

# FinTech and the Customer Experience: How to Embrace Change in Macedonian Banking Industry?

Snezhana Hristova, PhD, Dusica Stevcevska-Srbinska, PhD,  
Stefan Tanevski, MSc., Igor Spasoski, MSc  
School of Business Economics and Management,  
University American College Skopje, North Macedonia

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## ABSTRACT

Over the last decade, modern, disruptive innovation and FinTech services have been developing rapidly and are becoming widely used in the banking industry, thereby transforming financial services for customers with both positive and negative implications. Our paper contributes to identifying the dimensions, the determinants and the outcomes of customer experience in FinTech, while from a banking sector perspective, we demonstrate how banks can better integrate FinTech and customer experience in their business models.

In section 1 of the paper, we present a review of FinTech developments in the Macedonian banking industry and we explore how FinTech is reshaping the financial services market. Moreover, we assess if and how Macedonian banks can be better 'digitalized or disrupted' in a Fintech driven future. Some of the key technologies that are elaborated with a focus on banks are: electronic banking and e-trade, digitalization, NFC technology, blockchain technology and many other technological aspects. In Section 2 we present a review of customer experiences and the ongoing degree of innovative infrastructure and client-based approaches with a focus on clients' outlook of the banking system. The results show that the improved banking infrastructure and new innovative technology-based services are vital for building trustworthy client relationships which are crucial for adaptability and survival in the era of digitalization. The findings also provide more evidence on the current trends, problems and opportunities offered by FinTech to the banking sector and the possible challenges to be faced on its adaptation.

**KEYWORDS:** *Fintech, Technology, Financial services, Customer behavior, Online banking*

JEL Classification: O30, G2

## INTRODUCTION

Technology has become the reason and trigger for many of our decisions, vastly dictating our behavior. Recently, the growth and penetration of technology has been so inevitable, that it has disrupted the way people ‘finance’. This to some presents an endless loop and challenge, while new technological trends become a daily reality it is us who become dependent on these trends. Hence the impact of digitalization on the financial services industry is of great scale especially given that financial products (payment transactions or credit contracts) are almost exclusively based on information. Additionally, most process implementation has been without any physical interaction in its entirety (exceptions include client advisory). Although fintech has been in use since the 1990s, it is only as of late 2010 that it started to spark interest. With it came a phase of provider-oriented digitalization, which in essence is the standardization of processes and back-office automation (payments, investments and processing credit). Moreover, as of 2020, according to Puschman (2017), we are witnessing a new so-called ‘customer-oriented’ digitalization, reflecting developments in the IT industry and as a result it can be said that fintech is an IT-induced transformation. In addition to technology, another crucial variable dictating the development of fintech is customer behavior. For example, King (2010), found that customers choose channels and interactions that get them to their desired solution in the quickest, most efficient manner pushing banks out of their comfort zone. Statistics from Deutsche Bundes Bank (2016) show an approximately 30per cent decrease in the number of branches in Germany from 1990 to 2015, concluding that financial service providers, are working towards reorganizing agent networks and restructuring channel management in a more hybrid client-based interaction. Additionally, in support of this argument, Pickens et. al. (2009) also write that bank visits have been reduced by a factor of three within the time frame of 15 years.

Despite the fact that fintech is available in high earning countries, data on emerging markets demonstrates that 1.6 billion people and approximately 200 businesses lack access to formal financing (Cleo and Jacqueline, 2022). The statistics mainly persist for two reasons, in part, lack of exposure and high costs. Hence, fintech is said to bridge this gap. Firstly, via its scalability (such as smartphone accessible products). Secondly, through tech advancements which are expected to provide more efficient day-to-day banking (improved network effect, reduced costs of data processing, and more efficient payment mechanisms) as well as reducing the fixed costs of providing services and as a result increasing financial inclusion. However, the adoption of fintech depends on two main factors: Country-level and Sectoral. Country level factors imply the deployment and sustainability of Fintech innovations. For this will we look into:

- Market conditions: government use of e-platforms (e-services), market structure and demographics (financial literacy), customer response.
- Digital foundations: the level of use of digital means in commerce and connectivity infrastructure
- Entrepreneurial ecosystems: access to funding, mentorship and incubators and
- Sectoral, such as enabling and promoting Fintech by institutions and financial infrastructure and payment.

Hence, we seek to assess whether and how Macedonian banks can better ‘digitalize or be disrupted’ in a Fintech driven future, and proceed in identifying the dimensions, the determinants and the outcomes of banks and their customers in North Macedonia.

