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## The Covid-19 Outbreak and Shifting Effects on Mobile Banking in North Macedonia

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### Abstract

The need for servicing clients at the branch during and post pandemic period has reduced manifold, with concentration of banks in online channels baked with technology based solutions has overtaken out many of the branch – specific functions. It is obvious the post pandemic era has dramatically shift the banks as well as consumer to a new reality and accelerated the redefining the competitiveness and efficiency in the retail banking in North republic of Macedonia. In this regards, observed changes shows that the online retail banking services, more specifically (Mobile banking) significantly changed and reshaped the banking consumers' perceptions and new expectations.

In this context, the aim of this research paper is to show the crucial factors that drives retail banking consumers in lasting habits for using online product and services. This paper examines the following research questions. 1. What are the main factors that derives banking clients to use online (mobile banking) services.

The research method used in this study 1. Questioner. The results of the empirical study are supporting the proposed basic constructs of the model and some specific relationships in terms of pandemic and factors that spur the retail banking clients to shift in mobile banking services.

**Keywords:** Retail Banking, Mobile Banking, Mobile Banking Services, Online Platform

### Introduction

The arrival of the digital age is inseparably linked with appropriate offerings that deliver personalized services, products and pricing to banking clients. Over the past decade especially during the Covid- 19 outbreak, banks have accelerated digital platforms (e.g., micro-segmentation, packaged products and services, and shift the banking services to online platforms) to increase customer loyalty and maintain their competitive advantage.

The pandemic and consequential lockdowns made remote interactions with clients and employees a sudden needs, forcing banks to quickly expand and improve digital capabilities. Many participants believe that the digital acceleration taking place today will have a permanent effect on the industry (Ernest & Young).

The speed of the mobile technology innovation in one hand and opportunities raised from the technological innovation (especially during Covid-19 pandemics), has shifted the retail banking clients from branch servicing to online platform. In this regards, Mobile banking has

become prominent technological innovation in the banking sector giving a competitive edge over traditional banking. Banks are reinforcing investing in mobile channels by providing new mobile banking services.

Mobile banking is a service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet. Unlike the related internet banking it uses software, usually called an app, provided by the financial institution for the purpose.

The high percentages of smartphone and mobile technology users are becoming highly useable and trendy in recent years, the commercial banks in North Macedonia during the Covid -19 pandemic reacted to the new pandemic reality by reinforcing the online platforms by providing banking services to customers via mobile banking. As platform Mobile banking adaptation in North Macedonia has not yet reached its full potential and it is in early stage of adaptation, so investigating the variables especially critical variables for reaching the full potential is in tremendous importance not only for banks mobile strategies but also for customers to embrace and adopt the benefits of using the mob app.

The mobile banking services contributes to the on-going change in customers' habits. Mobile banking in develop countries is more the norm than the exception, moreover, is cheapest and easiest way to execute transactions and an optimal options for promoting and delivering retail banks products and services.

Likewise, the Macedonian E-banking is emerging as more definite. Following current trends, we can admit that the Macedonian banks are not lagging behind introducing alternative channels to perform banking services. Hence, the analysis of the application and the costs related to E-banking represent particularly imperative to determine the progress in the application, its future challenges and guidelines for its further development of E-banking within the Banking sector of the Republic of Macedonia.

Costumers expecting more and more from mobile banking apps; they also consider the quality of a bank's app more important than the in-person banking experience. Convenience, the clearest benefit that mobile banking provides is round-the-clock. Security, financial account information is among the most sensitive personal data that exists; as such, preventing identity theft and financial fraud are foundational for banks.

As consumer expectations shift, a great mobile banking experience is increasingly table stakes for any financial institution that seeks to be competitive in the space. Established players find themselves squeezed by startups and mobile-first banks to give their customers more. Financial institutions that can recognize these opportunities before others will be rewarded with increased acquisition, engagement, retention, and lifetime customer value (LTV). Those who fail to deliver a modern mobile banking experience risk getting left behind.

