat 30/03/2022

3. DATA AND RESEARCH METHODOLOGY

For achieving the purpose of this paper and to answer the research questions, the authors will use the existing theoretical and practical knowledge published in peer-reviewed journals, articles, and books and a questionnaire that has been distributed electronically to Macedonian commercial banks. More precisely:

a) Secondary data: data and information from relevant existing literature on E-banking, like journals, statistical data, reviews, e-books, published presentations, blogs, and expert's published views. The paper uses a number of published publications and works on E-banking by domestic and foreign authors.

b) Primary data: A questionnaire regarding the application of E-banking before and after Covid 19 in the Macedonian commercial banks was distributed online. The research instruments contained open and closed questions (Likert scale, semantic differential, multiple-choice questions). The period of the research was between February 15th – April 1st, 2022. Replies were collected mainly by e-mail, as well as personal contacts. 8 commercial banks answered the survey. For describing the findings, descriptive statistics are used, where together with simple graphics analysis, they form the basis of the conducted empirical research.

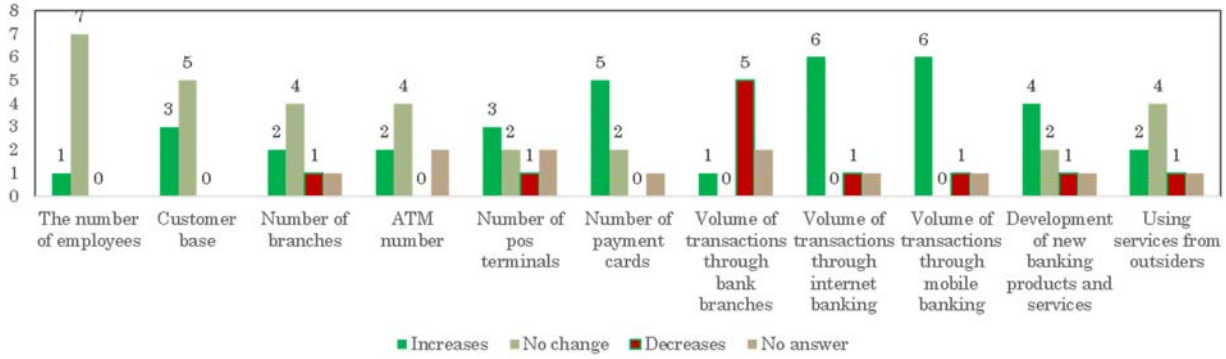
4. DISCUSSION AND ANALYTICS

The Macedonian banking system consists of twelve commercial banks and one national development bank. For the purpose of the research, the authors distributed questionnaires containing questions about the impact of Covid 19 on digitalization in Macedonian commercial banks. The questions were investigating the level of impact of Covid 19 over the internal organizational restructuring of the bank's existing operating processes on a Likert Scale from 1 to 5, where 1 means extremely low; 2 low; 3 neutral; 4 high; and 5 extremely high; the types of banking products offered via e-banking before and after Covid 19; the level of accelerating the process of digital transformation as a consequence of Covid 19; the direction in which Covid 19 had influence over the customer base, human resources, branch networks, volume of transactions via e-banking, development of new banking products and outsourcing and the bank's strategic commitment even without the occurrence of Covid 19. Additionally, the benefits and difficulties that Macedonian commercial banks experience when implementing advanced technology were investigated, in order to determine the reasons for a Macedonian banking position.

According to the findings, 6 out of 8 banks responded that Covid 19 had a high impact on the internal restructuring of the bank's existing processes. One bank responded that Covid 19 had a low impact and one bank answered that Covid 19 had an extremely high impact on its internal restructuring.

Regarding the area or direction in which they have experienced the impact, the results (see Figure 4) indicate that 6 banks have increased their volumes of transactions via e-banking, while one bank did not respond and one bank had faced a reduction in the volume of e-banking transactions.