## **THEORETICAL UNDERPINNINGS:**

For years banks were using traditional business models to yield large profits. However, as fintech spurred, facilitated by the growth of e-commerce, the 'traditional' models turned out to be not so effective. In conjunction with the pace of investment in fintech reaching peak levels banks are forced into redefining their models.

To better understand the current market perspective and fintech developments we analyzed the comprehensive "Fintech Survey" by the National Bank of North Macedonia which involved all concerned parties (Banks, Non-Bank Financial Institutions, Alternative Finance Firms, Accelerators, Investors, Regulators and Government).

Data from the survey is encouraging. The study found that 89 per cent of all respondents agreed on the need for fintech in North Macedonia. Banks and Non-bank incumbent responses are optimistic. Namely, they believe that fintech has the potential to bring benefits. Easily accessible systems, convenience in transaction management and greater competition are likely to deliver a more improved customer experience. Furthermore, banks believe that fintech will bring product personalization, big data analytics and overall better customer experience. Additionally, they perceive fintech companies as 'partners' in a sense that they can accelerate products and services thus allowing for a speeding up of expansion into new and untapped markets.

Overall, all involved parties see this as an opportunity for lower consumer fees and greater financial know-how and an improved management of finances, especially in younger groups.

The use of fintech among younger groups is also confirmed by Manasov and Ivanovska (2018), who surveyed clients from Macedonian banks and found that indeed, younger clients prefer services from non-banking entities mostly due to lower costs of transacting and 24/7 access to products.

Although, there is a resounding agreement between all parties including government representatives that fintech brings benefits to consumers, SMEs and the wider economy, it does come at a cost. Hence all the benefits should be accordingly weighed with all the risks posed by digital providers.

According to the survey by NBRNM (NBRNM, 2020), approximately 60 per cent of respondents noted an increased risk of cybercrime and financial crime as likely to be heightened because of fintech. As the report states: "Fintech firms are often started by non-financial entrepreneurs, who may not appreciate the intensity of compliance in the financial system.", concluding that Fintech newcomers could fall foul of the law. All parties involved are in conformity that cybersecurity, financial crime and money laundering are the biggest risks with fintech.

With regard to the legal framework, North Macedonia has implemented several EU legislations related to payment systems which were adopted in 2020. Odorovic et. al (2020, p.6) find that: "the creation of innovation hubs and sandboxes may not be within the purview of regulators, except in the Republic of North Macedonia and Montenegro". Macedonian government representatives surveyed by the NBRNM (NBRNM, 2020) do support and agree on Fintech inclusion in North Macedonia, as they believe that it will provide 'gateway access towards the digital economy. In fact, Mastercard (2020), reports that North Macedonia is the first in the region to launch a digital service identity

bringing digital identity to Macedonian citizens, concluding with the openness of government towards fintech. Yet, still there seem to be some legal and regulatory barriers in adopting fintech. Involved parties expressed concerns mainly that the current legal framework is extensive and overprotective and therefore sometimes even too restrictive, thereby overburdening the consumer.

In support of this, we turn to Odorovic et. al (2020) who conclude that the cause of low-level financing for most SMEs is due to lack of ‘lending appetite’ by banks. Namely, 16,4per cent expressed repulsion due to complex application procedures. Moreover, in a paper published by the European Central Bank on “Access to finance in the Western Balkans”, the authors found that limitations to finance is one of the main obstacles for doing business, to the point of hampering transmissions of monetary policy. Furthermore, any limitations to finances could possibly hinder economic development. This explains why this so-called ‘finance-growth’ nexus is of so greatly discussed in the academic literature (see Levine 2005; Lawrence 2006). Given fintech’s scalability and efficiency, such untapped potential could easily be tackled, therefore posing a competition to traditional banking models. Ilijevski (2020) concludes that regardless of the status (incumbent or newcomer) all parties will have no choice but to cooperate, due to strong competition. The findings of Manasov and Ivanovska (2018) are in conformity with those of Ilijevski (2020), concluding that cooperation between banking competitors could be inevitable should they wish to face non-banking entities when inventing, creating and delivering. According to King (2012), banks should be ready to engage a client whenever they are willing to use products and services, especially if online. We believe that changes will most certainly take place given that fintech is disruptive, leaving opportunities for innovation, improved quality and more efficient banking in which end users will benefit greatly.

