

UNIVERSITY OF LJUBLJANA  
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

**THE IMPACT OF DIGITALIZATION ON THE QUALITY OF  
SERVICES OF THE KOSOVO BANKING SYSTEM**

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FADIL BAJRAMI & FATOS IBRAHIMI

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We, the undersigned Fadil Bajrami & Fatos Ibrahim, students at the University of Ljubljana, School of Economics and Business (hereafter: SEB LU), authors of this written final work of studies with the title “The impact of digitalization on the quality of services of the Kosovo banking system”, prepared under supervision of Prof. Mojca Indihar Štemberger.

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## **LIST OF ABBREVIATIONS**

NBS - Nottingham Building Society
TRA - Theory of reasoned action
IDT - Innovation diffusion theory
TPB - Theory of planned behaviour
TAM - Technology acceptance model
PEOU - Perceived ease of use
PU - Perceived usefulness
PIN - Personal identification number
POS – Point of sale
DOI - Diffusion of innovation
CRR - Customer retention rate
TTR – Time to resolution
CSAT - Customer satisfaction

## **INTRODUCTION**

The banking sector, as well as the financial sector, has undergone radical changes and improvements and as such is continuing to develop. In the banking sector, digitalization has brought new business models, concepts and areas for improvement from online banking to monetary transactions. In the financial sector, these applications require employee awareness of the rapid development of the work environment and the general state of change in the banking and financial sector (Piirainen, 2016).

Seeing the extent to which technology and the internet have been developed in recent years, this has affected businesses to change their approach to how they conduct their business, adapting to this form of competition. One of the technology development transitions has also affected the banking sector in Kosovo by digitizing its banking system, thus providing innovations in the work process through online banking (Pace, 2016). Banks have changed the way of their operations and services as a result of the pressure of competition and technology changes. Due to these changes, the banks have moved towards digital services and products, and as the time passes, the changes are going faster and deeper. As the internet speed connection is increasing, the changes are becoming more aggressive. These changes are key to the diversification of banks. Precisely because of technological advances and digitalization, the interaction between companies and official authorities with customers and citizens has also improved and created new ways to reach each other, where digitalization has given banks more ways to reach potential customers and at the same time, helped them improve their services (Piirainen, 2016).

Based on customer satisfaction, traditional banks have to use digital channels of creating new products and services, and also to ensure and expand their market share with enticing new customers. For a successful transition to digital banking, banks need to formulate a strategy focused on six key areas: customer skills, mobile and internet, customer data usage, social media, modernized branches/ATMs and forecasting for a hassle-free experience across all channels (Muluka, 2015).

Some banks that have adopted digital channels such as internet banking are facing various obstacles such as interconnection problems, ranging from security concerns by users, lack of adequate legal framework, poor marketing strategies and links to the internet banking site, where all of these ensure low customer satisfaction (Muluka, 2015). So, in an effort to achieve customer satisfaction, banks use various strategies such as the physical decentralization of branches around the population/commercial areas, making them accessible to customers, and have also benefited from Information Communication Technology (hereinafter: ICT) (Akarara & Ayebaemi, 2019). ICT has enabled a number of new systems in all aspects of business activities and banks have failed to explore this in



their desire for customer satisfaction where one of the systems that has come along with ICT is electronic banking, otherwise known as e-banking (Akarara & Ayebaemi, 2019).

So, it should be noted that the digitalization of the banking system has greatly influenced the work process and through this study it will be researched whether this digitalization has brought benefits to the banks, thus specifying its impact on service quality and customer satisfaction. Given the impact that digitalization of the banking system may have on the quality of service, the state of these digital services should be analyzed, avoiding any features that may bring discontent to customer satisfaction.

The digitalization of the banking system is very current and almost every bank has some of its services, but not all customers are satisfied with this form of service delivery because, despite the possible problems of the online system, not everyone is flexible towards innovations, influencing in this case both employees of the bank as well as its customers. Therefore, through this research will be analyzed the situation, providing in this form the best quality of services, as well as customer satisfaction.

This will be made by having as the research question: Does the banking system's digitalization affect the quality of service, and customer satisfaction?

Given the benefits that digitalization has brought, the purpose of this master thesis is to measure the impact of digitalization on service quality and customer satisfaction.

The survey is based on primary data. These primary data were obtained from a survey conducted with bank customers in Kosovo and employees of these banks. Customers were part of the quantitative research, while employees were part of the qualitative research.

The sources of data collection used for conducting the research are central (Central Bank of Kosovo) and own collected information (questionnaire with: bank customers, employees, and managers).

In Kosovo banking sector there are operating nine banks, seven of the operating banks are banks with foreign capital, while two banks are constituted based on local capital.

Two types of questionnaires were used in this study, as there are two groups of respondents. The first questionnaire was conducted with customers of Kosovo banks, based on quantitative analysis. The second questionnaire was developed with bank employees, which is based on qualitative analysis. In this questionnaire were 5 open-ended questions in which employees expressed their opinion on the digitalization of the banking system and the advantages and disadvantages that this digitalization has brought to the work process.

To collect data on the quality of digital services and customer satisfaction, questionnaires created in Google Forms were distributed to customers and the data on the impact of

digitalization of the banking system came electronically. Whereas the qualitative part of the questionnaires carried out with bank employees was done personally in each bank of Kosovo.

All data were analyzed through Statistical Package for the Social Sciences (hereinafter: SPSS) version 25. To present the results we used descriptive analysis, Pearson's correlation, linear regression, ANOVA and t - test.

## **1 DIGITALIZATION OF THE BANKING SYSTEM**

Digitalization is still a hot topic among managers all over the world. It exerts huge pressure on established companies in many industries, including the financial and insurance industry. As usual, understanding of the concept started from a technical point of view, but today it is well understood that the biggest challenge for an established company is how to transform its business models, processes, people and culture (Štemberger, 2017).

There is a difference between the words “digitization” and “digitalization” even though they are used for the same context. “*Digitization*” is the process by which other forms of representation are converted into a digital format, such as the process of signing in to a meeting through the employee in the reception by signing in with the help of a digital screen (Thorkelsson, 2017).

“*Digitalization*” is the transformation beyond that. A company or an organization seeking to become “*digital*” might focus on automating their processes to create efficiency (Thorkelsson, 2017). Digital transformation is often seen as just another buzzword; it has certainly increased top executives' interest in IT-related matters. Companies around the world have started to digitally transform or are at least interested in considering it (Štemberger, Erjavec, Manfreda & Jaklič, 2019).

In recent years, digital transformation (hereinafter: DT) has emerged as an important phenomenon in strategic IS research as well as for practitioners. At a high level, DT encompasses the profound changes taking place in society and industries through the use of digital technologies (Vial, 2019). Digital transformations that involve the banking system have common challenges and opportunities, regardless of the segment. However, regardless of the segments of the financial industry, there are other challenges depending on the customer context, the degree to which digitalization has taken place, the level of maturity of the transformation, the region, etc. (i-SCOOP, 2014).

The rapid evolution of information and communication technology has brought about radical changes in the way of life, the way people interact with each other and the way they do business, so these transformations have affected every area of the economy such as the financial sector, too. This transformation will continue to develop even more in the coming

years and bring even greater changes in this sector, given that the digital transformation has been part of the bank's agenda for many years and continues to develop further in this regard (Sadiku, 2019; Samiotis, 2004).

The term digitalization is used by media, companies and science for describing a “process of moving to a digital business” (Glossary, 2020). Today, enterprises from many industries recognize that making this move is a major challenge with heavy impact on existing business models. One industry, which intensively discusses strategies for digitalization, is the banking sector (Schmidt, Drews & Schirmer, 2017).

The word "Digital" is a new word in this sector, where banks around the world are moving towards digitalization of their banking system. Regardless of the size, all banks are investing a lot so that every action within them is digitally influencing this form to have a competitive advantage and meet the requirements and needs of their customers as being more digitalized, banks will have many more opportunities to get closer to their customers and better identify the competition (Shukla, 2014).

Due to rapid technological advancement, the banking industry, in particular, is increasingly moving towards online and digitalized value generation. As a result, many aspects such as hybrid customer interaction, network competition, sharing economy-driven services, or the use of blockchain technologies can be found as novel opportunities in the information systems research agenda (Niemand, Rigtering, Kallmünzer, Kraus & Maalaoui, 2020).

Banking sector has undergone radical changes and improvements in the last few years and is in a constant state of development. Digitalization has brought the banking industry new business models, development concepts and areas of improvements, from internet banking to monetary transactions (Piirainen, 2016). By providing digitalization, banks conduct banking transactions to bank branches in various forms of digital channels. In this way the banks aim to reduce the workload they may have in the branches by influencing in this way the increasing satisfaction of their customers and by improving the quality of services. (Ortaköy & Özsürünç, 2019).

All studies that have been done in the banking and financial industry in terms of digitalization are strategic level oriented or customer perspective oriented. When studies are done at the strategic level, they analyze the impact of digitalization on business strategy as well as the impact they may have on business models (Schmidt, Drews & Schirmer, 2017). However, if the orientation of the studies is at the customer level, the study describes the customer's behavior, how they select the technology and how quickly they adapt to new technology and new services (Schmidt, Drews & Schirmer, 2017).

So, banking digitalization includes the digitization of the performance of activities which are performed through digital technologies and online protocols. These activities are included here (Sujana, 2018):

- Money deposits, withdrawals, and transfers;
- Checking/saving account management;
- Applying for financial products;
- Loan management;
- Bill payment;
- Account services.

Banks have an important role in our lives trying to develop and implement the use of the last and latest technology, the purpose of all this is to increase the customer experience (Harchekar, 2018). But, the digitalization of the banking system also has advantages and disadvantages.

**Advantages of digitalization in banking system (Harchekar, 2018):**

- Reduction of costs for banks and customers as well by using cashless transactions, ATMs, etc.
- With more digital data available with banks, they can take data-driven dynamic decisions by using digital analytics. This benefits both customers and banks.
- Number of customers will be increased because of the increased convenience of banking.
- Digitalization reduces human error.
- Need of handling large amounts of cash will be reduced.
- Rural and urban gap will be eliminated.
- Fake currency threat will be increasing cashless transactions.

**Disadvantages of digitalization in banking system (Harchekar, 2018):**

- Digitalization reduces the effort of employees and hence results in loss of jobs.
- Some bank branches may cease to exist with the increasing use of online banking.
- Banks will be more vulnerable to cyber-attacks.
- No one can hide crores of rupees in banks and just act middle class. Privacy may have to be compromised.

The execution of strategic plans towards digitalization is an organization-wide phenomenon and requires the cooperation of employees working at different levels (Niemand, Rigtering, Kallmünzer, Kraus, & Maalaoui, 2020). At lower managerial levels in organizations, the resistance that employees may have to change can lead to the breakdown of a strategic change initiative through inaction. Employees need to show willingness and ability to accept and execute a strategy realizing that this will bring added value to the firm (Niemand, Rigtering, Kallmünzer, Kraus, & Maalaoui, 2020). This also

applies to middle managers, who fulfill a pivotal role in strategy execution, as they combine access to top management with knowledge about the day-to-day activities (Niemand, Rigtering, Kallmünzer, Kraus & Maalaoui, 2020; Wooldridge, Schmid, & Floyd, 2008).

## **1.1 Digital banking revolution**

To mechanize the production process, the industrial revolution used water and steam. To create mass production, the second industrial revolution used electricity, and to automate the production process, the third industrial revolution used electronics and technology. Now a fourth industrial revolution is happening called the digital revolution which started from the middle of the last century and continues to develop even further (Schwab, 2015).

The revolution of information technology has changed every aspect of human being's life including banking. IT works as a catalyst for growth in the banking sector; particularly it supports banking services, productivity growth, and risk management (Abbasi & Weigand, 2017). IT is a business driver and thus can be used to reinforce competitive edge. From the last decade, financial institutions invested heavily in building their IT infrastructure which enabled them a successful transformation towards digital banking (Abbasi & Weigand, 2017). The industrial revolution has changed the lives of everyone in the twenty-first century by influencing the World Wide Web and e-commerce network to increase its power and increase the number of people connected to the Internet (Abrol, 2014).

The term "Internet" began to be used in the 1990s, referring to the use of a keyboard, television or even the use of a terminal using a telephone line. The beginnings of using online services occurred in 1981 in the four major banks of New York City which provided banking services through the use of the videotex system, but as videotex failed, these services never became popular (Koskosas, 2011).

The Financial Services industry has always sought to be at the forefront of technological innovation. Success has depended on it. The sector led the early commercial adoption of mainframes in the 1960s, the rollout of large-scale credit card and ATM networks in the 1970s, electronic trading in the 1980s, and the early move into online banking in the 1990s (Kelly, 2014).

E-Banking is the product of different generations of electronic transactions. The current web-based internet or E-Banking is the latest of several generations of systems: Automated Teller Machine (ATMs), Phone Banking, PC or House Banking (Mia, Rahman, & Uddin, 2007). The first machines that provided electronic access to customers were Automated Teller Machines (ATMs) where bank users to perform banking transactions call the computer system and use the telephone keypad. Banking PC has allowed users to interact with their bank via computer via dial up modem connection influencing telephone banking

replacement. This banking, i.e. over the phone and through the computer had a higher maintenance cost which is related to the avoidance of procedures that are complex and that are related to updating different models (Mia, Rahman, & Uddin, 2007).

Nowadays, banks exist only as internet banks, so these banks do not have physically built headquarters which make the difference only by providing more affordable internet rates and internet banking features. In Europe, adoption rates of internet banking usage decreases from north to south and from rich to poor. According to a research report from Deutsche Bank, GDP per capita and latitude explain statistically around 80 per cent of the variation in Europe, as suggested by linear regression analysis, and the European average (EU-25, 36%) is below the USA average (44%) (Koskosas, 2011).

As a large number of digital technologies mature together, this has impacted the financial services sector to face new challenges where combined, they have the power to influence the transformation of markets for customers. So, the impact of digital technologies on financial services will be decisive, pervasive and very large. The result is likely to be a very different financial services landscape. Traditional players will fundamentally reconfigure their operations. Complex collaborations among players in financial services and other sectors will be established. New entrants, some with very different business models, will emerge (Kelly, 2014).

E-Banking is widely used in, among other places, the Nordic countries. In 2001, E-Banking was used by more than 25% of the population in Norway, Sweden, and Finland, and by 15% of the population in Denmark (Mia, Rahman & Uddin, 2007). In Denmark, in 2004, the use of e-banking had increased by 45%, where through strong controls, banks prepared the communication infrastructure to take a competitive advantage from e-banking, a reality which is happening in India (Mia, Rahman, & Uddin, 2007).

Internet banking grows – usually, but not always at the expense of branch visits. Bank customers in Europe increased their use of internet banking while Europeans do not discriminate between internet banking and e-commerce (Koskosas, 2011). Seeing this, there is a tendency for those who shop online to be more interested in banking online with the Nordic countries, while the people who are most reserved about online banking are the British and the Germans.

The willingness of customers to perform banking operations and transactions, pending the fulfillment of bank obligations despite their ability to monitor or even control the actions of banks means the trust of customers in e-banking. One concern that customers have in banking services relates to the security of online financial transactions. So, customers do not feel secure and confident when it comes to online banking services for fear of losing their money (Koskosas, 2011).

What is digitalization? Digitalization is defined as the use of digital technologies to implement new business models and provide new revenue and value-producing opportunities (Štemberger, 2017). The process by which information is converted into a digital format in which information is less organized is called digitization. The results of this are the presentation of an object, document, image where in this form a series of numbers is generated which describe a set of points or samples of it (Harchekar, 2018). The result is called digital representation or more precisely a digital image for the object and digital form for the signal. So, digitization expresses the conversion of source material from analog to another format such as the decimal system or another number that can be used (Harchekar, 2018).

Digitalization can be defined as the use of digital technologies in order to create new business models and to provide new revenue and value-producing opportunities (Pirainen, 2016). So, digitalization is a process of moving a business to digital business and integrating these digital technologies into our daily lives. Through digitalization, companies are given an opportunity for organizations and companies to improve their business activities.

Digitalization is a recent trend which began during 1980s when home computers were introduced to the customer markets which opened new channels for customers to become more communal and aware of civil democratic issues than ever before (Patil, 2018).

The modern world in which we are living is dominated by the concept called “Digitalization” (Nayak, 2018). The term digitalization is widely used, so it is used by science, companies and the media to describe the transition of a business to digital business. But this transformation has led the industries to accept that it is a very big challenge; the one of the largest industries which discuss and intensively create strategies to digitize their functions is the banking system. This rapid transformation has made companies feel pressured in recent years as the competition is quite fierce (Schmidt, Drews & Schirmer, 2017).

Digitization helps in promoting the e-services via e-banking which is broadly categorized into three types (Garg, 2016):

- The basic level of service in which the banks website disseminates information on different products and services to customers. It may receive and reply to customer’s queries through e-mail (Garg, 2016).
- Simple transactional websites, which allow customers to submit their instructions, applications for different services, and queries on their account balances. They do not permit any fund-based transactions on their accounts (Garg, 2016).

- The third level of e-banking services provided by fully-transactional websites which allow customers to operate on their accounts for transfer of funds, payment of different bills, subscribing to other products of the bank, and to transact purchase and sale of securities (Garg, 2016).

The unprecedented change brought about by ubiquitous digitalization, high-speed connectivity, and globalization has created a new concept of value creation and therefore a new economic paradigm (Sadiku, 2019; Prahalad & Ramaswamy, 2004).

Digitalization is considered a modern trend which was argued to start in the 1980s when computers were introduced in the customer markets where after that new channels were opened through which customers become more aware of democratic civil issues more than ever. This evolution of technology has led to the removal of many barriers in modern society where it allows customers to have more freedom and opportunities to interact with others regardless of space and time (Pirainen, 2016). Digitalization is the process of transforming information into a digital format, in which the information is organized into bits (Harchekar, 2018). A company or an organization seeking to become “digital” might focus on automating their processes to create efficiency. In that sense, a company focusing on digitalization might aim at effective outcomes by improving customer engagement (Thorkelsson, 2017).

Interaction between companies and official authorities towards customers has greatly improved due to technological advances creating new ways to reach each other. Digitalization has given many opportunities to all sectors, but this can be easily identified in the banking sector where digitalization has created many opportunities for banks to reach potential customers and has helped banks to improve their services (Pirainen, 2016).

According to Deutsche Bank's 2015 report, digitalization is driven by three forces: customer experience, technical benefits, and economic benefits. So, customers are the ones who create the pressure to make quick and innovative solutions. Customers demand global experience and service which is sustainable, this is a challenge for banks because they have to adapt their existing models to change customer expectations for cost (Thorkelsson, 2017). The technological push is all the possibilities in digital infrastructure, providing billions of customers with affordable broadband and low-cost devices and the immense possibilities of cloud computing with its vast information processing machinery (Thorkelsson, 2017). Digitalization accelerates economic growth, creates jobs, allows companies to lower cost and generate revenues in new ways. Digitalization can reduce costs by up to 90% where software assists the business in collecting data which helps to understand process performance, risks and cost drivers. This enables managers to actively address problems (Thorkelsson, 2017).

Digitization makes banks more responsible to regulate e-governance (Garg, 2016):



- They should be efficient in producing and supplying e-banking services to the community.
- They should provide maximum security for the money entrusted to them by their customer.
- They should maximize the profits for their shareholder.

Once we move away from digitizing traditional banking services to inventing digital banking services that suit the blockchain era, we will experience increased accessibility and trust, cheaper and faster services and a significantly more automated banking industry (Laurinavicius, 2017).

Referring to figure 1, digitization is very important and vital in the processing, storage and transmission of data because it allows information of all kinds to be carried out and intertwined with the same efficiency. Digital data, unlike analog data which suffers quality loss after each copy, can be transmitted without any problem (Harchekar, 2018).

*Figure 1: Five key banking technology trends*



Source: Harchekar (2018).