### **Literature Review and Hypothesis**

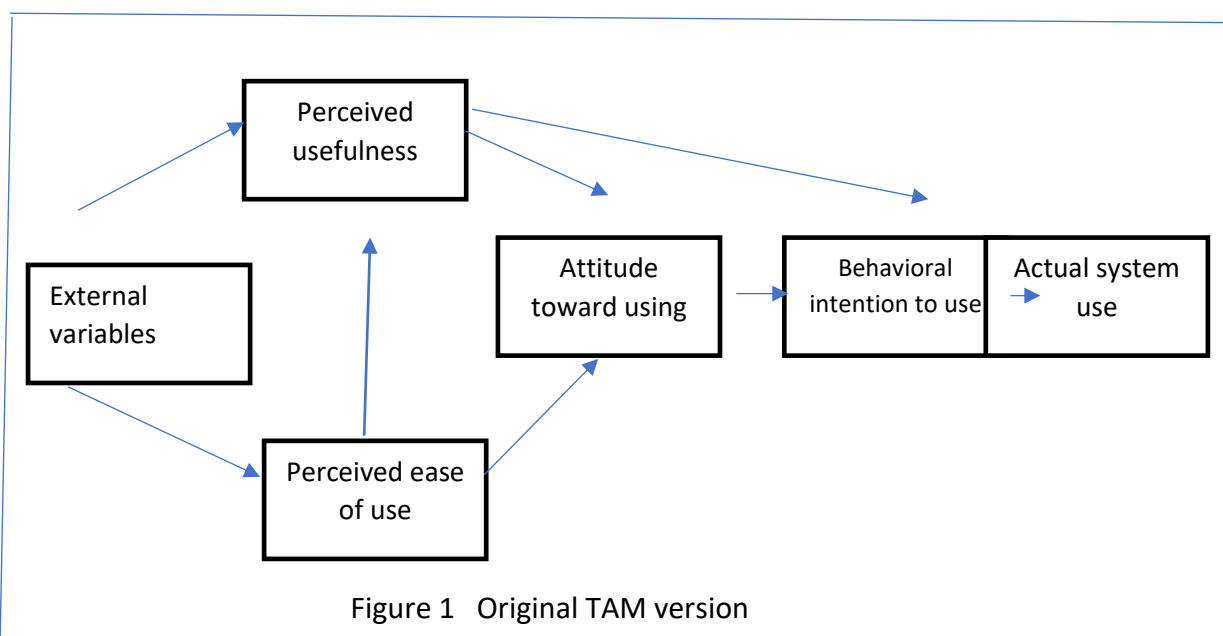
Considerate of consumer behavior is fundamental perception for decision making processes for all business function and activities. Consumer behavior as an essential part of business processes can defined as the decisions and actions that determine the purchasing behavior of a consumer. The study of consumer behavior not only helps to understand the past but even predict the future. Since using certain technology represent ones behavioral act, models that originate from behavioral psychology are compatible when analyzing different factors that determine consumer behavior.

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The technology acceptance model (TAM) was first

created by Davis (1989), based on the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) in psychology research. The TRA posits that individual behavior is driven by behavioral intention where behavioral intention is a function of an individual's attitude toward the behavior and subjective norms surrounding the performance of the behavior.

The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. It successfully explored the behavioral intentions as "The degree to which a person has formulated conscious plans to perform or not perform some specified future behavior (Davis 1989). The original TAM includes two main independent variables which are Perceived Usefulness and Perceived Ease of Use that influence the intention to use as a dependent variable, nonetheless; it was found that they are not sufficient to capture key opinions for adopting new technology, and that's why many previous studies have integrated more variables to TAM such as Perceived Risk and Perceived trust.