Last but not least, among the greatest challenges and equally important for the adoption and inclusion of fintech is financial literacy. Although the Central Bank of North Macedonia and respective Central Banks in the Western Balkan region have undertaken many initiatives in raising awareness for financial literacy this still poses a challenge. Interestingly, the data on financial literacy seems to be improving. Krstevska and Pavleska, (2019) find from the aspect of the components of the aggregate index, in Northern Macedonia in the field of financial knowledge and financial behavior solid results are seen. They further state that: “45per cent of respondents demonstrated a solid knowledge of basic financial concepts, which contributes to sound financial decisions”. Additionally, they find that a population with a high level of financial literacy better understands the financial system, and at the same time, better protects itself from financial risks. Concluding that financially educated clients make better use of the benefits of existing financial products, which ultimately contributes to sustainable and inclusive economic growth.

Given the findings in literature, we do believe that consumer preferences and their understanding and usage of products and services are a crucial driver of the development of fintech and the banking sector in North Macedonia.

In order to evaluate whether any relationship persists between past experience in usage of e-services and future usage of products and services, we put to test the following hypothesis:

H0: There is no relation between the experience of using e-banking and m-banking services of the banks and the people choosing to use these platforms.

H1: There is a relation between the experience of using e-banking and m-banking services and the people choosing to use these platforms.

### **Methodology:**

This paper aims to identify the dimensions, the determinants and the outcomes of customer experience in FinTech. For this we have administered a carefully composed questionnaire in a way to give the appropriate weight and significance to the research. The questionnaire is designed in a way so that we can extract general information on the respondents such as gender and level of education. Followed by a set of questions on the respondents' need for banking services as well as the frequency of their needs in order to have a clear picture of the level of their knowledge and familiarity of the banks, the bank branches and their services. Furthermore, we have also included a set of questions on frequency of use and of the available digital services as well as their satisfaction with the same. Last but not least, through the questions on the usage of technologies such as block chain and crypto by our respondents we wanted to evaluate what is the current perspective on the said technologies.

Data from the questionnaires are analyzed through statistical tools in SPSS Software. Additionally, in order to test our research hypothesis we implemented a non-parametric chi-square test to evaluate whether or not a relationship is present between the variables of interest.

## **RESEARCH RESULTS**

For this survey, we sampled 58 respondents aged 22 – 30, given that the highest use of e-services is expected from this generation. Data shows that gender distribution was almost equal, with a slight dominance in males at 51,7per cent relative to 48,3per cent in females.

Limiting the age group of the respondents was done for two main reasons. Firstly, the percent of users of e-banking, m-banking and other digital platforms in the age group of 40+ is lower and is decreasing even more with the age groups of 45+ and 50 and above respectively.

Secondly, the age group of 22-30 is expected to put society in the fast lane towards the trends of more developed economies with regard to fintech.

In regard to their level of education, the dominant group is made up of respondents who hold a university degree, at 83per cent. The remainder have a secondary education. When asked on the frequency of banking needs 38,6per cent of the respondents stated that they use banking services a few times per week, followed by 19per cent of respondents who use it once a day. The rest of the respondents use banking services anywhere on a weekly basis or even less. On banking visits, the vast majority of 63,8per cent visit a bank's branches less than once a month, which pertains to the idea that the development of e-services reduces the need for bank visits.

Data on the use of e-banking services is encouraging. Namely, 55 out of 58 respondents use the e-services that their banks offer, of which 41,4per cent use the services a few times a week, whereas only 5,2per cent do not use e-banking at all. The rest, use e-services anywhere from a daily basis to once a month. Furthermore, roughly 81per cent of the respondents use some form of m-banking on their smartphones or tablets. On pre-

ferred banking channels, a strong 77per cent of the respondents chose e-banking, m-banking, ATMs and other digital channels, over 23per cent who prefer physical banking locations – which conforms with the findings of King (2010) and Pickens et. al. (2009), customers do indeed prefer reduced physical interaction and opt for the most efficient channels. On the topic of cryptocurrencies, 56,9per cent are somewhat familiar with crypto, and that same majority expressed an interest in investing in cryptocurrencies at some point in the future

Although respondents seem to be satisfied with the services, some of them expressed multiple concerns. Namely, 35,5per cent feel that new trends are the main reason for lower usage, 24,1per cent fear the abuse of information and general security, whereas 22,4per cent expressed unfamiliarity with the usage of new technologies such as the internet and smartphone, and only 19per cent lack information on benefits of e-services.