## **2 HISTORY OF ONLINE BANKING**

The evolution of online banking started in the 1980s when the definition and the practice of internet banking were far different from what exists today (Sarreal , GoBankingRates, 2018). Nowadays, when technology has a very important role, when customer preferences are oriented towards performing banking services through the Internet, it is not an easy process to understand the time when every banking process had to be performed at a bank

branch. Despite the fact that online banking has existed since the 1980s, conducting a transaction was not as easy as one thought (Pace, 2016; Sarreal, 2019).

The advent of internet banking first appeared from telephone banking in the 1980s and continued to grow as the internet was used at home. European and US banking and finance companies over the years have begun work on the concept of "home banking". Since computers and the Internet were not current and usable before, they turned towards telephone banking (Sanli & Hobikoglu, 2015).

Internet banking has been around since the early 1980s, but when the term became popular in the late 1980s, it did not make sense as today. Initially, it referred to the use of a keyboard, terminal, television, or computer monitor (Woods, 2014). Now a customer can take a picture of a check with his phone to deposit it into a savings or checking account and receive SMS banking alerts in the form of texts (Sarreal, 2019).

The first appearance of online banking occurred in 1980 and was understood as a keyboard, terminal and television set to enter the banking system through the telephone line. The four largest banks that have provided in-house banking through the videotex system were Chase Manhattan, Chemical, Citibank and Hanover Manufacturers (Halili, 2014). This system was adopted in a fast way, however since videotex was not seen to be successful from the commercial aspect, it was soon terminated. The providing of videotex in France was provided by telecom whereas in the UK with the use of the Prestel system. But the first home service online banking was implemented by Bank of Scotland for customers of the Nottingham Building Society (hereinsfter: NBS) in 1983 (Halili, 2014). They used the same system as UK Prestel with a computer, as the BBC Micro, keyboard that connected to a telephone system and television set, the system was named "HOMELINK". Customers were given the opportunity and were allowed to look at bank transfers, their statements and bill payments (Halili, 2014).

New York was the first country to try this new way of doing business in 1981. After customers did not welcome this way of conducting banking transactions, it was accepted in the mid-1990s, when the Stanford Federal Union of Loans in the US in 1994 made it available to all customers (Pace, 2016).

The Bank of Scotland in 1983 provided their customers the first online banking service in the UK called HomeLink. Through phones and televisions people connected to the internet to transfer money or pay their bills (Sarreal, 2019).

In October 1994, Stanford Federal Credit Union became the first financial institution in the U.S. to provide Internet banking to all of its customers (Woods, 2014). Around a year later, on 6 October 1995, Presidential Bank became the first bank in the country to provide customers access to their accounts online. Many other banks soon followed its lead (Woods, 2014).

NetBank continued the evolution of internet banking which was one of the most successful internet banks, established in 1996 and in 2007 when it ended its activity and closed (Sarreal, 2019).

Bank of Internet USA was officially founded as part of the incorporation of BofI Holding Inc. on 6 July 1999, making it America's oldest internet bank. The conveniences and perks of internet banking became obvious to many customers: higher interest rates online than with traditional banks, greater access to accounts, and online banking transfers (Sarreal, 2019). For many different reasons people initially hesitated to use online banking. Some of them were against because of the distrust they had about its security features. After the facilitation of e-commerce, the idea began to be slowly accepted. About 80% of U.S. banks by the year 2000 provided Internet banking. Bank of America, during 2001, made a big fuss as one of the first institutions to gain more than 3 million online banking customers. (Woods, 2014).

In the third quarter of 1999, only 20 percent of national banks in the U.S. were providing Internet banking. However, projections at that time indicated that 45 % of all national banks in the United States will be providing Internet banking at the beginning of 2001 (Anesti, 2014). At that time, the services provided by the bank were entering into the account history or transferring funds between different accounts and opening an account (Anesti, 2014).

To reduce their costs, banks operate more effectively and efficiently. Internet banking has become so common at this time that a number of banks operate only through the internet. Examples of banks are Ally Bank, ING Direct and Perk Street. Compared to the competition, these banks provide better rates by taking advantage of higher profit margins (Pace, 2016).

But there are a number of reasons why bank customers were not comfortable in testing this new way of conducting business, perhaps the most important one being trust (Pace, 2016). Some were not willing to invest the time needed to get started and some were not sure how to use this innovative system. Nevertheless, 80% of banks in 2000 provided these online banking services in the US (Pace, 2016).

Today, online banking is one of the most popular ways for people to manage their money. Banks ensure internet banking security for customers by using encryption technology such as secure sockets layer, verifying internet banking account activity, incorporating account safety features and constantly warning customers of ways to avoid threats such as identity theft (Sarreal, 2019). The greater use of internet banking has greatly influenced banks to operate only through the internet thus reducing costs by providing more competitive rates (Woods, 2014).

One of the most common and popular ways people manage their money is internet banking. Using encryption technology, banks ensure that this practice is secure for customers, verifying account activity, incorporating account security features, and constantly warning and informing customers about ways to avoid threats (Woods, 2014).

- Theories of online banking

The most common model in mobile banking services is the bank-based model. Through this model, customers carry out various transactions by enabling connection to the bank account. The connection to the bank account can be realized through the respective applications or through the telephone messaging service. In this case, customers do not need to be physically present at a bank branch, unless additional account information is required (Littler & Melanthiou, 2006).

The bank-based model can be a potential market, encouraging current customers to use more banking services or products. Also, non-users can be encouraged or oriented in their use, as a way to conduct transactions between two parties through online services. Thus, the bank can provide such a structure by defining specific employees who will be engaged in creating online accounts, checking them and supplementing them with ongoing information (Littler & Melanthiou, 2006)

The other model, prevalent in many developing countries, is the non-banking model. Through this model, different individuals do not need to have a bank account to carry out transactions of a financial nature. So, the providers of this service are not banking institutions (Littler & Melanthiou, 2006).

Theories related to internet banking are: the theory of planned behavior (hereinafter: TPB), the theory of reasoned action (hereinafter: TRA) and the technology acceptance model (hereinafter: TAM). "These models follow the behavior-behavior paradigm that suggests that actual behavior is declared through intent toward behavior" (Pace, 2016).

So, the two main theories are TRA and TAM. The TRA model assumes that an individual's behavior is influenced by his or her intentions to accomplish that behavior. The intention to commit a behavior is related to attitudes toward that behavior, as well as social norms (Ajzen & Fishbein, 1980).

Goals are a function of beliefs. In this way, a person who believes in a certain behavior will bring positive results, then he will have a positive attitude towards the realization of that behavior; as well as the opposite. Thus, the TRA model assumes that an individual's intentions to accomplish a behavior are influenced by his/her belief about the possible consequences and about the expected results (Davis, 1989).

Whereas, the TAM model assumes that the two main factors that influence the formation of an individual's trust are: perceived usefulness and perceived ease of use. Perceived usefulness means the perspective of an individual that the behavior performed or the use of a particular system will affect the obtaining of positive results or the obtaining of the necessary data. Whereas, the perceived ease of use expresses the degree of ease of use of the system (Davis, 1989).

The first variable (perceived usefulness) is important because it values an individual's belief that the system used will help them perform various processes. However, although the usefulness of a system can be high, if the person finds it difficult to use, then the system will not be accepted (Davis, 1989). Therefore, the TAM model assumes that an individual's intent to perform a behavior or use a system is influenced by his or her belief in the usefulness of the behavior and the ease of use of the system. Meanwhile, the TAM model does not include 'social norms' as a variable due to difficulties in its meaning in testing the TRA model (Davis, 1989).

#### - Theory of reasoned action - TRA

TRA is a socio-psychological model and provides a way to explain the behavior of individuals. The model was first developed in 1967 and then improved by the authors during 1970. The authors assume that an individual's actual behavior could be studied by analyzing his or her goals and beliefs about the given behavior (Fishbein & Ajzen, 1975).

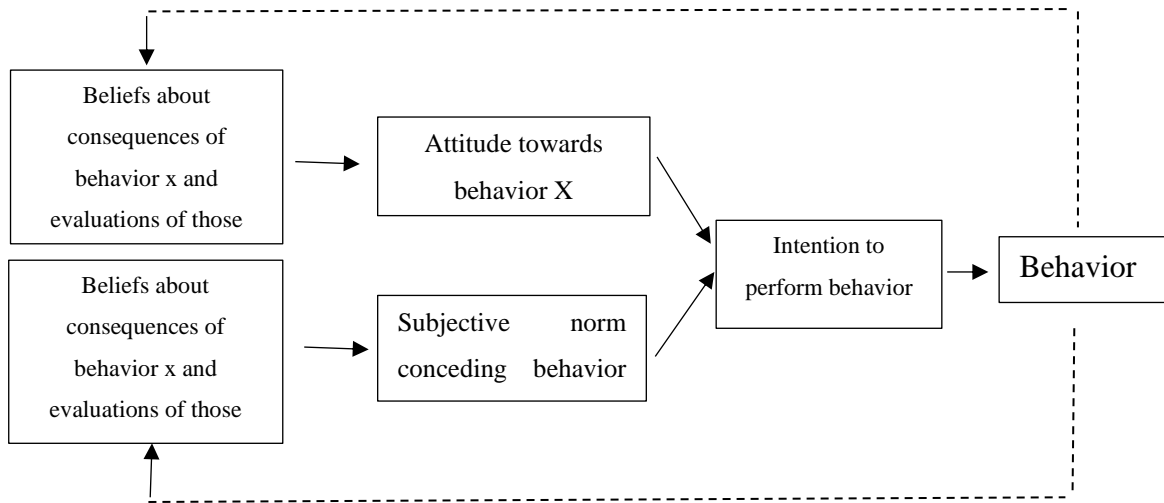
The TRA model suggests that a person's intent to perform a certain behavior may be a predictor of his or her actual behavior (Fishbein & Ajzen, 1975). According to the theory, it is suggested that the intention to perform a behavior is influenced by the attitude towards the performance of the behavior and by the subjective norms regarding it. So, it is noticed that the model is built around three main variables: intentions to realize a behavior, attitudes on behavior and subjective norms (Fishbein & Ajzen, 1975).

Attitudes express an individual's feelings, which can be positive or negative. Instead, subjective norms mean "the perception of the person of most people who are important to think that he should or should not perform the behavior in question." These variables will determine the purpose of their behavior (Fishbein & Ajzen, 1975).

TRA theory states that there are two factors that influence a person to adapt to an innovation. The result of the individual's beliefs stems from attitudes toward the conduct of the behavior. A person throughout his life collects beliefs to form personal experiences and information from other people, but not all of these beliefs have an impact on the performance of the individual (Pace, 2016).

The TRA model is shown in Figure 2.

Figure 2: Theory of reasoned action – TRA



Source: Fishbein & Ajzen (1975)

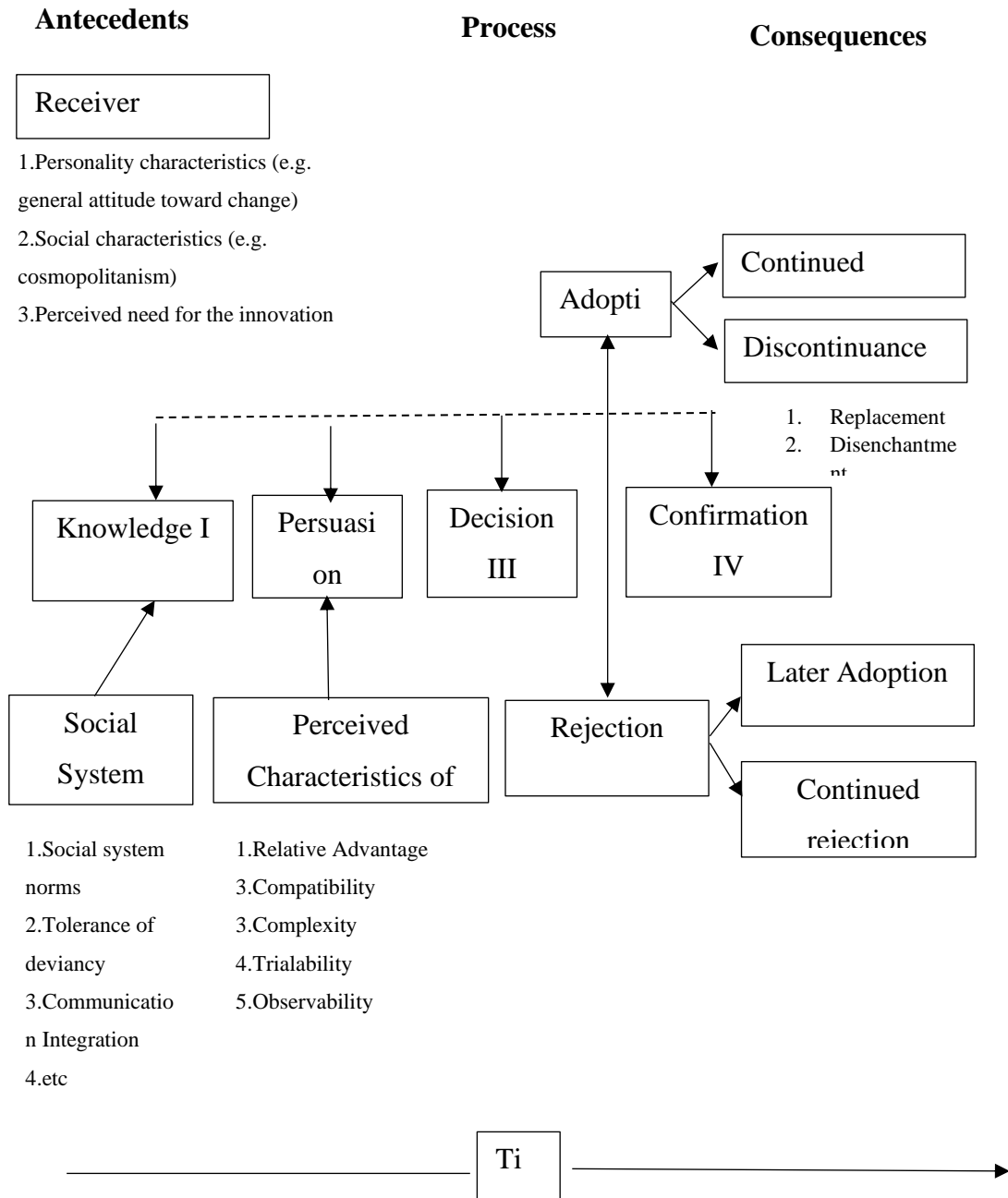
Numerous studies have been conducted in the literature based on the model presented by the authors Ajzen and Fishbein (Fishbein & Ajzen, 1975).

In Kosovo Banking system the connection between digitalization and the TRA model can be explained in connection that the banking industry has put and is putting continues efforts into upgrading the banking services. Thus, strategies and different upgrades are introduced to the bank employees to shift their behavior from offering branch services to offering of banking services through alternative channels. As such the bank employees are focused on the new enhanced services in order to be able to put the focus on duties and responsibilities that will bring a higher value to the bank but to the employee as well.

## 2.1 Innovation diffusion theory – IDT

The innovation diffusion theory (hereinafter: IDT) was introduced in 1995 by Roger. This theory seeks to explain the acceptance of different technologies by a given population (Rogers, 1995). Rogers identifies the spread of technology as the process by which a technology or innovation is communicated through certain modes in a social system over time (Rogers, 2003).

Figure 3: Innovation diffusion theory – IDT



Source: Rogers (1995)

Innovation, meanwhile, has been defined as “an idea, practice, or object that is perceived as new after approval by more composed individuals or groups”. The author also identifies that communication is a process in which people create and share information among themselves to reach a common understanding. The main purpose of the model is to

understand the methods of how new technology can spread in a given social environment (Rogers, 1995).

The author identifies four stages through which the process of spreading innovation goes: 1- creation; 2- dissemination (or communication) through the social system; 3- time; and 4- consequences. In this way, the simplicity of use and innovation of a technology can influence an individual's response or behavior towards it (Rogers, 1995). He also argues that these factors will also be influenced by the social system of which the individual is a member (Rogers, 2003).

An important element of IDT is "time". According to him, the element of time tends to explain the process of acceptance of technology. This process consists of five groups: a. inventors; b. early recipients; c. early majority; d. most of the late; and e. other part. First, inventors are individuals who are willing to accept technology first, which makes up a small percentage; reaching the last group, who are resistant to new technologies (Rogers, 2003).

The five factors that explain the acceptance of technology according to diffusion theory are: relative advantage, compatibility, complexity, controllability, testability. The degree to which an innovation is better perceived than technologies implies relative advantage (Rogers, 1995). This factor is related to individual perception because it expresses that a person's belief values a novelty more than previous technology. According to the author, the degree of acceptance and perception have a positive relationship between them. High performance, low cost and social position provided by m-banking service are some of the factors that influence the creation of an advantage (Lin, 2011).

Compliance means the degree to which an innovation is perceived to be in line with the values and needs of potential beneficiaries and current and past experiences. So, compatibility means that the new technology must be consistent with the experience of the person who will use it and his needs. In this way, this variable can be more related to the technical aspects, in the sense that there should be no interruptions in transactions and provide security in their execution (Lin, 2011).

Instead, provability implies the degree to which an innovation can be tested on a limited basis. So, provability means the opportunity to try out a program, such as performing preliminary tests, simulations, etc. In other words, an individual would have a higher degree of acceptance of the program if he/she had the opportunity to try it out. This will help the user to adapt to the program as well as minimize the uncertainty of using the program (Rogers, 2003).

Finally, controllability implies the degree to which the results of new technology are visible to others (Rogers, 1995). In his paper, the author estimated that this variable was important for technology recipients. The results identified that increasing knowledge of the



program and controllability of all actions that can be performed have a positive impact on increasing the level of its acceptability.

Further studies are presented to improve the model established by Roger (1995). Some authors in their work suggest the addition of two elements (Karahanna, Straub, & Chervany, 1999): image and trust.

Added variables can serve to identify the factors that influence the spread of technology in a given country. So, this model can help identify potential variables in building a study model for receiving banking programs over the phone (Karahanna, Straub, & Chervany, 1999).

Following the research and interviews conducted with bank employees that do operate in the market of Kosovo that do offer banking services including services received in the branches as well as services received online and through alternative channels, “Time” as one of the most important elements of IDT was pointed out. Through innovation, applying of digital services and solutions both categories the bank employees and the customer are able to benefit by saving time while performing a variety of transactions, thus the time saved enabled both parties to focus on other duties.

## **2.2 Theory of planned behaviour – TPB**

The model introduced by Ajzen, namely the theory of planned behavior (hereinafter: TPB) is just an extension of the TRA theory. The TRA theory helps to explain the relationship between attitudes and behaviors, but when a person has no control over the object this theory cannot explain (Ajzen, 1985). It is argued that the attitudes of individuals towards a particular situation or object can be predictable and explicable. According to Ajzen, the theory suggests that only those behaviors that are related to behavior can help predict the intended behavior of a behavior (Ajzen, 1985).

As a result of various criticisms drawn from conclusions from studies in the literature, Ajzen improved the previous theory into a new theory. Some of the main criticisms relate to the fact that there was no clear distinction between real behavior and attitudes to realize it (Ajzen, 1985). Also, in the case of not accepting a new technology, the problem became difficult because it was not clear whether the challenge lay in the actual behavior or in the attitudes to realize the behavior. In this way the author introduces the TPB (Ajzen, 1985).