Figure 4 Area of the impact of Covid 19

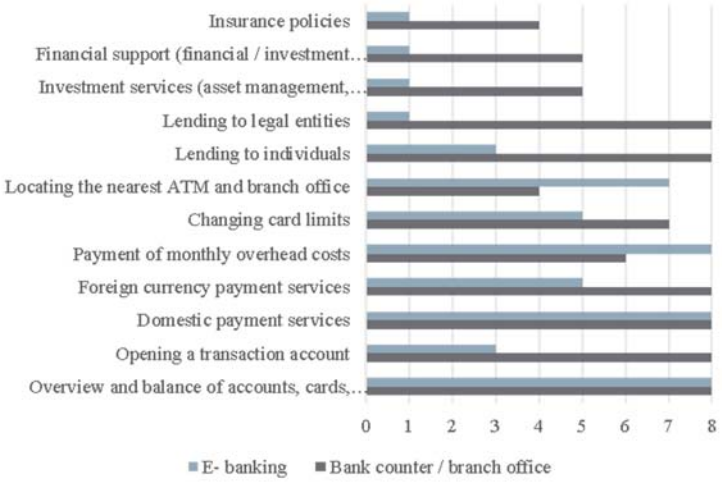


Source: Authors' own research

Five banks responded that there is an increase in the number of payment cards, two banks have not experienced any change and one bank did not respond. Undoubtfully, it can be concluded, that Covid 19 had a high impact on the increased usage of contactless payments and conducting payment transactions via e-banking. However, only three banks responded that they have experienced an increase in their customer base, while five banks did not report any change. The number of employees remained the same in almost every bank - seven, and only one bank has experienced an increase in the number of employees. Interesting data for analysis is that two banks have expanded their branch networks. One of these banks did not experience an increase in the customer base whereas they reported an increase in the volume of e-banking transactions. This finding is opposite to what digital transformation imposes.

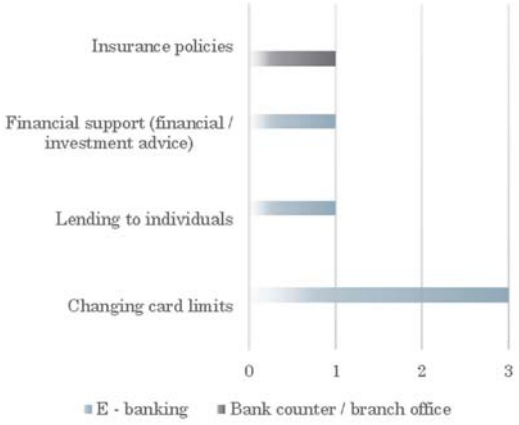
By comparing the channels by which banking products and services were offered before and after Covid 19, the findings additionally show the level of digitization of banks.

Figure 5 Banking products and services offered through E-banking and Bank Counter/Branch Office before Covid 19



Source: Authors' own research

Figure 6 Banking products and services introduced through E-banking and Bank Counter/Branch Office during Covid 19



Source: Authors' own research

When analyzing Figure 5 and Figure 6, it can be concluded that before Covid 19 majority of the Macedonian commercial banks were offering a variety of e-banking products and services such as: Overview and balance of accounts, cards, deposits; domestic payment services; foreign currency payment services; payment of monthly overhead costs; changing card limits and locating the nearest ATM and branch office. Three banks were offering to lend to individuals/households, and only one bank conducted lending to legal entities, investment services (asset management, trading securities), financial support (financial / investment advice), and bancassurance through E-banking. During Covid 19, only one bank increased its offer of financial support and lending to individuals, and three banks with changing of card limits through E-banking.

Nonetheless, and certainly, Macedonian commercial banks had not been pressured by Covid 19, for an immediate reaction regarding the implementation of electronic banking and the digitalization of the part of their processes related to the service of their customers.

Furthermore, this finding is underlined by their response to the question: "In accordance with the strategic determinations, do you think that even without the appearance of Covid 19, your Bank was already focused on greater digitalization of bank's operations and on engaging in Fintech Innovation?". Six banks answered confirmative for having focused on greater digitalization even without the appearance of Covid 19 and two banks did not provide an answer. From these six banks, one bank responded that this is a short-term strategic commitment of the bank, while five banks answered that this is a long-term strategic commitment of the bank. In relation to the bank's engagement in Fintech innovation, only one bank gave a confirmative answer, and two banks stated that this is a long-term strategic commitment of the bank. The other banks did not provide an answer.

By considering the above findings and discussions, Macedonian commercial banks have implemented digital technology to the level they are supposed to in accordance with the legal framework. They are fully aware of the advantages they have from digitized banking services and digitalization. In the empirical research, banks were asked about the advantages that the introduction of modern information technology brings with it to banking, by requiring to assign a degree of agreement (on a scale of 1 to 5[2]) to a certain statement (see Table 3).