**Survey Conclusions:**

Given this information, we can conclude that there is a high level of e-banking and m-banking acceptance. This should not come as a surprise after the findings in literature and the data from our survey. An astonishing 94,8 per cent of our sample are e-banking users and 81 per cent are m-banking application users. Furthermore, data shows that Digital banking channels are becoming part of everyday life. Namely, 13,8 per cent of the respondents use e-banking at least once a week, whereas 41,4 per cent use it a few times a week and 15,5 per cent use it every day. Lastly, given that 76per cent of respondents opted for channels with minimized communication (online banking and ATMs), going digital in fact is inevitable.

**Hypothesis testing:**

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	58.000 <sup>a</sup>	3	<.001
Likelihood Ratio	23.613	3	<.001
Linear-by-Linear Association	20.886	1	<.001
N of Valid Cases	58		

a. 5 cells (62.5%) have expected count less than 5. The minimum expected count is .16.

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	52.307 <sup>a</sup>	4	<.001
Likelihood Ratio	50.315	4	<.001
Linear-by-Linear Association	39.756	1	<.001
N of Valid Cases	58		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is .19.

From the tables shown above, data on the chi-square tests shows significance ( $p$ -value  $< 0,001$ ). Given this, we have sufficient evidence to reject the negative hypothesis thus stating that past experience with e-banking and m-banking does in fact influence further usage of these platforms.

In addition to our empirical research below we present findings from the National Bank of the Republic of North Macedonia in conjunction with the Macedonian E-commerce Association which analyze multiple aspects to further evaluate the digital 'climate' in North Macedonia. Data on the number and volume of transactions shows a yearly increase of 118per cent and 135per cent respectively, additionally, the number of POS terminals in 2020 has seen an increase of 25per cent by comparison with 2019. Hence, this increase in online transacting and the usage of cards is encouraging both for businesses and consumers. In regard to digital wallets and digital smartphone payments, we can conclude that the two are still in their early stages, as only three banks offer such services. However, cooperation between parties is evident. Namely, one of the three banks which offers smart pay, the NLB Bank, has established cooperation with a telecom operator for the purposes of data over voice, as described by the telecom operator: "Mobipay provides a totally new way of cashless payment through the mobile phone". As for Chatbots, this segment on the market is in its very early stages, where only one bank has shown any interest in introducing chatbots. The current services this chatbot offers are info. on automatic loans, credit cards, interest rates, deposits, and locating ATMs. In regard to ATMs, the infrastructure in North Macedonia is well established. According to NBRNM (2019), by the end of 2018 there were 1,040 functioning ATMs that accept all major card brands issued by domestic and foreign banks. Furthermore, the newly installed ATMs support features such as, paying monthly installments for loans or credit cards, paying utility bills and even pay pass or pay wave transactions.

Last but not least, we examined the use of E and M banking and concluded that findings by NBRNM are in conformity with the results from our empirical research. Namely, the total amount of transactions via traditional channels (bank branch) decreased by 3,8 per cent while, e-transactions increased by 3,3 per cent.

## CONCLUSION

Technology has become the reason and trigger for many of our decisions, vastly dictating our behavior. Hence the impact of digitalization on the financial services industry is of great scale especially given that financial products are almost exclusively based on information. Additionally, most process implementation is without any physical interaction in its entirety (exceptions include: client advisory services). Until recently banks had been using traditional business models to yield large profits for years. However, as fintech was spurred on, facilitated by the growth of e-commerce, the 'traditional' models turned out to be not so effective. In conjunction with the pace of investment in fintech reaching peak levels banks have been forced into redefining their models. In order to identify the dimensions, the determinants and the outcomes of banks and their customers in North Macedonia we performed both desk and field research and analyzed data through the use of contingency and frequency tables in order to better understand the usage of current e-services on the market and chi-square tests to test our hypotheses. Overall, data on the use of e-banking services is encouraging. Approximately, 95per cent of the respondents use some form of e or m banking, and a strong 77per cent of the respondents chose e-banking, m-banking, rather than visiting a branch which conforms with the findings of King (2010) and Pickens et. al. (2009), customers do indeed prefer reduced physical interaction and opt for the most efficient channels. Furthermore, after testing

for the relation between past usage of e-services and further use, we find that a relation exists at 0,01 level of significance. The general conclusion from the second-hand research is that the overall infrastructure in North Macedonia is advancing and should this pace continue, banks undoubtedly will survive the fintech revolution yet it is important to mention that further consolidation and cooperation is required due to scale.

### **Limitations of the study:**

Given a sample size of only 58 observations, we are aware and thus recommend that future research be based on a larger sample size to reduce the margin of error and avoid compromising inferences drawn from it.

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