Planned behavior theory identifies that the intent to perform a behavior is influenced by three factors (Ajzen, 1985):

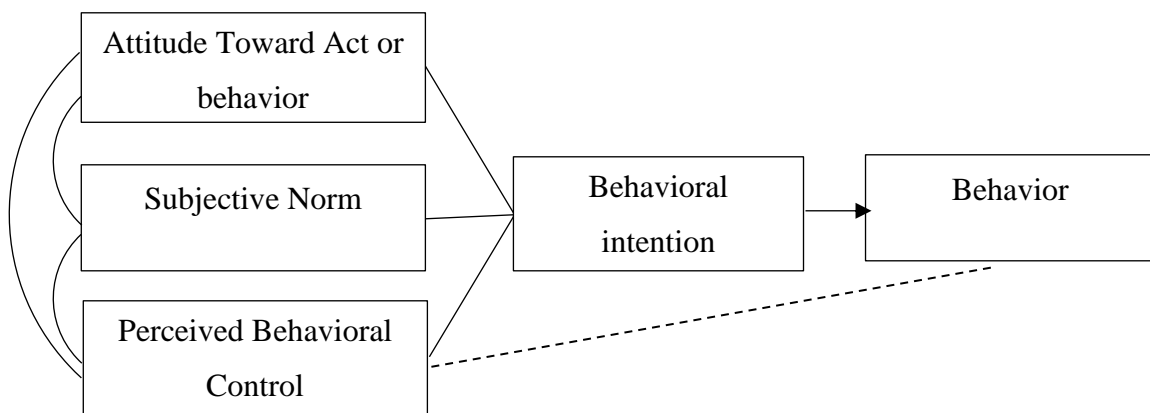
- the person's attitude;
- subjective norms, and

- perceived behavior control.

Subjective norms express the perceived social pressure of a person who intends to realize a certain behavior, reflecting the expectations of others. Perceived control of behavior will express perceptions on the simplicity of performing that behavior, evaluating or considering factors that may have an impact on the full realization of the intended behavior (Ajzen, 1985).

So, it is not enough for a person to have a positive attitude and support from social norms to perform particular behaviors.

Figure 4: Theory of planned behavior – TPB



Source: Ajzen (1985).

In Kosovo banking system the performance of the behavior is impacted by the attitude of the organization and its employees having in consideration also the social pressure which is connect by the very fast changing environment, changing of structure of clients, impact of competition therefore a variety of projects related to digitalization, strategies, policies and procedures are being implemented in order to perform certain behaviors.

### 2.3 Technology acceptance model -TAM

The degree to which teachers use technology and apply it in their teaching process has always been the focus of research. The TAM is one of the models that explains the factors and mechanisms influencing the use of technology (Scherer, Siddiq & Tondeur, 2019). The TAM was developed by Fred Davis in defense of his doctoral thesis (Davis, 1989). This theoretical model is an extension of TRA. Model is an information systems theory to evaluate how users accept and use a technology. The purpose of TAM lies in predicting the acceptability of a particular behavior and identifying the key factors that influence, positively or negatively, the realization of that behavior (Mathieson, Peacock, & Chin, 2001). The reason the TAM appears is to present the IS user acceptance to identify the

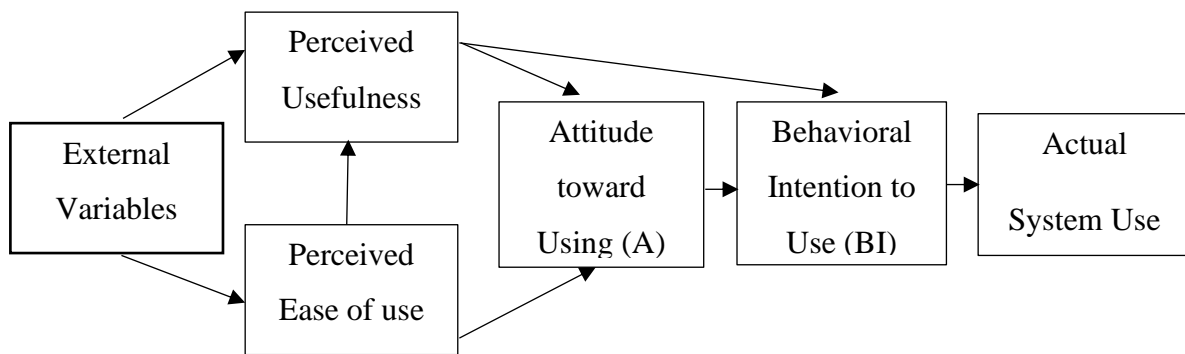
purposes of using the TAM. So, TAM was closely related to TRA. The variables associated with the actual use of the technology identified by TAM are: the purpose of the behavior to be used, the approach to use, the perceived ease of use (Harasis & Rasli, 2016).

The TAM identifies that there are two main factors that influence individual behavior in terms of technology acceptance (Davis, 1989):

- Perceived ease of use (hereinafter: PEOU) and
- Perceived usefulness (hereinafter: PU).

PEOU will mean a person's degree of confidence that the new technology will be easy to use and in line with his or her attitudes. Meanwhile, PU implies the degree to which an individual believes that the use of a new technology will positively or not positively affect his work (Davis, 1989).

*Figure 5: Technology acceptance model -TAM*



Source: Davis (1989).

The study concludes that there is a link between the two main elements and based on the findings it is estimated that PEOU affects PU (see figure below) (Davis, 1989). According to the theory, even though an individual does not have a positive attitude towards a certain technology, if he/she will positively influence his/her work, then the new technology will be accepted (Davis, 1989). A third element included in the model is the attitude towards the use of the system. This variable tends to express the intention of an individual to use or not the new system, which is influenced by the two variables mentioned above (Davis, 1989).

Perceived usefulness directly affects the purpose for using the technological system, while perceived ease of use indirectly affects the perceived usefulness and purpose versus use of the system. Such a link has been verified in many studies in the literature (Taylor & Todd, 1995). In this way the purpose in use is a measure of an individual's readiness or the degree of his efforts towards changing a certain behavior.

The focus on individuals' perceptions occurs based on Davis' model. Therefore, questionnaires and observations are two methods that can be used to study the behavior of individuals according to the research model. Questions should be short and straightforward, leaving no room for misinterpretation (Davis, 1989). The relationship between internal psychological variables such as current system uses and beliefs, attitudes, and behavioral purpose is explained by TAM theory. Attitude towards the use of the system is influenced by the perceived usefulness and convenience leading to the actual use of the system. Due to its high predictive power to explain TAM behavior, it has been highly valued in various IT acceptance contexts (Kim, Chun & Song, 2009).

The research and interview with the banking employees in Kosovo among other objectives had also to receive the perception about the increase of efficiency within the bank, as well as increased the benefits of customers. The outcomes of the research support the TAM model by concluding that the digitalization in the banking system has its positive impacts, increases the possibilities for increasing of the business and also has its impact on the customer satisfaction.

#### **2.4 Benefits and limitations of online banking**

Banking services which are provided remotely through authorized banks through devices operating under the management of the bank or their representatives mean "electronic banking" or "internet banking". The process through which a customer can perform electronic banking transactions without visiting the branch, opening a bank account, accessing the account, being informed about the bank's products and financial services means the term online banking (Khan, 2017).

Its relative convenience is one of the mentioned benefits of online banking. Bank customers can make various transfers, check their accounts, i.e. have access to their balance without visiting the branch but from home (ValuePenguin, 2018). Additionally, the majority of online banks provide mobile applications for your smartphone, although these are also provided by many retail banks as well (ValuePenguin, 2018).

The ability of the bank to reduce costs is one of the main benefits that online banking provides. According to some analyzes, we see that banks can save about 50% of transaction costs by using online banking (Teach-ict.com, n.d.). This provides banks the opportunity to provide more affordable rates to customers by charging lower interest rates on loans as well as higher interest rates on savings (Pace, 2016).

All the benefits that are discussed are benefits from the customer perspective. Through the use of banking services, customers save money as well as time. Such services also increase efficiency in managing customer relationships (hereinafter: CRM) (Khan, 2017).

**Services:** Technology has enabled the access of the customer and the bank to be convenient and easy by entering the bank's website without difficulty (Khan, 2017).

**Convenience:** Convenience is one of the most important benefits that internet banking has enabled. The ability to make payments and transactions from home or any other environment, is an update that no one would want to give up this opportunity (Khan, 2017).

**Better Rates:** This benefit is related to the possibility of passing the savings accrued by the bank, paying the bank customers higher rates for deposits and lower rates for loans (Khan, 2017).

**Mobility:** An extremely great benefit is when customers via the internet on mobile, while on the move, can perform financial transactions, which means it enables customers unlimited mobility (Khan, 2017).

**Increased comfort and timesaving:** E-Banking transactions can be made 24/7, without requiring the physical interaction with the bank (Khan, 2017).

**Quick and continuous access to information:** This gives corporations access to information through easier routes by controlling multiple accounts with just one button (Khan, 2017).

**Speed:** The response of this medium of transaction is very fast; therefore, customers can actually wait till the last minute before transferring the funds (Khan, 2017).

More important than the attractive tariff, for the customers is the convenience factor since the customers can perform services 24 hours a day, 7 days a week without visiting the branch only through internet banking, so this is a convenience that has brought digitalization (Pace, 2016).

Young also states that “the capacity to pay most or all of your bills online is something that we just cannot live without”. Another influence of online banking use for customers is the ease of use in setting up and using internet banking (Pace, 2016).

The advantages provided such as high yields and low tariffs provided by the bank, are mitigated by the lack of location of bank branches and limitation in the services they provide (ValuePenguin, 2018).

*Table 1: Pros and cons of online bank*

<b>Pros</b>	<b>Cons</b>
Higher interest rate offers	No face-to-face customer service
Lower fees	Limited capabilities compared to retail banks
Cashback and other reward	Difficult to conduct cash transactions
Emphasis on mobile and online banking	No physical locations

Source: Value Penguin (2018).

The advantages provided by internet banks compared to traditional banks are many, which include higher rates and lower fees (ValuePenguin, 2018), you may want to consider opening an online-only bank account. Online banks are also a good place to park rainy-day funds, as they may offer significantly higher interest rates than traditional retail banks (ValuePenguin, 2018).

## **2.5 Types of online banking**

Since their inception, the types of online banking have evolved. The types of banks that have the most use are: PC Banking, Phone Banking, Email Banking and ATM (Halili, 2014).

### **2.5.1 Automated teller machine - ATM**

It is a computerized device which offers customers the opportunity to use financial transactions in public space without the need for assistance of bank employees to perform banking operations (Adepoju, 2010). On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smartcard with a chip that contains a unique card number and some security information, such as an expiration date. Security is provided by the customer entering a personal identification number (hereinafter: PIN) (Adepoju, 2010).

ATM is a basic form of banking where customers have access through the card and pin where they can check their balance, make payments, withdraw money. Depending on the degree of use, this small machine can be found in bank centers or even distributed in parts of the city (Halili, 2014).

ATM is an electronic communication device, an automated invoice vending machine which allows customers of financial institutions to use secure communication methods for access to bank accounts, for checking account balance, for withdrawing money without the need for any natural person from the bank (Muluka, 2015). Some ATMs provide the opportunity for customers to make deposits of money and checks, the possibility of transferring money between bank accounts, making mobile phone payments or even buying postage stamps (Muluka, 2015).

We have many benefits from ATMs, which are (Adepoju, 2010):

- Flexible account access allows customers easy access to their accounts.
- MFI employees are not required to be present during transactions to have more time to serve customers.
- It is possible that more customers can be reached beyond the branch network, in smaller centers.
- There are more funds at a lower cost that make it easier for customers to make deposits.

#### 2.5.2 Personal computer banking

The second type of most used online banking after telephone banking is PC banking. The increase in the number of computer and laptop users has made internet banking a simple way to represent through usernames and passwords (Halili, 2014).

Personal computers have come to the forefront along with the increasing use of mobile phones, which greatly facilitate and modernize the provision of banking services (Chovanová, 2006). This information instrument also has a very important role of communication, which is very necessary in the banking sphere. The areas of electronic banking which are realized with personal computers can be divided into several categories, internet banking, home banking, and postal banking (Chovanová, 2006).

Different forms are met varying from country to country: having a license file on the basis of which the customer uploads in the computer and it assures his access in the bank webpage with a user name and password (Halili, 2014). The other way is by having a so-called Token, a small device linkable to a USB containing six-digit numbers which change each minute and the customer may use the token numbers as a password. The other form is from the webpage of banks by putting the user name and password to continue the operations (Halili, 2014).

### 2.5.3 Phone banking and mobile banking

The provision of banking services which occurs through the use of a classic telephone line means telephone banking. Bank customers have the opportunity to obtain the necessary information by calling the number which is specified (Chovanová, 2006). By using this type of banking service, customers have the opportunity to receive various information related to passive and active banking products, where customers can also actively use the banking payment system and request to open or cancel a time deposit, a payment order or a collection order. So, the fax connected to the phone serves as outgoing communication (Chovanová, 2006).

Mobile banking (m-banking) is provision and availing of banking and financial services through the help of mobile telecommunication devices. The scope of provided services may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information (Muluka, 2015).

Phone banking and mobile banking, which are categorized as two different types, belong to modern and classic telephone developments, where banking telephony was one of the first types where customers used the phone and banks with some specific questions made sure that the person who called was the owner of the account. After that they could request the balance, make the transfer as well as make the payments (Halili, 2014). Mobile phones are more effective nowadays as it is the customer himself who does the operations. This form of service delivery is becoming more and more usable and applicable every day. Phone banking is done by a device similar to PC banking but is smaller as a device and provides the ability to perform operations 24/7 where the customer has the opportunity to transfer, pay and check his balance at any time (Halili, 2014).

### 2.5.4 Email banking

Email banking represents the type of bank that operates with customers by sending emails as well as receiving. Through email, customers are informed about the operations they want to take, while the bank provides answers to all questions it receives from the customer (Halili, 2014). The final part is concluded by the confirmation of payments and other specified operations by email between the parties. Email banking has the potential to include the customer's mobile or PC, and in both cases this transaction outcome is accompanied by confirmation (Halili, 2014).

Mail banking is another electronic banking service that makes it possible to communicate with the bank by electronic mail or e-mail. The most frequently used service is sending account statements at agreed periodicity to the customer's mailbox. E-mail is not used for more complex operations (Chovanová, 2006).



Oracle Autoiri is one of the authors who explains the evolution of mobile device and the idea of how it is becoming more usable. Mobile property through an integrated smart card has managed to pass through the system. As far as it is safe, this is shown by time but it is so integrated in people's lives that they have the opportunity to transfer money from mobile to mobile through electronic wallet. So they can only pay for coffee with one card (Halili, 2014). Their study shows that in a world with 7 billion people, 5 billion have mobile phones and 2 billion have bank accounts. It is absolutely natural that coins will become just a vintage type of payment and electronic payment will become a command (Halili, 2014).

#### 2.5.5 Point of sale (POS) terminals

Author Rouse has described POS as a computerized replacement with the ability to record customer orders as well as track, connect to other systems on a network, process credit cards, and manage inventory (Muluka, 2015). The POS terminal allows real time online access to funds and information by a debit or credit card holder. It has many features given that it is fast, reliable and secure. So, it is the cheapest tool and encourages spontaneous buying or even spending (Muluka, 2015). Many banks in Kenya have established POS terminals in various retail outlets in order to create accessibility of the banking system to their customers. The POS terminals are also placed at various outlets to improve the accessibility and usage of debit and credit cards (Muluka, 2015). Terminals are considered to be the widest part of enterprise planning modules for banks, where they aim to increase service delivery channels between different points where customers make purchases (Muluka, 2015).

### 2.6 History and future of online banking

The financial sector as well as banks, like any other industry are developing rapidly due to improvements that have included technology and digitalization. The development of digitalization of the banking and financial sector is affecting the potential for cost savings and the creation of revenue streams (Pirainen, 2016). The improvements that digitalization has had on financial sector so far are mainly to do with daily banking services and no-knowledge-intensive services, such as internet banking and payments solutions (Pirainen, 2016).

Services through online banking were easier to standardize and according to banks reduce the frequency for customers to visit the bank branch where they are customers. According to the author Barclays, banks which were the first to be oriented towards digitalization, after switching to online banking, have influenced their customers to reduce the intensity of bank visits by visiting the bank only 2 times a month, compared to when they used bank services 18 times a month (Pirainen, 2016).

Banks will undoubtedly change radically and will play an important role in the new financial ecosystem. While acknowledging that a prolific imagination can produce innumerable scenarios, they can probably be classified as variants of one or the other of both broad and polar categories (González-Páramo, 2017).

**The first scenario:** The scenario in which banks evolve towards the provision of infrastructure, a scenario which comes from passive strategies, leaving stakeholders with more value-added services (González-Páramo, 2017).

**The second scenario** stems from proactive strategies, where competition is increasing between different players where a transformation of the sector takes place where banks survive the competition by going through a complete metamorphosis (González-Páramo, 2017).

Therefore, banking will have to radically adapt its strategy to this second scenario to survive this pointless competition from new entrants (González-Páramo, 2017). Success will be determined by the ability to take care of their core asset first: the customer experience, secondly to restore their reputation, and finally achieve sharper pricing and process automation so that customers can devote only the time they deem necessary for their administration (González-Páramo, 2017).

The process of digitalization of banks is constantly improving and is happening drastically. Digital banking has a lot of potential to save the cost of digitalization of processes as well as services and at the same time new revenue streams are seen in loans and payments (Pirainen, 2016).

According to a study, financial organizations have three essential ways to compete in the banking digitalization sector (Pirainen, 2016):

- Continuous development of services;
- Continuous development of staff competencies and policies;
- Creating an organizational culture that can respond to the ongoing demand for improved digital services and expectations.

To stay competitive in the market and meet the needs of customers, banks must use external and internal tools. Below are the main principles of the future bank model (Ferguson & Lewis, 2020).

- Data rich and analytics driven processes;
- Intuitive and configurable product platforms;

- Reduced operational cost base;
- Integration with cloud-based technology;
- Open banking inspired API-enabled architecture;
- Maximizing straight-through processing;
- Speed and flexibility in delivery of products and services to market.

The success of future organizations must effectively connect digital channels, global business activities and people. Thus, the use of digitalization and the proper interconnection of these elements will bring many benefits to the financial sector (Pirainen, 2016).

The future will be defined by the choices we make today. There are hints and signs that grow ever stronger to indicate the sort of world that lies ahead for the banking industry. It is fairly certain that the age unfolding will have at its center the customer, without whom we will cease to be, the power of evolving technology, the eclecticism of the innovative mind and an empathetic heart keeping us always on point (Commercial Bank of Ceylon PLC, 2017).

To surpass their existing models, a large proportion of banks have the tools and advantages to overcome their existing models. What is likely to hinder their development is the uncertainty of how to better build strengths and create more sustainable results (Khanna & Martins, 2018).

### **3 SERVICE QUALITY AND CUSTOMER SATISFACTION**

One of the most powerful factors that determines the success or desire of e-commerce and that affects customer satisfaction as one of the most important indicators in any banking system is the quality of service. Service quality represents the difference between customer expectations for service meeting and perception of services received. Quality of service can also be defined as the overall customer impression of the relative inferiority/superiority of the organization and its services (Abrol, 2014).

Banks are those who act as intermediaries to mobilize savings from the public and to lend in the form of loans and advances to trusted persons. Banks do not have the opportunity to survive in the market without their customers, more specifically borrowers and depositors, where each customer is quite happy to have a relationship with those who fulfill their wishes (Kshetrimayum, 2014). The concept of customer satisfaction is equally important for service organizations, such as banks, as many of them subscribe to the fact that higher customer satisfaction will lead to greater customer loyalty which in turn leads to future

revenue (Abrol, 2014). The concept of customer satisfaction does not only mean happy customer but it also comprises a wider meaning. The term customer satisfaction represents a synthesis of two words, customer and his satisfaction (Abrol, 2014).

Customer satisfaction involves customer creation, customer maintenance and retention. Customer satisfaction is a highly personal assessment that is greatly influenced by individual expectations (Muluka, 2015). Many definitions are based on the observation that the satisfaction or dissatisfaction they may have results from non-confirmation or confirmation of individual expectations regarding a service or product (Muluka, 2015). Customers are satisfied with convenience of traditional banking but expectations are constantly rising as new technologies and customer behaviors develop (Muluka, 2015).

The concept of customer satisfaction is a synthesis of two distinct words i.e. customer and his/her satisfaction. In common language, the word “customer” means a buyer who purchases a product or avails a service from another (Abrol, 2014). “Satisfaction” occurs when one gets what one needs, desires, expects, deserves or deems to be one’s entitlement. Customer satisfaction defines as product performance equivalent to customer expectation. Satisfaction expresses as a psychological state resulting from a process of emotional and cognitive evaluation (Abrol, 2014).