TAM proposes that perceived ease of use and perceived usefulness of technology are predictors of user attitude towards using the technology, subsequent behavioral intentions and actual usage. Perceived ease of use was also considered to influence perceived usefulness of technology. Figure 1 presents original version of TAM (Davis, 1989)



In TAM, perceived usefulness refers to the degree to which the user believes that using the technology will improve his or her work performance, while perceived ease of use refers to how effortless he or she perceives using the technology will be. Both are considered distinct factors influencing the user's attitude towards using the technology, though perceived ease of use is also hypothesized to influence perceived usefulness and attitude towards using the technology. Finally, such attitude towards using the technology determines the behavioral intention to use that technology. Figure 3 depicts the research model employed in the study. It is a reduced TAM model, excluding actual system use. The external variables constructs are also not included in the research model as there is no immediate intention to examine antecedents to perceived usefulness and perceived ease of use.

### Perceived Usefulness

Perceived usefulness (PU) is one of the main constructs of the technology acceptance model TAM in which it is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance, specified that it the effectiveness at work, productivity understood as time saving and the relative importance of the system for the individual's work. Applying this definition to m-banking adoption; perceived usefulness is the perception of users that m-banking will enhance their means of getting the bank services

H1: PU has a significant influence on the m-banking adoption in North Macedonia

### Perceived Ease of Use (PEOU)

Perceived ease of use (PEOU) is a critical construct in TAM, defined as "The degree of ease associated with the use of the system". It provides the leverage to create favorable perceptions, encouraging users to accept and use new systems, Most of previous literatures about behavioral decision making demonstrated that individuals attempt to minimize efforts in their behaviors. Also; extensive empirical literature demonstrated that perceived ease of use directly and positively influences behavioral intention to use.

Therefore, the research hypotheses based on the constructed TAM model in the context of the mobile banking are:

H2: Covid-19 pandemic has shifted the retail banking users to mobile banking services

H3: Perceived ease of use has a significant effect on attitude towards using.

### Methodology

An online survey was used to collect the data that took place in February – March 2022 in the Republic of North Macedonia. This study focused on the intention covid-19 pandemic and shifts of customers to use mobile banking, perceived usefulness and perceived ease of use as TAM model are constructed. The survey questionnaire was distributed to the population of this study that confined 95 respondents who were customers of banks providing m-banking service. The used questionnaire consisted of two parts. The first section captured demographic information about respondents that includes personal information about them and their experience with banking services and mobile applications. The second section questioned the respondent's perceptions of each variable in the model using five-point Likert scales from 1 "strongly disagree" to 5 "strongly agree". Items of the questionnaire were mostly espoused from relevant previous researches with needed authentication and changes in wording tailor-made to mobile banking TAM (Lu et. al., 2008; Lin, 2011; Foon & Fah, 2011; Yu, 2012; Teng et al., 2009). Intention to use m-banking (Lu et. al., 2008). Collected data was entered to the Statistical Package for Social sciences (SPSS) version 22.0. Using Descriptive statistics to describe the respondents', Cronbach alpha for reliability to measure the internal consistency of the main variables of the study and regression analysis to test the hypothesis of the study

### Findings

Table (1) represents the demographic data about the 75 respondents out of 95, who contributed in the survey. 68% of the respondents where males and the rest were female. 32%.The distribution age that dominated in this research are the age group of 31-36, respectively 29.33% of the total respondents. In terms of the education undergraduate holders are dominated group with 46.67%.followed by high school diploma holders 44% and graduated diploma holders represented with 9.33%.Mainly the private sector employed

works 72% replied to the survey, followed by unemployed 16% and public sector employees with 12%. In terms of having bank account almost all the respondents 96% replied that they have active transactional account in the bank. 62% of the respondents are aware of the mobile banking, while 38% are not. The covid-19 pandemic was a crucial for 55% of the retail banking consumer to switch using the mobile banking.