Table 3 Level of the agreement for experienced advantages from the introduction of modern information technology

Statement	*Average degree*
Lower transaction costs	3.75
Fast and efficient communication with customers	4.88

[2] 1 = strongly disagree; 2 = partially disagree; 3 = Neutral; 4 = partially agree; 5 = strongly agree

Better services	4.75
Development of new banking products and services	4.88
Increasing market share and conquering new markets	4.13
Improving the risk management process - new models and databases	4.13
Reducing the number of branches and branches	3.00
Possibility to separate banking activities (outsourcing)	3.88
Greater security of information systems	4.13
Greater competition	4.38

Source: Authors' own research

The highest level of alignment for the advantages of the introduction of advanced IT have the statements: "Fast and efficient communication with customers", where seven banks responded that they strongly agree, and one bank partially agrees; "Better services", where six banks strongly agree, and two banks partially agree, and "Development of new banking products and services", where, also seven banks completely agree, and one bank partially agrees. When it comes to benefit of reduction in the bank branch network, only one bank responded that strongly agrees, and one bank partially agrees, whereas four banks are neutral regarding this benefit, one bank partially disagrees and one bank strongly disagrees. This statement was with the most diverse response, and it is apparent that the surveyed banks have different opinions. With a more thorough analysis of the responses, it can be stated that even though all of the banks strongly or partially agree/acknowledge the advantages that come with the implementation of digital technology, they are still biased about the existence of bank branches. For stating the reasons for the alignment level of this statement, further research has to be made, which would correlate also with the banks' organizational culture, leadership, and change management.

Banks were also asked about the issues or problems that they have experienced from the introduction of advanced IT and implementation of E-banking, by assigning a level of intensity on a scale from 1 to 5[3] (see Table 4). The highest intensity banks have experienced regulatory issues or restrictions (3.75), where 6 banks stated that they have experienced regulatory issues or restrictions with high intensity, and 2 banks had a neutral opinion regarding this issue.

Table 4 Intensity of experienced issues/problems from the introduction of advanced IT

Experienced issue/problem	*Average intensity*
Increased costs and need for new capital requirements	3.38
Regulatory issues or restrictions	3.75
Intensification of existing risks or emergence of new ones	3.13
Lack of database and complicated models	3.00
Lack of information system security	3.00
Lack of staff	3.38
Staff training costs and construction of new information systems	3.38

Source: Authors' own research

However, the regulatory body, i.e. National Bank of the Republic of North Macedonia (NBRNM) has already made an effort and provided strong initiatives for changing the current regulatory framework and encouraging innovations in financial services while using advanced technology even before Covid 19. With the establishment of the Innovation Gateway in 2019 as a communication channel, NBRNM (2019) "initiated cooperation between all of the financial regulators and financial companies for the purpose of providing guidance and navigation through the regulatory landscape, considering the need for changes to the regulation, and for removing any regulatory barriers for entry into new innovative business solutions/projects, without disrupting the financial sector integrity, and by avoiding

[3] Where 1 = Extremely low; 2 = Low; 3 = Neutral; 4 = High; 5 = Extremely high

any excessive risk accumulation".

5. CONCLUSION AND FURTHER RESEARCH

A new financial ecosystem evolves, and banks as the inevitable and main part of this system are by far the most concerned. In general, banks are aware of the need to adapt to digital transformation. Results have shown that the Macedonian commercial banks have already embraced this as a necessity. Their investments in the introduction of advanced technology, and providing e-banking services, have delivered continuity in their operation and shown that they are not lagging behind.

Before the Covid 19, all of the surveyed Macedonian commercial banks have already been offering online solutions to their customers, even though within a limited number, and now they are just accelerating their technological innovation as strategic commitment.

However, the biggest issue that they face when implementing advanced technology in their e-banking services is the regulatory framework. The digital transformation of banks is enabled through the inclusion and entrance of new Fintech players. However, those players are impracticable without a legal framework that leads and allows the usage of advanced technology and financial innovation.

Acknowledging the evolution of banking towards embedded and ubiquitous, and the fast pace forward towards greater financial inclusion, the further research of the authors would be a detailed analysis of the digitalization and introduction of Fintech companies in the Macedonian banking sector. This research would be using a comparative analysis of historical data related to the implementation of digital technology into the Macedonian banking sector, by considering all of the relevant stakeholders.

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