The traditional dimensions of service quality in terms of online services have suggested an instrument consisting of seven dimensions that include service quality (ease of use, reliability, personalization, access, security, responsibility and reliability) (Akarara & Ayebaemi, 2019).

**Accessibility:** Accessibility is limited as is the ability of customers to access products, information, services and products from the internet at any given time. Seeing the benefits that digitalization has brought, a hypothetical situation is created that accessibility has a positive impact on customer satisfaction (Akarara & Ayebaemi, 2019).

**Convenience:** E-banking provides customers the opportunity to access the internet banking in any place and at any time (Akarara & Ayebaemi, 2019).

**Security:** Website security is about the security of financial and personal information of bank customers, a field which is highly researched by many researchers (Akarara & Ayebaemi, 2019).

**Speed:** There is a positive correlation between user satisfaction and speed, which means that the higher the speed, the greater the customer satisfaction. The reason why speed is important in these transactions is because in many cases the slow response time after electronic transactions has an impact on service delivery delays, which makes customers unsure whether the transaction has been completed or not. (Akarara & Ayebaemi, 2019).

**Fees and charges:** The possible advantage of e-banking is the provision of the highest quality services, therefore a hypothetical situation is created that fees have a positive impact on increasing customer satisfaction (Akarara & Ayebaemi, 2019).

*Figure 6: Satisfaction as a function of service quality*



Source: Akarara & Ayebaemi (2019).

Customer satisfaction can be determined as a person's feeling of pleasure or displeasure as a result of comparing the product published performance in relation to its expectations. Customer satisfaction concept can be referred to the customer fulfillment response (Dastane & Fazlin, 2017). Satisfaction is defined by many authors as the result of services and goods provided in order to meet the needs and requirements of its customers, or in improving expectations for goods and services which they receive on time (Dastane & Fazlin, 2017). Satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfilment of some need, goal or desire (Abrol, 2014). Customer satisfaction by Kotler is defined as a feeling of disappointment or satisfaction of an individual compared to the perceived performance of products. Customer satisfaction is considered as the result of collective perception, psychological reaction to the customer experience with a service or product and evaluation (Abrol, 2014).

There are so many factors that put impact on customer satisfaction. This model relates to knowledge of employees as a factor, courteous employees, billing clarity, prompt service, quality of service, price, billing capability accuracy, and employees who are useful to the organization (Dastane & Fazlin, 2017). Customer satisfaction is one of the best-studied in marketing, as it has become a key factor in achieving the goals of the organization, and is considered a standard baseline and performance standard of excellence possible for any organization (Dastane & Fazlin, 2017).

Customer satisfaction is manifested with many feelings such as that of happiness, acceptance, satisfaction, excitement and relief. In a competitive market, where different

businesses compete for customers, customer satisfaction will be seen as a key differentiator which is increasingly becoming a key element of business strategies (Abrol, 2014). It can also be defined as a global issue that effects all organizations irrespective of their size, whether profit or non-profit, local or multinational companies that have a more satisfied customer base along with higher economic returns (Abrol, 2014).

To explain the impact of digital banking on customer satisfaction, two theories have been used, namely innovation theory and assimilation theory (Muluka, 2015).

### **3.1 Diffusion innovation theory**

Diffusion of innovation (hereinafter: DOI) theory, developed by Rogers in 1962, is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses through a specific population or social system (LaMorte, 2019). The end result of this diffusion is that people adopt an idea, a new product. or even behavior. This adoption means when a person acts differently from what he or she has had or acted before (LaMorte, 2019).

The spread of this theory aims to explain and describe the mechanisms of how new inventions have become successful, such as POS terminals, ATMs, mobile banking, etc. Although innovations can be very good, it takes time for approval and adaptation. Therefore, resistance to changes occurring in the banking system is likely to be an obstacle to the spread of innovation (Muluka, 2015). Rogers (1995) identified five critical attributes that greatly influence the rate of adoption. These include relative advantage, compatibility, complexity, and observability. According to Rogers, the degree of adaptation to new innovations will depend on how the organization perceives relative advantage, observability, and complexity (Muluka, 2015).

The Innovation Spread Theory also has some limitations which include (LaMorte, 2019):

- Much of the evidence for this theory, including adoptive categories, does not originate in public health and was not developed to be explicitly applied to the adoption of new behaviors or health innovations (LaMorte, 2019).
- It does not promote a participatory approach to the adoption of a public health program.
- It works better with adopting behaviors than interrupting or preventing behaviors.
- It does not take into account the resources or social support of an individual to adopt new behavior (or innovation).

Innovation theory as it promotes innovation has the potential to cause pro-innovation bias. This means “the degree of successful innovation adoption can be explored”. When promoting successful and easily identifiable diffusions, it does not give sufficient account to the unsuccessful one who normally leaves no visible traces which can be studied. (Muluka, 2015).

### **3.2 Assimilation theory**

Assimilation theory is based on Festinger’s (1962) dissonance theory. This theory says that people make many comparisons between product expectations and product performance which is perceived (Muluka, 2015). This view of the customer post-usage evaluation was introduced into the satisfaction literature in the form of assimilation theory. Customers seek to avoid dissonance by adjusting perceptions about a given product to bring it more in line with expectations (Muluka, 2015). To reduce the tension that exists between a mismatch between expectations and product performance, it is customers who can have an impact on this phenomenon. This can be done by distorting expectations to match the perceived performance of the product or even by increasing the level of satisfaction while minimizing the relative importance of non-confirmation (Muluka, 2015).

Assimilation theory has a number of shortcomings.

- First, the approach assumes that there is a relationship between expectation and satisfaction but does not specify how disconfirmation of an expectation leads to either satisfaction or dissatisfaction (Muluka, 2015).
- Secondly, the theory also assumes that customers are motivated enough to adjust either their expectations or their perceptions about the performance of the product (Muluka, 2015).

## **4 HOW TO MEASURE CUSTOMER SERVICE SUCCESS?**

In this session are treated methods for measuring customer satisfaction, methods which are applicable to commercial banks in Kosovo and beyond. These methods are: net promoter score, customer retention, conversion rate, average resolution time, customer satisfaction surveys, customer satisfaction score or CSAT, SERVQUAL, social media monitoring, conversation abandonment rate.

### **4.1 Net promoter score**

Net Promoter Score (hereinafter: NPS) is an index ranging from -100 to 100, measuring your customer’s willingness to recommend your company to others. Essentially, it is a

proxy for customer satisfaction (Dhangan, 2018). The concept of Net Promoter is indicated as the single best metrics predicting companies' ability to grow. Good business produces loyal customers who sell the business for the company (Rajasekaran & Rao, 2018).

NPS is a globally popular customer satisfaction assessment tool, but there is considerable concern among marketers as survey results sometimes do not correspond with business growth (Matkar, Ahuja, & Pandey, 2018).

NPS is the concept to achieve customer loyalty. In ultimate question (book) there are various method of using NPS to gain profitability. NPS adds value to customer by considering customer feedback to improve service which could meet their expectation and be beyond (Rajasekaran & Rao, 2018).

NPS is a decent expectation of customer loyalty inevitably a solid indicator of learning. One straightforward inquiry is utilized to anticipate quality. Be that as it may, their disseminations demonstrated to be unmistakably unique (Rajasekaran & Rao, 2018). NPS specialists commonly share customer input rapidly after it is gotten. They rapidly ask managers or frontline employees to contact each customer who gave a score less than 6 (detractor), to recognize the customer's worries, and to settle the issue at whatever point conceivable (Rajasekaran & Rao, 2018). Customers feel valued when company gets back to their feedback. The data is further used to make an organizational decision, process change (Rajasekaran & Rao, 2018).

The feedback is gathered by the ultimate question, i.e. how likely you are to recommend our service/product/brand to your colleague, friends or family on a scale on 0 to 10 (where 10 is extremely likely) (Rajasekaran & Rao, 2018).

Promoter (Score 9 – 10): When a customer scores 9 or 10, it signals that their lives are enriched by the experience of their purchase, which leads to future purchase an unsolicited recommendation. (Rajasekaran & Rao, 2018)

Passively Satisfied (Score 7 -8): Those who score 7 or 8 got what they wanted but no more, which means they can easily switch to competitor's offers (Rajasekaran & Rao, 2018).

Detractors (Score 0-6): They are the customers/customers who had a bad experience; they either switch to competitors or can damage your brand by negative word of mouth (Rajasekaran & Rao, 2018).

Statistically, the percentage of promoters with 9 or 10 minus percentage of detractors i.e. 0 to 6 reveal the score that is tangible for a real measure of customer satisfaction and future growth potential (Rajasekaran & Rao, 2018).



NPS is proved to be a huge breakthrough in customer satisfaction measured globally. This involves variably breaking down and scoring each step by customer touch point (Rajasekaran & Rao, 2018).

## 4.2 Customer retention

Customer retention is not only a cost effective and profitable strategy, but in today's business world it is necessary. This is especially true when you remember that 80% of sales come from 20% of customers and customers (Boakye, 2011). Retaining good customers (or those that may become good) is one of the most important topics in CRM. Its importance is not confined to CRM — customer retention has a pedigree that goes back to the era of classic direct marketing and branding (Aspinall, Nancarrow & Stone, 2001).

To reduce customer deviations, the organization undertakes activities such as customer retention. Through the first concatenation of an organization with its customers begins the successful retention of the customer and there is continuity throughout the life of that relationship. Affinity to retain and hold customers is not only related to its service and product but to the way it serves those existing customers and the reputation it has created during its operation in the market (Boakye, 2011).

For customers to become loyal brand advocates, you need to give the customer more than he or she expects from you. Some research shows that engaged customers generate 1.7 times more revenue than regular customers. Therefore, the presence of engaged employees and engaged customers returns a 3.4 times higher revenue gain (Boakye, 2011). Businesses want to reduce customer defections to their competitors because a reduction in their market share and profits could result in a collapse of the company (Boakye, 2011). Customer service retention is a popular marketing strategy as it involves focusing on meeting or exceeding customers' expectations in order to maintain their loyalty. Customers are less likely to be persuaded by competing advertising or even offers if they form a loyal link with a particular brand or business (Boakye, 2011).

To measure Customer Retention Rate (herein after: CRR), you will need three pieces of information (Dhanganal, 2018):

- Number of new customers in a given period (N)
- Number of customers at the start of that period (S)
- Number of customers at the end of that period (E)

Formula to measure CRR is (Dhanganal, 2018):

$$\text{Customer Retention Rate} = \frac{E - N}{S} \times 100$$

Even a 1% improvement in retention means a 5% profit increase per customer. Think about that. It is easy to see why every organization must do what they can to maximize customer retention (Dhangal, 2018).

### **4.3 Conversion rate**

Most often, the conversion rate is utilized as a key performance index (hereinafter: KPI) to appraise the effectiveness and efficiency of e-commerce sites. Naturally, all site managers and owners want to know, "how their conversion rates compare?" (Enyioko & Okwandu, 2019). To measure efficiency in banks, the conversion rate is used, where the reason for explaining to marketing managers is because they have the opportunity to go beyond the keyword conversion through that of the segment (Enyioko & Okwandu, 2019). The conversion rate should be used to measure the performance of a marketing organization that is engaged in both B2B and B2C marketing activities. They maintain that conversion rate should be calculated thus: Conversion Rate = Total Number of Sales / Number of Leads x 100 (Enyioko & Okwandu, 2019).

A rational continuation of the linking strategy is the conversion rate strategy as the social media marketing organization continues its sensible and practical communication efforts. A marketing organization, in social branding sites, made efforts to use relevance, quality, frequency as strategic factors to inspire trust. So, reliability is an important factor to respond correctly and in a timely manner. (Enyioko & Okwandu, 2019).

Consequently, affective trust is based on a shared emotional relationship. Given what trust is to social media, the researcher sought and determined the extent to which trust mediated between social media marketing and conversion rate of banks (Enyioko & Okwandu, 2019).

Formula to measure conversion rate is (Dhangal, 2018):

$$\text{Conversion Rate} = \frac{\text{Number of Sales}}{\text{Number of Visits}} \times 100$$

### **4.4 Average resolution time**

Time-to-resolution (hereinafter: TTR) allows companies to track the average time it takes to solve customer issues. TTR is normally measured in hours or days, depending on the nature of the business. It takes into account the time elapsed between the original request log and its closure (Dhangal, 2018).

TTR also called mean time to resolution (hereinafter: MTTR) and resolution time (hereinafter: RT) is the average amount of time that it takes a customer service team to

resolve a case after it has been opened (Insight Squared, 2020). It is usually measured in days or business hours, so it does not factor in time when your team is off the clock (Insight Squared, 2020).

Customer service managers are required to analyze their team's total time to resolution. It may be helpful to know which individual cases were selected, where the time for resolution can be measured as the group average. All this is done through the following formula (Insight Squared, 2020):

$$\text{Average Time to Resolution} = \frac{\text{Sum of all times to resolution}}{\text{Total of cases resolved}}$$

Source: (Papageorgiou, 2016)

Time to resolution directly correlates to customer satisfaction. The quicker your team is able to resolve problems for customers, the happier they will be. If you take too long to resolve their issues, customers will become upset, understandably. According to customer service statistics, they may even take their business elsewhere (Insight Squared, 2020).

Time to resolution also reflects your team's efficiency. Analyzing time to resolution will show how effective your team's process is. You should also keep an eye on any trends you notice within this metric. If your time to resolution is increasing over time, you know something is wrong. Similarly, if you see a sharp decrease in time to resolution without any strategic changes to the team, you may have a quality control issue (Insight Squared, 2020).

Tracking your time to resolution will help measure your team's overall performance. If your time to resolution is longer than you would like it to be, you should find out why that is. By breaking down this metric, you will be able to pinpoint weaknesses, strive to improve them, and, ultimately, make more customers happier (Insight Squared, 2020).

**4.5 Customer satisfaction surveys**

Customer satisfaction (hereinafter: CSAT) surveys are used to understand your customer's satisfaction levels with your organization's products, services, or experiences. This is one type of customer experience survey and can be used to gauge customer's needs, understand problems with your products and/or services, or segment customers by their score. They often use rating scales to measure changes over time, and gain a deeper understanding of whether or not you are meeting the customer's expectations (Qualtrics, 2020)

CSAT is at the core of human experience, reflecting our liking of a company's business activities. For example, Americans will mention a positive experience to an average of nine people and a negative experience to an average of 16 (Qualtrics, 2020)

High levels of CSAT (with pleasurable experiences) are strong predictors of customer and customer retention, loyalty, and product repurchase. Data that answers why a customer or customer enjoyed their experience helps the company recreate these experiences in the future. Effective businesses focus on creating and reinforcing pleasurable experiences so that they might retain existing customers and add new customers (Qualtrics, 2020).

Properly constructed CSAT surveys and questionnaires provide the insights that are the foundation for benchmarking customer happiness. Depending on what customer metrics you intend to use, it will determine what type of survey questions you need to ask your customers. Below are a few best practices (Qualtrics, 2020):

**Ask for overall company rating first:** This satisfaction survey question gives you great initial insight and allows you to compare to industry and internal benchmarks over time (Qualtrics, 2020).

**Allow for open text feedback:** Open text questions allow you to collect open-ended responses from your respondents. You can gain more detail about your customer's experiences and you might uncover new insights you did not expect (Qualtrics, 2020).

**Optimize for mobile:** Many customers are now completing surveys on mobile devices or within mobile apps, so your survey must be optimized for mobile devices. If it is too complicated for a mobile respondent, survey participation will decrease (Qualtrics, 2020).

#### **4.6 Customer satisfaction score**

There are three levels of assessment of CSAT and customer demand according to the KNAO model which is proposed by Fumio Takahashi and Noriaki Kano (Xiang, Li, & Yang, 2013). The main model for evaluating CSAT is the quality differentiation model and perceived expectations (hereinafter: PQEDM) and includes the SERVQUAL model, the evaluated performance model, the multi-phase model, the dynamic processing model, and the standardized quality model (Xiang, Li, & Yang, 2013). In PQEDM theory, customer satisfaction degree depends on the gap between perceived quality and customer's expectations (Xiang, Li & Yang, 2013).

The CSI model is a macro model used to measure customer satisfaction in industries that include the American Customer Satisfaction Index (hereinafter: ACSI), Swedish Customer Satisfaction Barometer (hereinafter: SCSB), Chinese Customer Satisfaction Index (hereinafter: CCSI), European Customer Satisfaction Index (hereinafter: ECSI) that are constructed from econometric methods (Xiang, Li & Yang, 2013).

## **4.7 SERVQUAL**

SERVQUAL is created by Parasuraman, Zeithaml, and Berry and stands for quality service. They have invented a method to measure the quality of service from the perspective of customers (Saraei & Amini, 2012). SERVQUAL is a method used in the service quality literature where the most defined aspects of quality are: reliability, responsibility, merit, security, vulnerability, customer evaluation and accessibility (Saraei & Amini, 2012).

Then in 1988, they summarized the ten previous aspects into five ones. They were as follows (Saraei & Amini, 2012):

- Reliability: The ability of service providers to fulfill their commitments continuously and accurately.
- Responsiveness: The willingness and accountability of the service providers to support their customers.
- Empathy: The intimacy with the customers and understanding of their individual feelings and problems.
- Assurance: The competence and skill of the staff of an organization to give confidence and trust to the customers.
- Tangibility: The tidiness and appearance of assets and property of an organization including its staff.

SERVQUAL model was also called gap analysis model simply because as it was mentioned previously, the gap between expected service and what was achieved portrays whether the customer was fulfilled or not. According to this model, lack of service quality can be attributed to five quality gaps during the process of service provided (Saraei & Amini, 2012).

## **4.8 Social media monitoring**

Monitoring tools help understand what people are saying about you on social media. Insights like this paint a richer picture than simply relying on traditional media (Dhangal, 2018).

Social media monitoring can entail:

**Online Analytics:** Social media analytics tools collect data from social networking platforms like Facebook and Twitter, blogs, comment pages, and news feeds on media sites (Dhangal, 2018).

**Buzz Analysis:** Monitor online sources like internet forums, social networks, and blogs.

**Social Media Intelligence:** SMI refers to tools allowing companies to monitor social media channels and interactions. Social media intelligence is gathered from social media sites, using both intrusive and non-intrusive means, from open and closed social networks (Dhangal, 2018).

## 5 HYPOTHESIS AND RESEARCH METHODOLOGY

This chapter describes the research approach that has been used with relevant methods, trying to learn more about the digitalization of the banking system and its impact on the quality of service and customer satisfaction. Since the digitalization of the banking system is mentioned, the first thing that comes to mind is the banking services, so the study focused on these services and their impact on the quality of services on customer satisfaction.

Primary data were used for the research of this paper. These primary data were obtained from a survey conducted with bank customers in Kosovo and employees of these banks. Customers were part of the quantitative research, while employees were part of the qualitative research.

This Master thesis focuses on the relationship of effect and cause between different variables, explaining what causes the outcome of an effect. With this research we can check different factors to determine what factors are causing the problem by affecting service quality and customer satisfaction, in this form allowing us to isolate the causes and consequences.

### 5.1 Objectives

Given that digitalization has been highly developed in recent times bringing numerous effects to society, the purpose of the objective formulation is to show the impact that digitalization has brought on service quality and customer satisfaction.

**Research objectives:** They show that digitalization in banking has influence on quality of service, and customer satisfaction.

**Research question:** Does the banking system's digitalization affect the quality of service, and customer satisfaction?

## **5.2 Hypothesis**

In this study we have a main hypothesis, as well two sub hypotheses for the digitalization of the banking system.

H: There are statistically significant interrelations that the digitalization of the banking system affects the quality of service and customer satisfaction.

H<sub>1</sub>: There is a statistically significant interrelation that online banking affects the increase of quality of service.

H<sub>2</sub>: There is a statistically significant interrelation that online banking affects the customer satisfaction.