Table 1 Source

*Authors calculation*

<u>Variable</u>	<u>Classification</u>	<u>Frequ ency</u>	<u>percen tage</u>
Gender	Male	51	68.00 %
	Female	24	32.00 %
Age	18-24	14	18.67 %
	25-30	18	24.00 %
	31-36	22	29.33 %
	36-42	14	18.67 %
	Above 42	6	8.00% %
Education level	High school degree	33	44.00 %
	Undergraduate degree	35	46.67 %
	Graduate degree	7	9.33% %
Employment status	Unemployed	12	16.00 %
	Employed private sector	54	72.00 %
	Employed public sector	9	12.00 %
Do you have a bank account	Yes	72	96.00 %
	No (please exit the questioner)	3	4.00% %
Are you aware of mobile banking	Yes (If Yes, Please go to Part A)	46	61.33 %
	No (If No, Please go to Part B)	29	38.67 %
For what reason you are using mobile banking	Check my account up date	2	2.67% %
	Pay utility bills	30	40.00 %
	Online shopping	10	13.33 %
	Transfer cash	0	0.00% %
	All the above	33	44.00 %

Does Covid -19 pandemic shifted your behavior to use mobile banking	I used mobile banking before the Covid-19 pandemic	31	41.33 %
	I started to use during Covid-19 pandemic period	41	54.67 %
	I started to use in pandemic recovery period	3	4.00%

4.2 Reliability and validity of the measures: Cronbach's alpha was used to test the reliability and the internal consistency of the items. The variable is considered reliable and internally consistent when alpha is .70 or above (Hair Black, Rabin, & Anderson, 2010). Our results showed that all alpha scores were greater than .812. The highest alpha was obtained by mobile banking aware respondents ( $\alpha=.0.812$ ), compare to the respondents that are not aware of the mobile banking ( $\alpha=.0.6.96$ ).

### Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.812	.802	8

### Item Statistics

	Mean	Std. Deviation	N
Using mob banking saves my time	4.87	.405	45
I can carry out my banking operations easily using mobile banking	4.53	.625	45
I trust the network connectivity while doing a transaction using mobile banking	4.47	.815	45
I find mobile banking cost effective as compare to visiting banks branches	4.51	.661	45
I used mobile banking because of its 24 X 7 availability	4.78	.471	45
I am satisfied with the level of data and information security provided by the bank	4.47	.694	45
I am comfortable using new technologies like mobile banking	3.98	1.158	45
I am completely aware of all the mobile banking services	3.71	1.236	45

Source: Authors calculation

Mean	Variance	Std. Deviation	N of Items
35.31	18.037	4.247	8

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.696	.664	6

### Item Statistics

	Mean	Std. Deviation	N
I do not trust the network connectivity while doing a transaction using mobile banking	3.19	1.241	27
I am not comfortable using new technologies like mobile banking	2.85	1.064	27
I do not use mobile banking because of possibilities of identity theft, fraud or hacking	3.11	.801	27
I feel the mobile service provider might not perform well and process payment incorrectly	3.15	.602	27
I find it risky to share my private and sensitive information with the bank	2.78	.934	27
I have problems in understanding the language used in mobile banking	2.30	1.103	27

Mean	Variance	Std. Deviation	N of Items
17.37	12.704	3.564	6

Source: Authors calculation

Ordinal regression is a statistical technique that is used to predict behavior of ordinal level dependent variables with a set of independent variables. The dependent variable is the order response category variable and the independent variable may be categorical or continuous. Based on the SPSS calculation the output produced the dependent variable which is Covid-19 pandemics and shifts the retail banking clients to online platform. Followed by categorical variables like age, education, employment status, and reason for using the mobile



banking. And covariates that determines consumer behavior and perception of people who are aware and using mobile banking.

### Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	70.224			
Final	.000	70.224	66	<.001

Link function: Logit.

### Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	34.760	66	.004
Deviance	33.154	66	.005

Link function: Logit.