## **5.3 Source of data collection**

The sources of data collection used for conducting the research are: central: (Central Bank of Kosovo) and own collected data (questionnaire with: bank customers, employees, and managers).

## **5.4 The sample included in the study**

Based on data provided by the Central Bank of Kosovo, banks with domestic and foreign capital operate in Kosovo. Therefore, based on this information, all commercial banks were part of the qualitative analysis, where in each of them was surveyed a manager. After the qualitative analysis, we had the quantitative analysis, where 100 customers were surveyed for each category of banks grouped by capital, where the sample was 200 customers of Kosovo banks.

## **5.5 Study instrument**

In this part are explained the study instrument, its reliability, the way of collecting data and the statistical tests that have been realized.

### **5.5.1 Questionnaire**

Two types of questionnaires were used in this study, as there are two groups of respondents. The first questionnaire was conducted with customers of Kosovo banks, based on quantitative analysis. The questionnaire is divided into two parts. The first part focused on demographic data, while the second part addressed the impact of digitalization of the banking system on service quality and customer satisfaction, using the polarized five-point Likert scale, where index 1 shows that respondents do not strongly agree and

index 5 indicates that they fully agree. The questionnaire was formulated based on digital products and services provided by commercial banks in Kosovo, where customers based on this have shown their quality and customer satisfaction regarding these services. So, the questionnaire contained questions in accordance with the objectives and research questions.

The second questionnaire was developed with bank employees, which is based on qualitative analysis. In this questionnaire were 5 open-ended questions in which employees express their opinion on the digitalization of the banking system and the advantages and disadvantages that this digitalization has brought to the work process. Part of this study were 20 employees of Kosovo banks, so 10 employees of banks with domestic capital and 10 employees of banks with foreign capital were surveyed.

### 5.5.2 The reliability of the instrument

Of particular importance is the reliability analysis of the questionnaire, as all analyzes are derived from it. The reliability of the measuring instrument allows us to have confidence in the interpretation and discussion of the results we have obtained, results which enable us to verify the hypotheses raised.

To measure the reliability of the instruments, we relied on the values of the Alpha Cronbach coefficient for each category of questions.

According to the table, we see that the total reliability of the instrument for all categories is  $\alpha = 0.835$ , which means that the reliability of the instrument is reliable.

The table below shows Cronbach's Alpha coefficients for each category of questionnaire that are:

*Table 2: Instrument reliability*

<b>Categories</b>	<b>Cronbach's Alpha Coefficient</b>
Digitization	0.819
Service quality	0.786
Customer satisfaction	0.901
<b>Total</b>	<b>0.835</b>

Source: Own work



### 5.5.3 The procedure of data collection

Since we had two interviewed groups and two types of questionnaires, then their distribution was made in different forms. To collect data on the quality of digital services and customer satisfaction, questionnaires created in Google Forms were distributed to customers and the data on the impact of digitalization of the banking system came electronically. Whereas the qualitative part of the questionnaires carried out with bank employees was done personally in each bank of Kosovo.

### 5.5.4 Statistical analysis

All data were analyzed through Statistical Package for the Social Sciences (hereinafter: SPSS) version 25.

Primary data were presented in tables and graphs through descriptive analyzes (mean, standard deviation, variance, minimum, maximum, and frequency). This section includes demographic data, each scale, and their basic characteristics.

To make comparisons about the quality of service and customer satisfaction, compared to banks operating in Kosovo, the crosstabulation has also been made.

Before confirming the hypotheses, the Kolmogorov-Smirnov test was performed to test whether the data were normal or not. Since the distribution is normal, correlation, simple linear regression, ANOVA and T - test were performed.

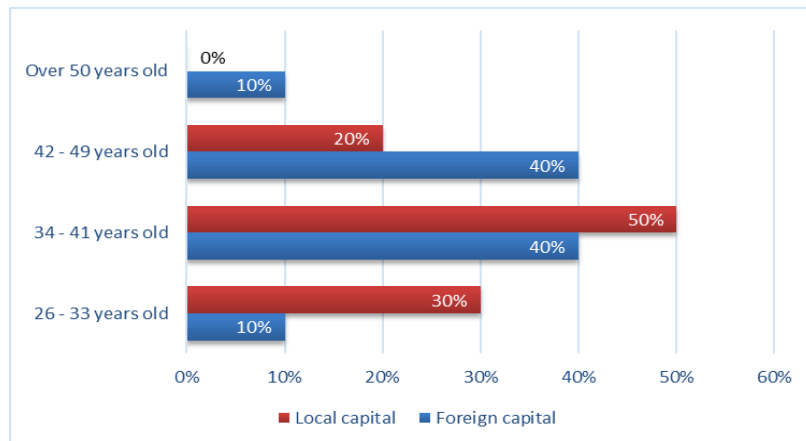
## **6 RESEARCH ON THE EFFECT OF BANKING DIGITIZATION ON THE QUALITY OF BANKING SERVICES IN KOSOVO**

### **6.1 Demographic data for banks' employees**

Part of the research were 90% male employees of the banks with local capital and 10% were female. And 80% of foreign bank employees were male and 20% were female. So, the distribution of gender was roughly the same between banks with foreign capital and local capital.

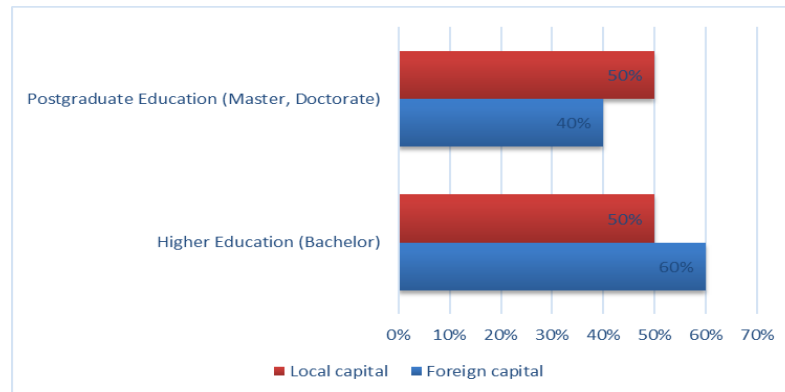
Referring to Figure 7, employees of banks with local capital who were part of the research had this age distribution: 30% were 26 - 33 years old, 50% were 34 - 41 years old and 20% belonged to the category 42 - 49 years old. The employees of foreign capital banks were of this age: 10% were 26-33 years old, 40% were 34-41 years old, 40% were 42-49 years old and 10% were older than 50 years.

Figure 7: Age of banks' employees



Source: Own work

Figure 8: Level of education of banks' employees



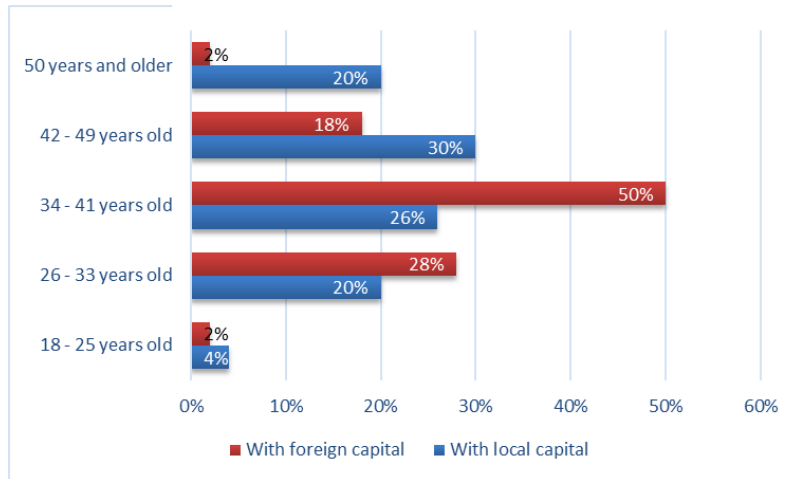
Source: Own work

Bank employees were all with higher or postgraduate education. So, based on Figure 8, the distribution of the level of education was approximately the same between the two categories of banks. 60% of employees of banks with foreign capital had a high level of education and 40% had completed postgraduate studies, while the level of education of bank employees with local capital was distributed in equal percentage between the two levels of education.

## 6.2 Demographic data of customers

Part of the research were 64% male customers of the banks with local capital and 36% were female. And 62% of foreign bank customers were male and 38% were female. So, the distribution of gender was roughly the same between banks with foreign capital and local capital.

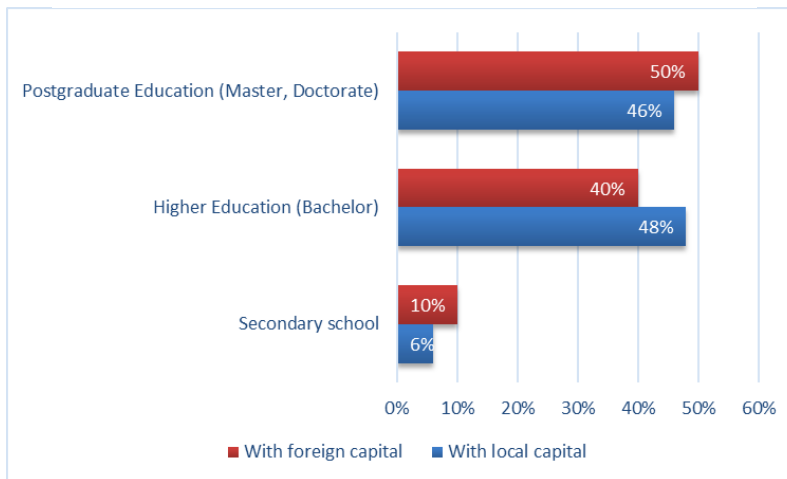
Figure 9: Age of customers



Source: Own work

Based on Figure 9, customers of banks with local capital who were part of the research had this age distribution: 4% were 18 – 25 years old, 20% were 26 - 33 years old, 26% were 34 - 41 years old, 30% belonged to the category 42 - 49 years old and 20% were older than 50 years. The customers of foreign capital banks were of this age: 2% were 18 – 25 years old, 28% were 26-33 years old, 50% were 34-41 years old, 18% were 42-49 years old and 2% were older than 50 years. Based on these results, the age distribution of customers of the two categories of banks is not the same, where younger ages are more customers of banks with foreign capital than of banks with local capital.

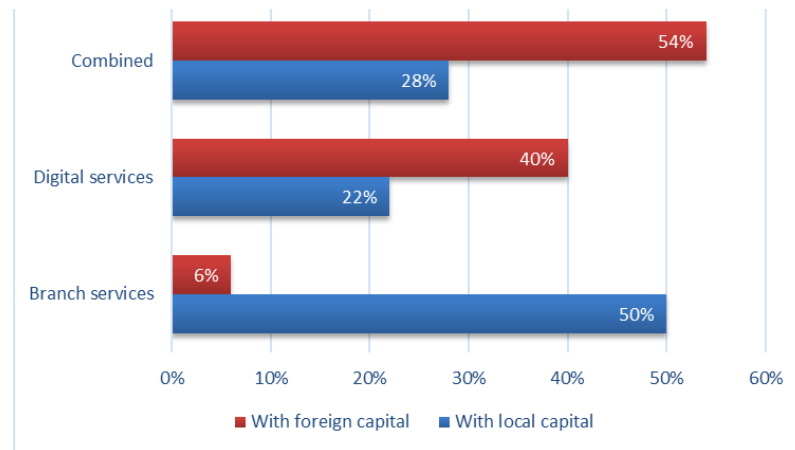
Figure 10: The level of education of customers



Source: Own work

Based on the research, referring to Figure 10, education of the customers of banks with foreign capital is secondary school 39.74%, higher education 41.03%, and postgraduate education 19.23%, on the other side, at banks with local capital is secondary school 46.15%, higher education 35.90%, and postgraduate education 17.95%. The banks with foreign capital have more qualified customers.

*Figure 11: Customers preferences on how to perform services*



Source: Own work

Referring to Figure 11, there is a difference between customers of both categories of banks in terms of preferences for the way services are performed. 54% of customers of banks with foreign capital prefer combined services, 40% prefer digital services and only 6% have stated that they prefer branch services. The opposite happened with customers of banks with local capital where 28% of them stated that they prefer combined services, 22% prefer digital services and 50% of them stated that their preferences are for performing banking services in the branch. The reason why bank customers, who were part of the study with local capital largely prefer services in the branch, is due to the fact that the age distribution of customers of banks with local capital who were part of the study is more focused on categories over the age of 40, who have not yet adapted to development of technology.

### 6.3 Analysis of quantitative research

In this section, descriptive statistics for the category of digitalization, quality of services and customer satisfaction are presented. Also, in this section is presented the verification of hypotheses through statistical tests. These presentations are presented in tabular and graphical form.

### 6.3.1 Descriptive statistics

Table 3 presents the descriptive statistics for digitalization between the two categories of banks. In total, the average of digitalization is 3.46, which means that banks are moderately digitized in Kosovo, but if we make a comparison between the two categories of banks, we notice that banks with foreign capital are more digitalized since the average customer response is high, i.e. 4.27 from the maximum 5. This means that customers of banks with foreign capital agree that the banking system of the bank where they perform services is digitalized. Meanwhile, the result of banks with local capital is significantly lower than that of banks with foreign capital, where the average is 2.65 out of a maximum of 5, which means that customers of banks with local capital do not agree that the banking system in the bank where they perform services is digitized.

*Table 3: Descriptive data on digitalization*

Descriptive Statistics								
		N	Min.	Max.	Sum	Mean	Std. Deviation	Variance
Local Capital	Digitalization	100	1.50	3.50	132.75	2.6550	0.55418	0.307
	Valid N (listwise)	100						
Foreign Capital	Digitalization	100	2.75	5.00	213.55	4.2711	0.51310	0.263
	Valid N (listwise)	100						
Total	Digitalization	200	1.50	5.00	346.30	3.4630	0.97048	0.942
	Valid N (listwise)	200						

Source: Own work

According to the total results, we see a moderately good situation of digitalization of the banking system, but this result has been influenced by banks with foreign capital, affecting the total average of the category.

The quality of digital services has resulted to be on an average level, based on average 3.23. However, the quality of services is not at the same level between the two categories

of banks, but with a significant difference between them. Based on customer responses, the best quality of digital services is provided by banks with foreign capital, given that the average quality category is 3.86, which means that the quality of digital services in banks with foreign capital is above average. This result has affected the overall result of this category, as the average quality of service for banks with local capital is low based on an average of 2.60 out of a maximum of 5. This result shows that banks with local capital do not provide good quality of digital services, especially if we compare it with the result of foreign capital banks.

Customer satisfaction is a phenomenon that is affected by the quality of services. Contrary to the fact that customer satisfaction is high above average, this satisfaction fades if we compare it between the two categories of banks. Customers of banks with foreign capital are much more satisfied with the digital services provided by the bank based on the average 3.81 than the customers of banks with local capital where the average customer satisfaction is 2.78 from the maximum 5.

*Table 4: Descriptive data on service quality*

		<b>N</b>	<b>Min.</b>	<b>Max.</b>	<b>Sum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Variance</b>
Local Capital	Service quality	100	1.50	3.63	130.25	2.6050	0.58268	0.340
	Valid N (listwise)	100						
Foreign Capital	Service quality	100	2.50	5.00	193.25	3.8650	0.61851	0.383
	Valid N (listwise)	100						
Total	Service quality	200	1.50	5.00	323.50	3.2350	0.87080	0.758
	Valid N (listwise)	200						

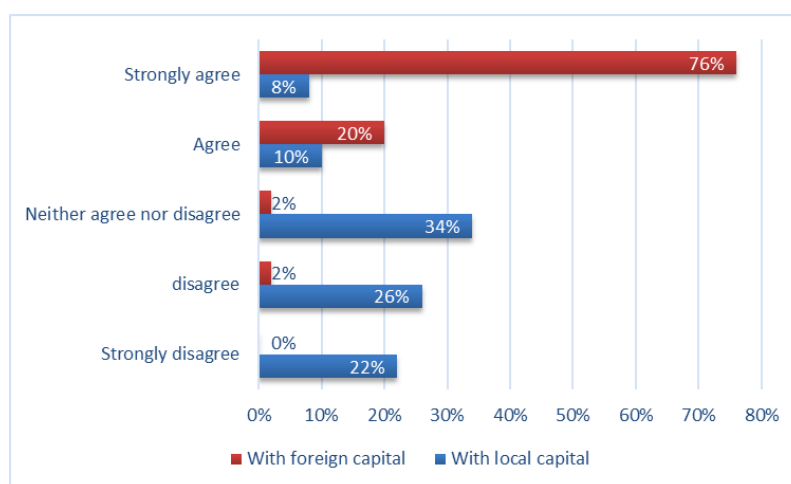
*Source: Own work*

Table 5: Descriptive data on customer satisfaction

		N	Min.	Max.	Sum	Mean	Std. Deviation	Variance
Local Capital	Customer satisfaction	100	1.88	4.00	139.38	2.7875	0.45122	0.204
	Valid N (listwise)	100						
Foreign Capital	Customer satisfaction	100	2.00	5.00	190.88	3.8175	0.73938	0.547
	Valid N (listwise)	100						
Total	Customer satisfaction	200	1.88	5.00	330.25	3.3025	0.79954	0.639
	Valid N (listwise)	200						

Source: Own work

Figure 12: The possibility of withdrawal and deposit through ATM

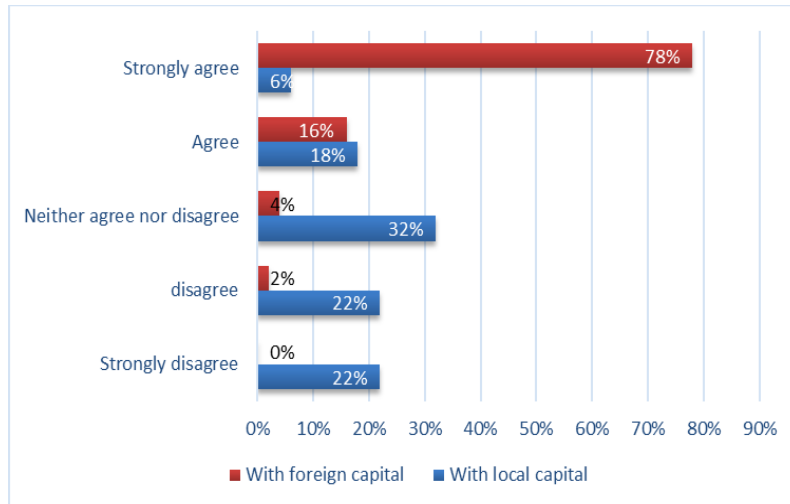


Source: Own work

Based on Figure 12, the possibility of withdrawal and deposit through ATMs is not provided in the same way between the two categories of banks. Customers of banks with foreign capital were in a significantly higher percentage of records to whom this opportunity is provided by

the bank where they are customers, compared to the customers of the banks with local capital who were in a small percentage of records to whom this service is provided in their bank

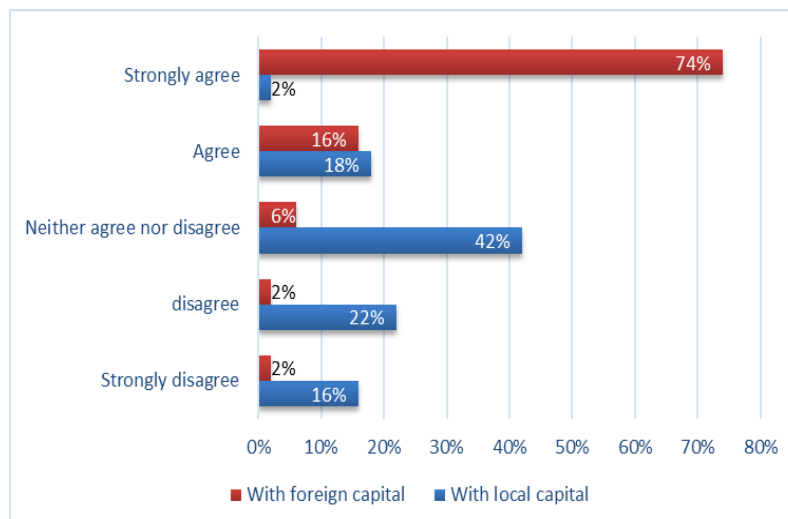
Figure 13: Providing of e-banking (performing transactions, payments, etc.)



Source: Own work

Referring to Figure 13, customers of banks with foreign capital have stated in a large percentage that they are provided e-banking to perform transactions and payments. The opposite happened with the customers of banks with local capital, only 6% fully agreed that e-banking is provided for transactions and payments.

Figure 14: Providing of mobile banking (performing transactions, payments etc.)

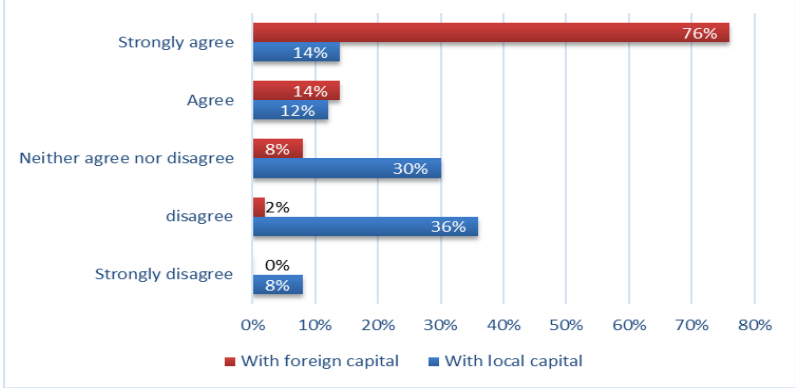


Source: Own work



Referring to Figure 14, customers of foreign-owned banks have largely stated that they have been provided mobile banking to carry out transactions and payments. The opposite happened with the customers of banks with local capital, only 2% fully agreed that mobile banking is provided for transactions and payments. According to statistics, banks with foreign capital provide mobile banking services to perform transactions and payments, unlike banks with domestic capital where the result is very low which means that digitalization is less applicable by them.

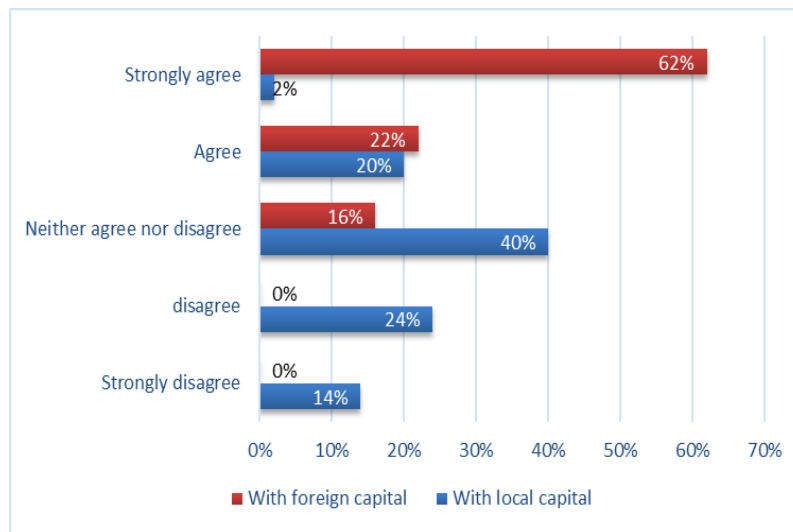
Figure 15: Performing of payments through POS (Point of Sale)



Source: Own work

According to Figure 15, payment through POS is not a service provided on an equal basis between the two categories of banks. Domestically owned banks have shown stagnation in this service showing a major change compared to foreign capital banks, which have made great progress with this service by providing customers the opportunity to make payments through POS (Point of Sale). 76% of customers of banks with foreign capital fully agreed with the provision of POS service, while customers of banks with local capital fully 14% agreed that this service is provided by the bank where they are customers. The possibility of providing telephone and internet recharge by telephone is provided by banks with foreign capital at a much higher percentage than by banks with domestic capital, this is because banks with domestic capital later began the process of digitalization, unlike banks with foreign capital which are considered to be highly digitized. Referring to Figure 16, 62% of customers of banks with foreign capital fully agreed, while only 2% of customers of banks with domestic capital fully agreed with the provision of this service by the bank. So, according to the percentages, we notice an imbalance between two categories of banks in terms of this service.

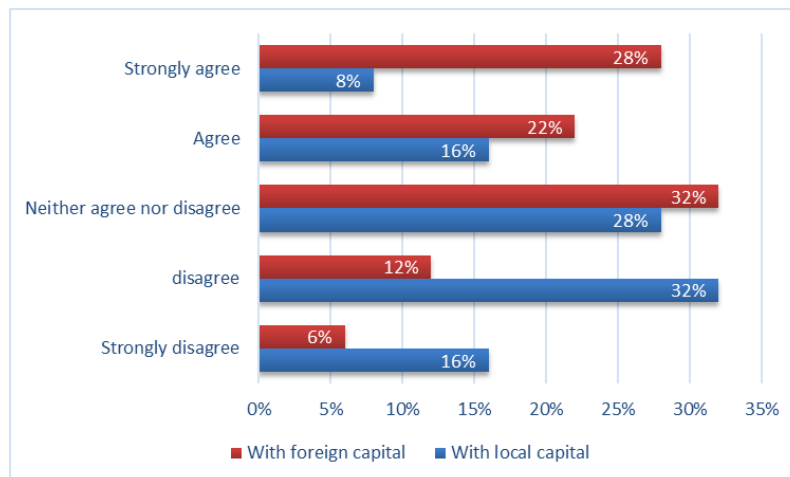
Figure 16: The possibility of re charging phone and internet from the phone



Source: Own work

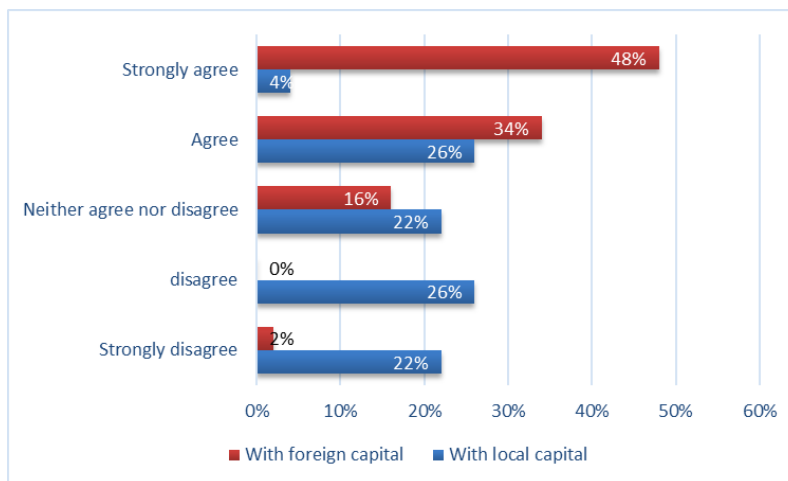
Based on Figure 17, banks with foreign capital are more oriented towards digitalization, as shown in the results of the respondents, where 28% of the respondents fully agree that they can open digitally bank accounts, in relation to the banks with local capital which are not oriented towards digitalization and this can be seen from customer responses where only 8% fully agreed on provided opportunity to open accounts digitally.

Figure 17: The possibility of opening account digitally



Source: Own work

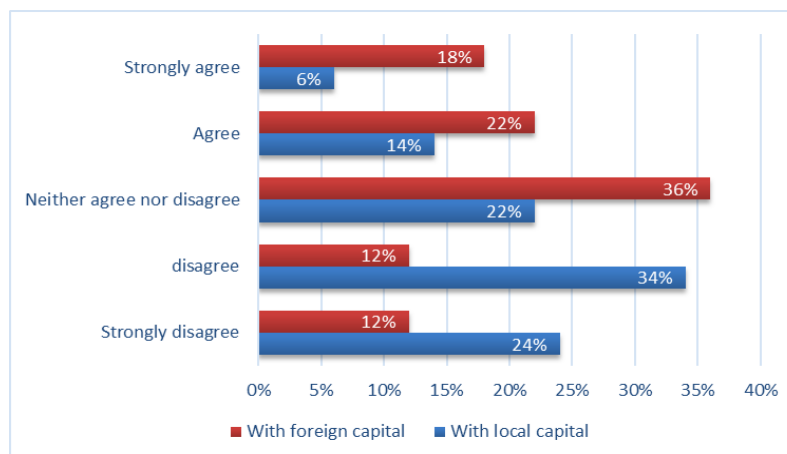
Figure 18: The possibility to apply digitally for credit, withdrawal, credit card, etc.



Source: Own work

Even for the possibility of applying for loans, withdrawals and credit cards digitally, based on results, banks with foreign capital have turned out to be more digitalized than banks with domestic capital. Referring to Figure 18, 48% of foreign bank customers fully agreed that these services are provided by the bank, while the situation in domestic banks was completely opposite to foreign capital banks, as only 4% fully agreed that the bank provides these services.

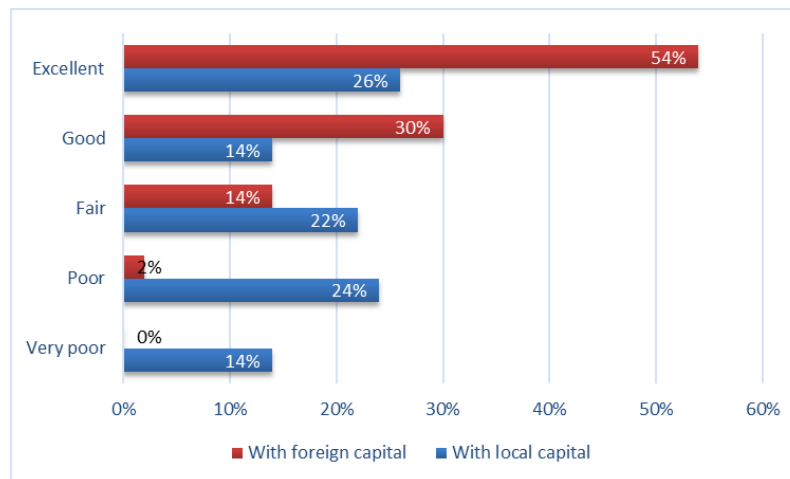
Figure 19: The possibility to terminate digitally the contracts for the services



Source: Own work

In terms of providing the digital possibility of terminating contracts for the services they provide, the situation is more favorable for banks with foreign capital, resulting to be more digitalized than banks with domestic capital. Referring to Figure 19, 18% of customers of foreign capital banks fully agreed that this service is provided by the bank, while only 6% of customers of local capital banks that were part of the research fully agreed that the bank provides these services.

Figure 20: The quality of services provided at ATM

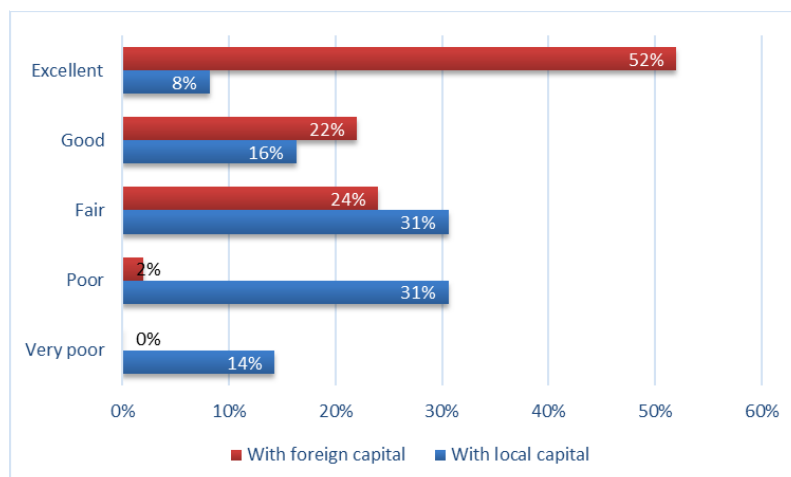


Source: Own work

The quality of services through ATMs is not provided in the same way by the two categories of banks, where the best quality according to customer responses is provided by banks with foreign capital, compared to banks with domestic capital where the quality of these services is not the same. According to Figure 20, 54% of customers of foreign banks stated that the quality of these services is excellent, while only 26% of customers of banks with local capital considered excellent services through ATMs. This gap shows that banks with foreign capital pay more attention to the quality of services provided through ATMs than those with domestic capital. This is also related to the fact that banks with foreign capital have turned out to be digitalized, a conclusion obtained from the responses of customers who were part of the research.

Referring to Figure 21, providing of e-banking services for transactions and payments is not of the same quality in both categories of banks, where the best quality of this service is provided by banks with foreign capital than in banks with domestic capital. The reason why the quality of services provided by banks with domestic capital is lower is due to the fact that banks with domestic capital later began the digitalization of the banking system, so the process of advancing these services is slower compared to banks with foreign capital who have longer experience in this field. According to the research, 52% of customers of banks with foreign capital stated that the quality of services through e-banking is excellent, while from customers of banks with domestic capital only 2% stated that the quality of these services is excellent. So, according to the percentages, there is a big difference between the two categories of banks in terms of this service.

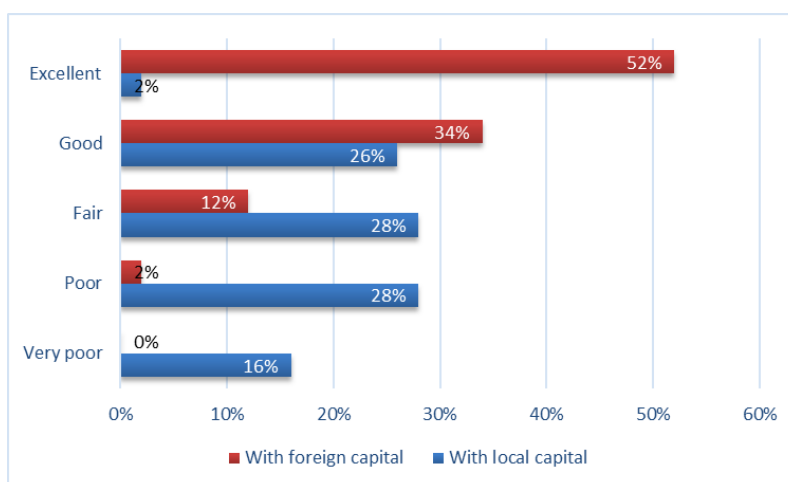
*Figure 21: Providing of e-banking services for transactions and payments*



Source: Own work

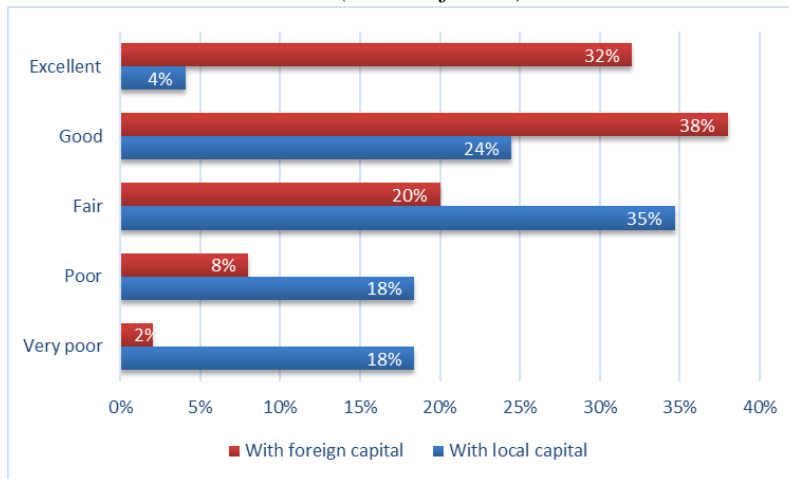
The quality of services provided by banking for transactions and payments is much higher in banks with foreign capital than in banks with domestic capital. Based on figure 22, 52% of customers of banks with foreign capital stated that the services provided through mobile banking are excellent, in contrast to customers of banks with domestic capital who are not of the opinion that the quality of these services is at level, as only 8% stated that the quality of these services is excellent.

*Figure 22: The quality of services provided by mobile banking (performing transactions, performing payments, etc.)*



Source: Own work

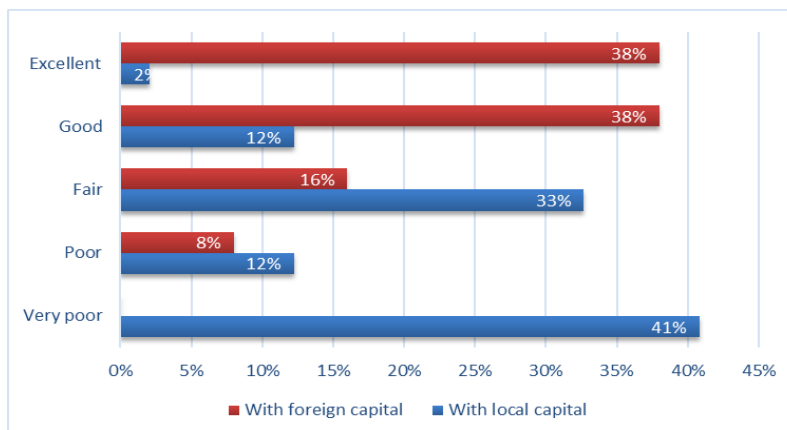
*Figure 23: The quality of services provided for performing payments through POS (Point of Sale)*



Source: Own work

Based on Figure 23, banks with foreign capital provide higher quality services to make payments through POS compared to banks with domestic capital. According to the graph, there is a large difference in the quality of this service between the two categories, where 32% of customers of banks with foreign capital stated that the quality of these services is excellent and only 4% of customers of banks with local capital had such a statement. Providing the possibility of recharging the telephone and internet by phone by banks with foreign capital is of higher quality than that of banks with domestic capital with a significant change.

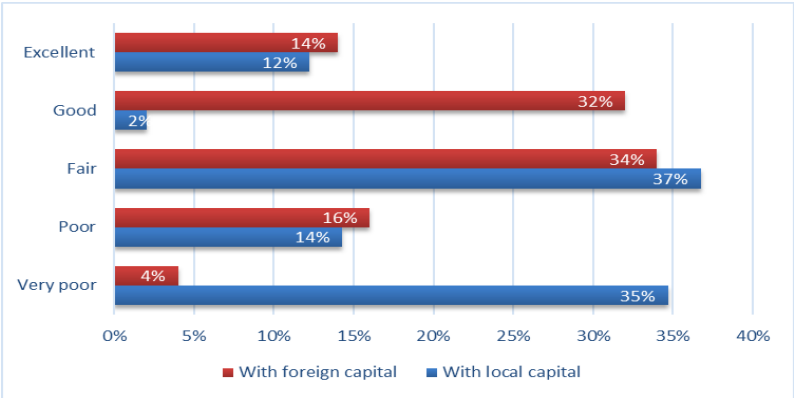
*Figure 24: The quality of services for possibility of re charging telephone and internet from the phone*



Source: Own work

According to Figure 24, 38% of customers of banks with foreign capital stated that the telephone and internet recharge service from the phone is excellent, while customers of banks with domestic capital had completely opposite statements about customers of banks with foreign capital. Only 2% of them stated that these services are excellent at the bank where they perform the services. So, in each question there is a difference between banks with foreign capital and local ones.