Source: Authors calculation

### Test of Parallel Lines<sup>a</sup>

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	.000			
General	.000 <sup>b</sup>	.000	66	0.050

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value is practically zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.

### Discussion

Based on the research data and results shows that mobile banking users are in rise, especially the covid-19 pandemic, implied by strict Covid -19 protocols in the public and private institutions, accelerated the process of shifting the retail banking clients toward online banking platforms. However, the process of shifting retail banking consumers to online platform is a process and takes time. Even though the mobile banking concept are introduced in banking sector in North Macedonia beginning of 2000 years, the dynamics and unarticulated market has taken momentum during pandemic crises. The retail banking clients gradually understand the benefits and perceived ease of use, especially when changing habits are involved, the results shows that appropriate education and personal experience can gradually increase further use of mobile banking.

Banks should work constantly in getting to know their clients with the possibility of payments over the Internet, and Internet stores that operate, particularly focusing on their own clients. Banks also need to prepare promotional material especially for order target group, easily understandable and attractive for the clients as well as to provide basic information and explanation for the advantages of mobile banking. For wider promotion of banking banking,

banks should exploit the opportunities offered by the media through a series of promotion materials and demos for the new user within the bank.

Providing financial services via online platforms may significantly modify and/or increase traditional banking risks (strategic, operational, reputational, credit, liquidity, etc.). Therefore, banks need to undertake analysis based on a review of responses to a questionnaire - ART B - Consumer behavior and perception of people who are aware but not using mobile banking. Increased security significantly affects the customer's trust in mobile banking, causing an upward trend in the future. Customers are often interested in the security of their personal information; hence, they have a right to be informed how their personal data are processed by banks. Banks must comprehend an adequate privacy policy, which should be aligned with the regulations on protection of personal data and will be available to the public at the time they become their customer, no matter whether it is offline or online services. Proper implementation of these measures and activities will have a positive impact on banks and will reinforce their operations and market shares especially in the field of mobile banking.

### **Contribution**

This research is a universal approach representing a solid base for future studies on the adoption of new technologies in the country. Its originality and practical implications are reflected in determining the significance of additional constructs that are specific for mobile banking.

It is obvious the post-pandemic era has dramatically shifted the banks as well as consumers to a new reality and accelerated the redefining of competitiveness and efficiency in retail banking in North Macedonia. In this regard, observed changes show that online retail banking services, more specifically (mobile banking) significantly changed and reshaped the banking consumers' perceptions and new expectations. This consumer reply and empirical evidence is a signpost for commercial banks in the country for further analysis and concrete solutions for retail banking clients.

### **Conclusion**

The empirical results confirm that retail banking clients, respectively mobile banking users in North Macedonia, significantly increased the practical usage, especially during the pandemic period and as a result of implied COVID-19 protocols, shifted to more online platforms. The objective of this research is the identification of key factors of clients to use mobile banking services. By modifying the TAM models with a set of variables, it was developed to measure the hypothesis in order to measure consumer behavior and perception of people who are aware of using mobile banking services and people who are aware but not using mobile banking services. Research hypotheses were tested using ordinal regression models. The results of the research study support the proposed models, and some specific relationships are unveiled.

The statistical analysis implied acceptance for the first hypothesis H1: COVID-19 pandemic has shifted retail banking users to mobile banking services. This indicates that the COVID-19 pandemic has a positive impact and significantly increased the unarticulated markets for mobile banking services. While the second hypothesis H2: Perceived ease of use has a significant effect on attitude towards using. This indicates the rational free dimension in mobile banking adaptation decision, which is based on perceived ease of use and reliability.

All other variables in the model (COVID-19 pandemic, perceived ease of use, perceived risk) have statistically significant and positive influence on the intention to use mobile banking.

Finally, the results of the study shows the main managerial implications and provides indications for identification of certain strategies to reinforce this new banking model in the context of new technological advances.

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