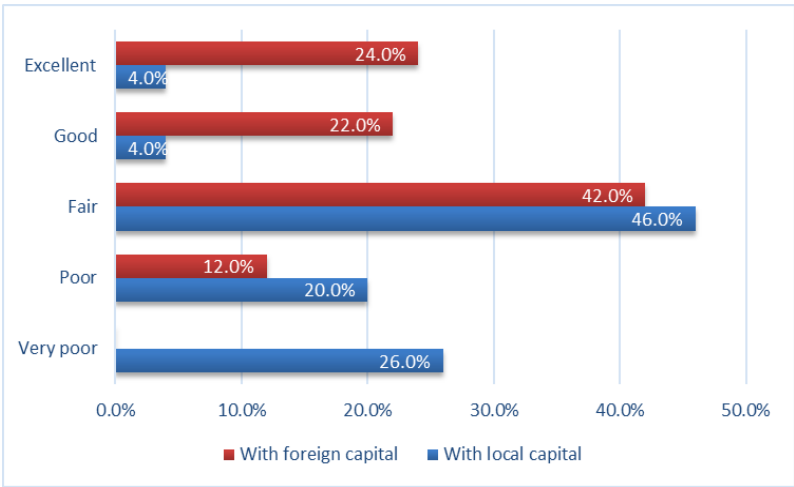
Figure 25: The quality of services for possibility to open account digitally



Source: Own work

Referring to Figure 25, the quality of services to open accounts digitally is very different between the two categories of banks, where the highest quality have the banks with foreign capital, in contrast to banks with local capital where the quality of this service is quite low.

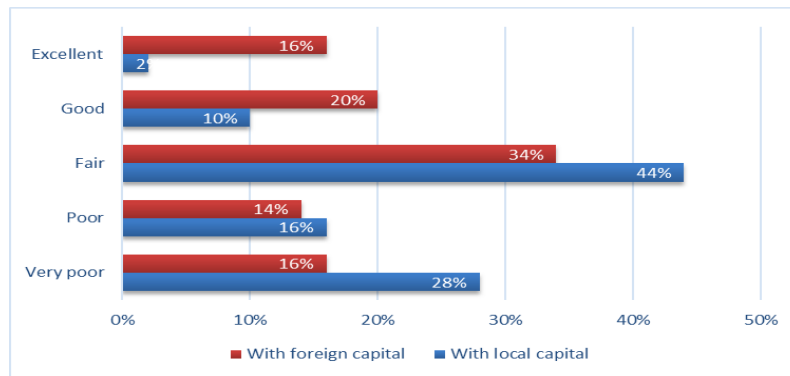
Figure 26: The quality of services for possibility of applying digitally for a loan, withdrawal, and credit card



Source: Own work

According to Figure 26, the possibility of digital application for credit, withdrawal and credit card is a very good opportunity, but it is not provided equally between the two categories of banks and they are not of the same quality level. According to statistics, 24% of customers of banks with foreign capital stated that this service is excellent and only 4% of customers of banks with domestic capital had such an attitude. So, the difference is quite noticeable and huge.

*Figure 27: The quality of services for possibility of terminating contracts digitally for services*



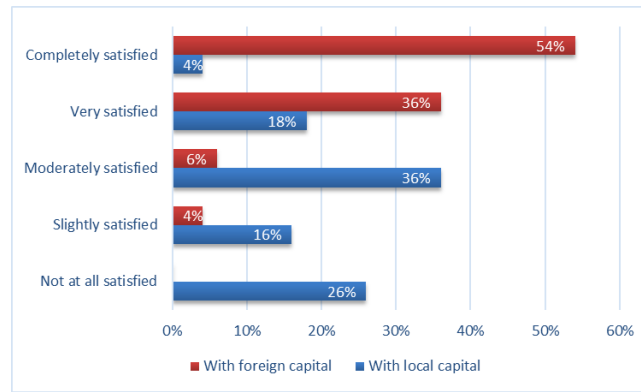
Source: Own work

The possibility of digital termination of contracts for services is one of the opportunities provided by banks in the framework of digitalization of the banking system, but as such it is not provided in satisfactory quality by any of the categories of banks, however if we compare, the best quality of this service is provided by banks with foreign capital and less by banks with local capital. Referring to Figure 27, 16% of customers of banks with foreign capital stated that this service is excellent, while only 2% of customers of banks with local capital had such an opinion.

Provision of digital services through ATMs has brought more satisfaction to the customers of banks with foreign capital than those with local capital, this is due to the fact that the quality of this service is higher in banks with foreign capital than in those with local capital. Based on figure 28, 54% of customers of banks with foreign capital were completely satisfied with the services provided. While customers of banks with local capital had opposite attitudes compared to customers of banks with foreign capital, as only 4% were fully satisfied with these services.

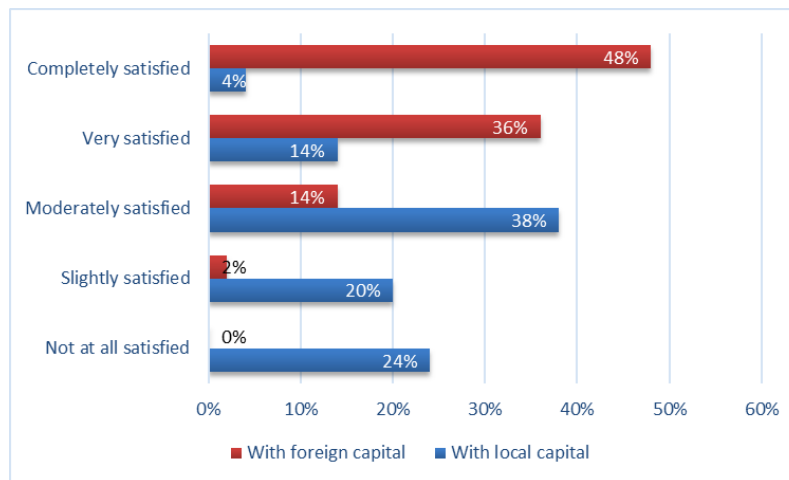


Figure 28: Customer satisfaction for digital services offered at ATM



Source: Own work

Figure 29: Customer satisfaction for services provided by e-banking (performing transactions, payments)



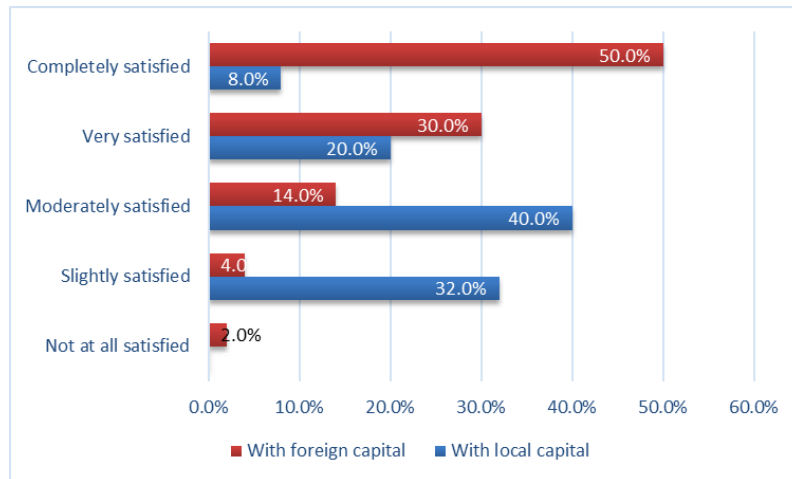
Source: Own work

Based on Figure 29, banks with foreign capital have advantages in development in digitalization, because their main branches share the experiences, also these banks have the opportunity to develop staff for innovation and creativity which is visible by the results of the responses, customers of banks with foreign capital responded to be completely satisfied with 48%, on the other hand, the customers of banks with local capital responded to be completely satisfied with 4%. So, there is a gap between the quality of service provided by e-banking between the two categories of banks.

Customer satisfaction in terms of providing mobile banking services for performing transactions and payments is not the same for customers of both categories of banks. Customers of banks with foreign capital are more satisfied with this service than customers of banks with local capital.

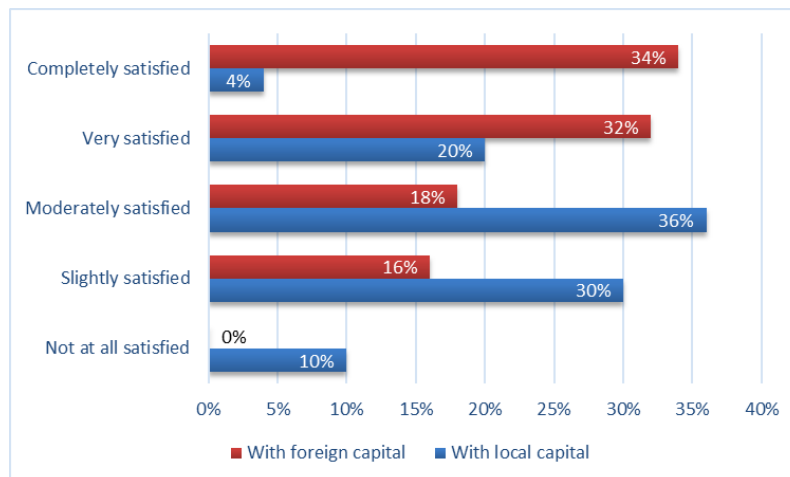
Referring to Figure 30, 50% of bank customers with foreign capital were completely satisfied with mobile banking services, while for customers of banks with local capital the result was completely opposite to that of banks with foreign capital since only 8% were completely satisfied with services of mobile banking

*Figure 30: Customers satisfaction for services provided by mobile banking (performing transactions, performing payments)*



Source: Own work

*Figure 31: Customer satisfaction for provided services to make payments through POS (Point of Sale)*

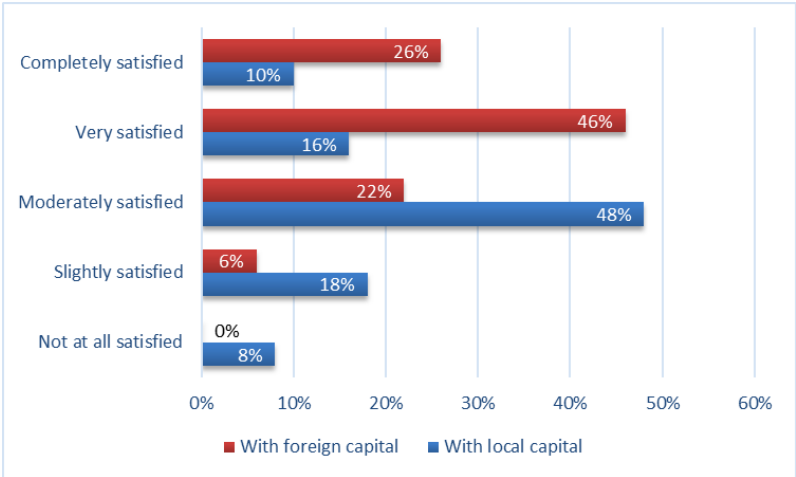


Source: Own work

Banks with foreign capital provide better quality services to make payments through POS, so customer satisfaction is much higher compared to banks with local capital. Given that banks with local capital are not very digitalized and do not provide high quality of these

services, customers satisfaction is not at a satisfactory level. Referring to Figure 31, 34% of customers of banks with foreign capital turned out to be completely satisfied with the POS payment service. Customers of banks with local capital were not satisfied as only 4% stated that they are completely satisfied with the provision of this service.

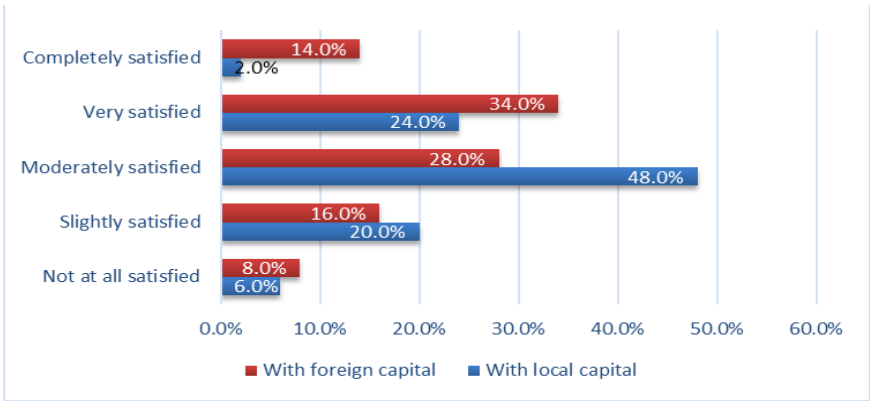
*Figure 32: Customer satisfaction with the services that provide the possibility of re charging telephone and internet from the phone*



Source: Own work

Referring to Figure 32, banks with foreign capital have advantages in development of digitalization, because their main branches share the experiences and it is obvious from the results of the responses where customers of banks with foreign capital responded to be completely satisfied with 26%, on the other hand, the customers of banks with local capital responded to be completely satisfied with 10%.

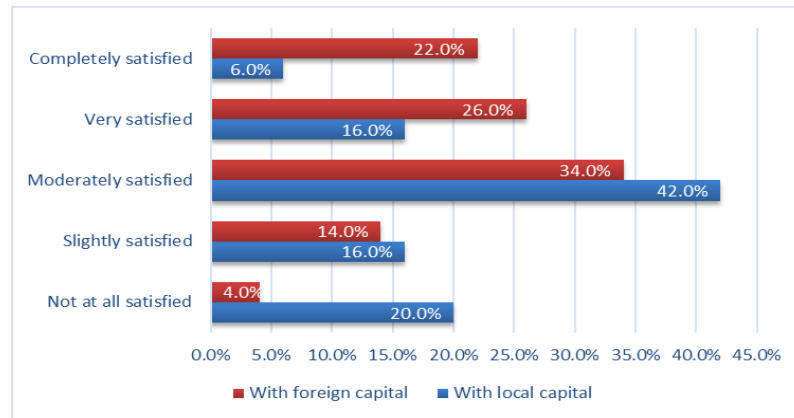
*Figure 33: Customer satisfaction with account opening services digitally*



Source: Own work

Referring to figure 33, customer satisfaction for opening accounts digitally is significantly higher in banks with foreign capital than in banks with local capital, given that 14% of customers of banks with foreign capital stated that they are completely satisfied with this service, while 2% of customers of banks with local capital were completely satisfied with this service provided by the bank.

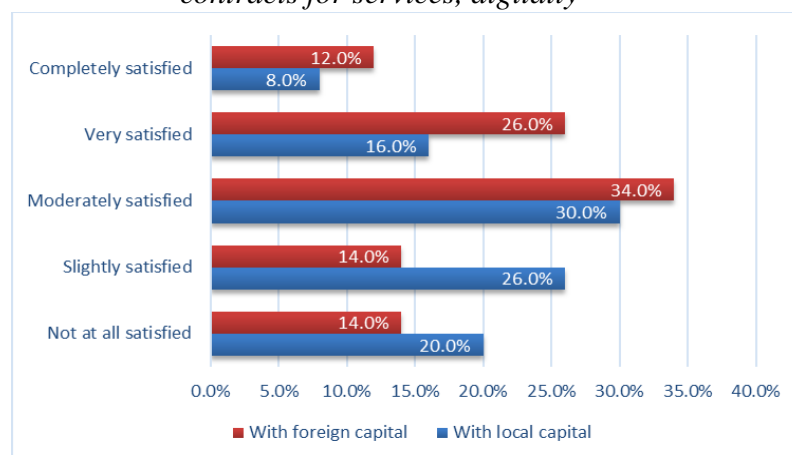
*Figure 34: Customer satisfaction with the services that provide the possibility of applying for a loan, withdrawal, credit card, digitally*



Source: Own work

Customer satisfaction for the possibility of applying digitally for credit, withdrawal and credit card, is higher among customers of banks with foreign capital than among customers of banks with local capital; this is due to the fact that banks with foreign capital are more digitalized and provide better quality so customer satisfaction is higher. Based on Figure 34, 22% of foreign bank customers were fully satisfied with this service, while only 6% of local capital bank customers who were part of the survey.

*Figure 35: Customer satisfaction for services that provide the possibility of terminating contracts for services, digitally*



Source: Own work

Referring to Figure 35, customer satisfaction for the possibility of digital termination of contracts for services, is with a small difference between the two categories of banks. The highest customer satisfaction was expressed by customers of banks with foreign capital where 12% of them were completely satisfied, while 8% of customers of banks with local capital were completely satisfied with the provision of this service.

6.3.2 Hypothesis validation

The correlation analysis method was used to test the relationship between the dependent variables (service quality and customer satisfaction) and the independent variable (digitalization). So, through correlation analysis, we will look what direction the dependent variable will take when the independent variable changes.

Table 6: Pearson's correlation coefficient

<b>Correlations</b>				
		Digitalization	Service quality	Customer satisfaction
Digitalization	Pearson Correlation	1	.720**	.627**
	Sig. (2-tailed)		0.000	0.000
	N	200	200	200
Service quality	Pearson Correlation	.720**	1	.797**
	Sig. (2-tailed)	0.000		0.000
	N	200	200	200
Customer satisfaction	Pearson Correlation	.627**	.797**	1
	Sig. (2-tailed)	0.000	0.000	
	N	200	200	200
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Own work

Before analyzing the correlation, we proved that the variables are continuous and have a normal distribution, based on the normality test Kolmogorov - Smirnov test, where  $p = .200 > 0.05$ .

The Pearson's correlation coefficient was used to measure the relationship between digitalization and service quality. Since the value of the correlation coefficient is  $r = .720$  and  $p < .001$ , means that there is a linear higher positive correlation in digitalization and service quality, so when one variable increases, so does the other. Which means that they are in direct proportion to each other.

In the other case, the dependent variable is customer satisfaction and the independent variable is digitalization. Based on the Pearson's correlation coefficient where  $r = .627$  and  $p < 0.01$ , means that there is a linear higher positive correlation between them.

**Simple linear regression to measure the impact of digitalization on service quality**

The value of R square 0.519 indicates that 51.9% of the change in the dependent variable (service quality) is explained by the independent variable (digitalization) included in the model. The remaining 48.1% of service quality is expressed by variables which are not included in the model based on any random error.

Another important value is the Durbin-Watson test, based on which there is no autocorrelation in our model based on the value 1.567.

Since there is no autocorrelation problem in our model, we have a normal distribution, also the sample included in the research is representative based on this formula:  $(200 > 50 + 8 * 1 = 58; 200 > 58)$  we say that all conditions for regression have been met.

*Table 7: Model summary<sup>b</sup> for the impact of digitalization on service quality*

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.720 <sup>a</sup>	0.519	0.514	0.60721	1.567
a. Predictors: (Constant), Digitalization					
b. Dependent Variable: Service quality					

Source: Own work

The regression table shows that even if the values of digitalization are 0, service quality will be 0.99 units. With the growth of a unit in the digitalization, service quality will increase by 0.646 units.

Model:

$$y = \beta_0 + \beta_1 * x + \epsilon$$

$y$  – Service quality

$x$  – Digitalization

$$y(\text{Service quality}) = 0.997 + 0.646 * x(\text{Digitalization})$$

The regression analysis rejects the null hypothesis and accept the alternative hypothesis, since there is positive correlation between independent variables and dependent variable. So, there is statistically significant interrelation that digitalization affects the service quality of the banking system.

Table 8: Simple linear regression coefficients for the impact of digitalization on service quality

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.997	0.226		4.410	0.000
	Digitalization	0.646	0.063	0.720	10.277	0.000

a. Dependent Variable: Service quality

Source: Own work

### Simple linear regression to measure the impact of digitalization on customer satisfaction

The value of R square 0.393 indicates that 39.3% of the change in the dependent variable (customer satisfaction) is explained by the independent variable (digitalization) included in the model. The remaining 60.1% of customer satisfaction is expressed by variables which are not included in the model based on any random error.

Another important value is the Durbin-Watson test, based on which there is no autocorrelation in our model based on the value 1.548.

Since there is no autocorrelation problem in our model, we have a normal distribution, also the sample included in the research is representative based on this formula:  $(200 > 50 + 8 * 1 = 58; 200 > 58)$  and we say that all conditions for regression have been met.

The regression table shows that even if the values of digitalization are 0, customer satisfaction will be 1.514 units. With the growth of a unit in the digitalization, customer satisfaction will increase by 0.516 units.

Table 9: Model summary<sup>b</sup> for the impact of digitalization on customer satisfaction

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.627 <sup>a</sup>	0.393	0.387	0.62619	1.548
a. Predictors: (Constant), Digitalization					
b. Dependent Variable: Customer satisfaction					

Source: Own work

Model:

$$y = \beta_0 + \beta_1 * x + \varepsilon$$

y – Customer satisfaction

x – Digitalization

$$Y(\text{customer satisfaction}) = 1.514 + 0.516 * X(\text{Digitalization})$$

The regression analysis rejects the null hypothesis and accept the alternative hypothesis, since there is positive correlation between independent variables and dependent variable. So, there is statistically significant interrelation that digitalization affects the customer satisfaction.

Table 10: Simple linear regression coefficients for the impact of digitalization on customer satisfaction

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.514	0.233		6.495	0.000
	Digitalization	0.516	0.065	0.627	7.962	0.000
a. Dependent Variable: Customer satisfaction						

Source: Own work

### The relationship between demographic variables and customer satisfaction

According to the results of the analysis, the average of 36 female customers of banks with local capital is 2.93 and that of 64 men is 2.70. This means that both men and women are not happy with the services provided by the bank.



According to descriptive results for banks with foreign capital, the average of 38 women participating in the research was 3.72 and the average of 62 men was 3.87, which means that both women and men are above average satisfied with the digital services provided by the bank. But to come to the conclusion that customer satisfaction is otherwise manifested between the sexes, we rely on t-test.

*Table 11: Descriptive statistics about customer satisfaction by gender*

Group Statistics						
	Gender		N	Mean	Std. Deviation	Std. Error Mean
Local Capital	Customer satisfaction	Female	36	2.9306	0.55938	0.13185
		Male	64	2.7070	0.36285	0.06414
Foreign Capital		Female	38	3.7237	0.75643	0.17354
		Male	62	3.8750	0.73527	0.13206

Source: Own work

Based on the gender of the customers of the two categories of banks, we note that there is no significant difference between the groups.

In the research done with the customers of the banks with local capital, the result of Sig (2 - tailed) is  $p = 0.828 > 0.05$  which shows that there is no significant difference between the average of the groups. In research conducted with customers of banks with foreign capital, the result of Sig (2 - tailed) is  $p = 0.632 > 0.05$  which shows that there is no significant difference between the group averages. Based on the importance for both categories of banks, we conclude that there is no statistically significant relationship that customer satisfaction is manifested differently between the genders.

Based on descriptive data on customer satisfaction of banks with local capital by age, the mean of 4 customers aged 18 - 25 years is 2.43, the mean of 20 customers aged 26 - 33 years is 2.97, the mean of 26 customers aged 34 - 41 years is 2.70, the mean of 30 customers aged 42 - 49 years is 2.86 and the mean of 20 customers over 50 years is 2.66. From these averages, we understand that all ages of customers of banks with local capital are approximate which means they are not satisfied with the digital services provided by the bank. While the satisfaction of customers of banks with foreign capital by age is higher than that of customers of banks with local capital where the mean of 2 customers aged 18 - 25 years is 3.87, the mean of 28 customers aged 26 - 33 years is 3.83, the mean of 50 customers aged 34 - 41 years is 3.79, the mean of 18 customers aged 42 - 49 years is 3.81

and the mean of 2 customers over 50 years is 4.00. From these averages, we understand that all ages of customers of banks with local capital are approximate which means they are satisfied above average with the digital services provided by the bank.

*Table 12: T - test for dependence of customer satisfaction by gender*

Independent Samples Test											
			Levene's Test for Equality of Variances		t-test for Equality of Means						
			F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
										Lower	Upper
Local capital	Customer satisfaction	Equal variances assumed	5.292	0.326	1.714	96.00	0.093	0.22352	0.13039	-0.0386	0.48569
		Equal variances not assumed			1.524	50.44	0.140	0.22352	0.14662	-0.0783	0.52536
Foreign capital	Customer satisfaction	Equal variances assumed	0.008	0.928	-0.699	96.00	0.488	-0.1513	0.21656	-0.5867	0.28411
		Equal variances not assumed			-0.694	74.72	0.492	-0.1513	0.21807	-0.5930	0.29039

Source: Own work

Table 13: Descriptive statistics about customer satisfaction by age

95% Confidence Interval for Mean

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
<b>Local Capital</b>	18 - 25 years old	4	2.4375	0.26517	0.18750	0.0551	4.8199	2.25	2.63
	26 - 33 years old	20	2.9750	0.62583	0.19791	2.5273	3.4227	1.88	4.00
	34 - 41 years old	26	2.7019	0.36278	0.10062	2.4827	2.9211	2.13	3.38
	42 - 49 years old	30	2.8667	0.45185	0.11667	2.6164	3.1169	2.00	3.63
	50 years and older	20	2.6625	0.33359	0.10549	2.4239	2.9011	2.00	3.25
	<b>Total</b>	<b>100</b>	<b>2.7875</b>	<b>0.45122</b>	<b>0.06381</b>	<b>2.6593</b>	<b>2.9157</b>	<b>1.88</b>	<b>4.00</b>
<b>Foreign capital</b>	18 - 25 years old	2	3.8750					3.88	3.88
	26 - 33 years old	28	3.8393	0.82396	0.22021	3.3635	4.3150	2.13	5.00
	34 - 41 years old	50	3.7950	0.66915	0.13383	3.5188	4.0712	2.50	5.00
	42 - 49 years old	18	3.8194	0.94603	0.31534	3.0923	4.5466	2.00	5.00
	50 years and older	2	4.0000					4.00	4.00
	<b>Total</b>	<b>100</b>	<b>3.8175</b>	<b>0.73938</b>	<b>0.10456</b>	<b>3.6074</b>	<b>4.0276</b>	<b>2.00</b>	<b>5.00</b>

Source: Own work

Initially, it was verified whether the data met the condition for normal distribution and homogeneity of variance between different ages. Thus, Levene's test for variance homogeneity between groups is greater than  $p > 0.05$ , which shows that variances are the same for all age groups and that the results obtained from the analysis of variance are reliable for the categories of banks (banks with foreign capital and local capital).

According to the ANOVA test, we conclude that there is no statistically significant relationship that customer satisfaction is manifested differently between ages based on  $p > 0.05$  for both categories of banks (for banks with local capital  $p = 0.335$  and for banks with foreign capital  $p = 0.999$ ).

*Table 14: ANOVA for dependence of customer satisfaction by age*

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Local capital	Between Groups	0.942	8	0.236	1.173	0.335
	Within Groups	9.035	91	0.201		
	Total	9.977	99			
Foreign capital	Between Groups	0.056	8	0.014	0.024	0.999
	Within Groups	26.732	91	0.594		
	Total	26.788	99			

Source: Own work

Based on descriptive data on the level of education of customers of banks with local capital, the average of 6 customers with secondary education was 2.50, of 48 customers with higher education (bachelor) was 2.67, and of 46 customers with postgraduate education the average was 2.94. This means that customers, regardless of their level of education, are not satisfied with the digital services provided by the bank.

Meanwhile, the levels of education of customers of banks with foreign capital were more satisfied with the digital services provided by the bank than the customers of banks with local capital. According to statistics, the average of 10 customers with secondary education was 3.72, of 40 customers with higher education (bachelor) was 3.91 and the average of 50 customers with postgraduate education was 3.70.

To verify whether there is a difference in customer satisfaction between levels of education, we rely on the ANOVA test.

Initially, it was verified whether the data met the condition for normal distribution and homogeneity of variance between different level of education. Thus, Levene's test for variance homogeneity between groups is greater than  $p > 0.05$ , which shows that variances are the same for all level of education groups and that the results obtained from the analysis of variance are reliable for the two categories of banks (banks with foreign capital and local capital).

Table 15: Descriptive statistics about customer satisfaction by level of education

Descriptive										
95% Confidence Interval for Mean										
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.	
						Lower Bound	Upper Bound			
Local capital	Customer satisfaction	Secondary school	6	2.5000	0.69597	0.40182	0.7711	4.2289	1.88	3.25
		Higher Education (Bachelor)	48	2.6771	0.45879	0.09365	2.4834	2.8708	2.00	3.88
		Postgraduate Education	46	2.9402	0.37475	0.07814	2.7782	3.1023	2.25	4.00
		<b>Total</b>	<b>100</b>	<b>2.7875</b>	<b>0.45122</b>	<b>0.06381</b>	<b>2.6593</b>	<b>2.9157</b>	<b>1.88</b>	<b>4.00</b>
Foreign capital	Customer satisfaction	Secondary school	10	3.7250	0.86331	0.38609	2.6531	4.7969	2.63	5.00
		Higher Education (Bachelor)	40	3.9188	0.60870	0.13611	3.6339	4.2036	2.00	5.00
		Postgraduate Education	50	3.7550	0.82718	0.16544	3.4136	4.0964	2.13	5.00
		<b>Total</b>	<b>100</b>	<b>3.8175</b>	<b>0.73938</b>	<b>0.10456</b>	<b>3.6074</b>	<b>4.0276</b>	<b>2.00</b>	<b>5.00</b>

Source: Own work

Table 16: ANOVA for dependence of customer satisfaction by level of education

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Local Capital	Between Groups	1.077	4	0.538	2.844	0.068
	Within Groups	8.900	95	0.189		
	Total	9.977	99			
Foreign capital	Between Groups	0.345	4	0.173	0.307	0.737
	Within Groups	26.442	95	0.563		
	Total	26.788	99			

Source: Own work

### 6.3.3 Challenges and problems of digital banking

The age of customers is a challenge that banks face in terms of digitalization of the banking system, a challenge which brings many problems in their adaptation to the

Table 7: Challenges and problems of digital banking

Challenges	Problems
<b>Age</b>	Non-adaptation
<b>Safety</b>	Customer reliability in digital services
<b>Human touch</b>	Failure to identify customer needs
<b>Lack of legislative regulation for digital services</b>	Failure to provide digital services, end to end process

Source: Own work

Providing security for digital services is a challenge for banks that affects the credibility of customers in digital services. Customers always have a dose of fear when digitally making payments, transactions about how secure the services are in this form, so banks must provide security in order for the customers to feel safe when performing digital services.

Human touch is a challenge brought about by digitalization where the problem it brings is non identifying customer needs. Digitalization has made it possible for services to avoid contact with customers, as a result of which bank staff cannot identify the potential needs that their customers may have.

Regardless that the banking system has made it possible for all services to be provided digitally, banks face a lack of legislative regulation for digital services. This challenge has brought problems as digital services are not provided in an end to end process. Despite the fact that customers perform services digitally, they are obliged to visit the bank to complete the service procedures.

6.3.4 Benefits and successes of digital banking

Digitalization has brought many benefits to both the bank and its customers. Digitalization has made it possible to save time for customers, avoiding long queues to perform a service that digitalization has enabled them to perform wherever they are.

Non value-added transactions are a benefit that has affected the orientation of employees' tasks in achieving the bank's objectives, since the focus on customer service does not develop them professionally and does not affect the achievement of the bank's objectives.

*Table 8: Benefits and successes of digital banking*

<b>Benefits</b>	<b>Success</b>
Saving time	Avoiding waiting time
Non value added transactions	Orientation of employees' tasks in achieving the bank's objectives
Environmental protection	Less gases, less printed paper.
Effectiveness	Cost reduction

Source: Own work

Even the banking systems through the digitalization of their system can affect the protection of the environment. This is due to the fact that the digitalization of services has prevented customers from visiting the bank, which means less printed paper for procedures. Also, non-attendance at banks by customers affects them less to go out and less to use their vehicles, causing less gas to be released into the atmosphere.

Efficiency is another benefit that has affected the reduction of bank costs by affecting the bank's greater profits.

## **6.4 Analysis of qualitative research**

### **6.4.1 Acceptance of digitalization of banking products by banks**

According to bank employees in Kosovo, digitalization has been relatively well received following a gradual development of digitalization of services, although there is still hesitation in their use by customers.

According to them, digitalization is always advancing in terms of use as well as the expansion and addition of new products, staying in step with the modernization of banking services according to the trends that are developing in the world.

Although in some banks the digitalization of banking products has started later with a difficult beginning acceptable to both staff and customers, especially to older people where their adaptation to digitalization is more difficult. But, over time and with the consistent and appropriate commitment of the competent staff, digitalization has been made acceptable and has become an important part of banking culture to every individual/business seeing the positive benefits that digitalization has brought.

The digitalization of products, including services in the financial institution, has been accepted as a necessity and a challenge to provide the customers with an innovative way of doing business. This digitalization has facilitated the work of the bank and made the efficiency to be higher; it has also influenced the avoidance of long queues. Given the development of technology in recent years, especially in the banking industry, the digitalization of products and services has been accepted at a satisfactory level and as a necessity of the time, both by employees and customers. According to employees, the success of digitalization of products and services also depends on the bank's strategy, adapting it to the level of preparation of employees and customers for the timely acceptance and adaptation of digital products.

The employees stressed that banks are obliged to keep pace with competition, despite the structure of customers and the bank's focus on targeting the respective customer base. According to them, banks are forced to invest in changing the various platforms of electronic products, also in the network of ATMs, so that customers have an easier access to the bank's products and services. This has certainly been accepted with admiration as an innovation and investment of time.

According to employees of some of the banks, although digitalization is still in the development stage, there is still no effect on reducing the number of staff, with exception to the impact of digitalization on reducing the staff of ProCredit Bank bringing factors that negatively affect acceptance of digitalization.



#### 6.4.2 The role of banking digitalization in increasing efficiency within the banks and increasing customer benefits

The increase in online transactions has increased the efficiency of the banks internally and customers have benefited from time management.

According to the employees, the banks, through digitalization, have increased the efficiency within the banks through electronic applications for banking services, ATM deposits, affecting the time and funds saved for customers and expenses for the bank, investment in e-banking and m-banking platform enables customers to perform services which they need, without having to visit the bank's offices, 24/7 zone with a 24/7 schedule, opening online accounts to avoid customers waiting in the branch. This enables the bank staff to have more time for business development with other groups of customers.

Employees are of the opinion that the digitalization of products, services and processes has increased the efficiency of sales, decision making, customer relations. One of the main examples is saving time in finalizing the product sales process, both for the bank and for the customer. The biggest benefit for the customer has been saving time by not coming to the bank, while the bank has increased efficiency by not dealing with all customers. Digitalization has played an important role in increasing the efficiency of bank staff, getting rid of tasks that have already been digitized and dealing with more specific and important tasks in terms of achieving the objectives of the bank. So, according to them customers have benefited efficiency in terms of shortening the waiting time to perform banking services.

The best example is the use of alternative channels, especially e-banking and m-banking where the customer base has benefited at the same time the efficiency from the possibility of performing services from home, office, but also from the most affordable prices through these channels. Therefore, these services have a positive impact on both the bank and the customer base, because they have a direct impact on efficiency and effectiveness.

#### 6.4.3 The importance that banks give to the protection of the banking system against cyber attacks

Among the most priority investments of the bank are the investments in the latest technology for protection against cyber-attacks. The bank's priority is the level of security by developing various platforms for protection against possible cyber-attacks, and this is followed by the banking system with vigilance by applying advanced systems for data storage, passwords and monitoring of suspicious transactions through the relevant departments.

As the bank is a major "source" of confidential and sensitive information, it has implemented important systems, various protocols for protection against cyber-attacks. The steps range from coding, firewalls, server protection using the human factor and all other capacities that are usable in this area.

With the digitalization of products and services, there are risks that can conditionally affect the security of the bank and customers in general. Therefore, each form of digitalization has previously been subject to risk assessments, which can be intertwined with their placement in the market.

To cover such risks, the bank establishes special committees within which various representatives of the parties are engaged, such as: Compliance, AML/CFT, risk, etc. In this case, the products or services that are intended to be digitized initially submit a request for review, evaluation and approval to the Security Committee where the representative is a CISO Officer appointed on the basis of the minimum standards of the parent bank and Basel standards. The latter is called upon to review, evaluate and eliminate the risks involved in the respective product or service. Based on the Risk Based Approach principle, it provides evaluations and recommendations on the basis of which modalities are arranged before placing it on the market. So, the issue of security for protection against cyber-attacks is given great importance, where in addition to continuous investment in security systems, organization and monitoring through relevant departments is done with extreme vigilance following market developments. It is also invested in raising the awareness of employees through training, timely information. In this regard, the bank organizes various trainings, where the staff is trained about the security of the system for protection against cyber-attacks so that these protective measures are conveyed to its customers. One of the steps taken is the control and approval by the bank staff for the transactions performed through electronic products.

#### 6.4.4 Opportunities provided by the legal and regulatory aspect of the banking system for the development of banking digitalization

The lack of adoption of the law on digital signature leaves much to be desired for the provision of opportunities because laws and regulations are the main obstacle to the development and modernization of the banking system. A concrete case is the law on digital signatures, which does not yet exist and creates obstacles in providing the sale of many products with the end-to-end process in digital channels.

So, the legislation and regulations in force provide a satisfactory level on the basis of which financial institution can harmonize existing products and develop new ones. However, digitalization is moving fast and consequently the current legislation in force has room for new interpretations and amendments so that the Regulator is provided the opportunity to draft new regulations in order to issue guidelines as efficiently and as

possible, detailed always in line with cooperation with the Kosovo Banking Association. However, the legal space provides sufficient comfort for further development of banking digitalization.

So according to employees, so far, the banking system has digitized processes, products and services at a satisfactory level and according to statistics, it can be compared with Western countries. From the legal point of view, there is a need to accelerate the legal changes that are mainly related to the acceptance of the digital signature, which is more than necessary for our banking market.

#### 6.4.5 The positive effects that have resulted from banking digitalization

The positive effects that have resulted from banking digitalization are cost reduction, time management, eliminated volume of customers waiting in the bank, increased efficiency, effectiveness, and help in keeping up the pace with modern banks. They have also indirectly affected the protection and care of the environment.

The employees stated that digitalization has made it easier for the staff to manage the work as well as increase the revenue from online services, thus reducing the interest on loans. The increase in the use of other products through digital channels has consequently increased profitability. Digitalization of products and services, in addition to the material and non-material benefits it brings to customers, also provides the bank with the opportunity to expand the range of obtaining preliminary information on the customer and the customer's anticipated behavior towards the bank and the bank channels.

The employees stated that the positive effects are numerous, such as the reduction of customer crowds in the bank offices, then the easier access of customers to banking services through products within the digitalized system, which saves time and realization of communication between businesses in the fastest time, i.e. performing faster transactions, from the business office or by phone from the place where the bank customer is located, without having to visit the bank office.

## **7 OPTIMIZATION OF THE DIGITIZATION OF BANKING SERVICES BASED ON CUSTOMER REQUIREMENTS AND KNOWLEDGE**

Based on the analysis of multiple linear regression and correlation, we conclude that the digitalization of the banking system affects the quality of service and customer satisfaction.

According to the research conducted with the customers of banks divided by capital, we realized that banks with foreign capital were more digitalized and that the quality of

service and customer satisfaction was higher than in the banks with local capital. As it turned out that digitalization affects the quality of service and customer satisfaction, we recommend that banks with local capital take steps towards sophistication of digital services, thus influencing this increasing form of service quality and customer satisfaction.

As digitalization is always advancing in terms of use, as well as expansion and addition of new products, it is recommended that banks with local capital keep pace with the modernization of banking services according to the trends being developed in the world and start digitalizing more. Although digitalization has been relatively well received following a gradual development of service digitalization, there is still reluctance to its use by customers.

Although the digitization of products, including services in the financial institution, has been accepted as a necessity and a challenge to provide the customer with innovations in the way of doing business and has facilitated the work of the bank, it has made the efficiency higher and has also affected the avoidance of long queues, customers of banks, separated by capital, have largely preferred the services to be combined as the provision of services only through digital channels makes it impossible to identify the needs and requirements of customers due to lack of customer information about the bank's products and services.

Given the development of technology in recent years, especially in the banking industry, the digitalization of products and services has been accepted at a satisfactory level and as a necessity of the time, both by employees and customers. Since the success of digitalization of products and services depends on the bank's strategy, we recommend that it be adapted to the level of preparation of employees and customers for the timely acceptance and adaptation of digital products. Local banks are obliged to maintain the pace of competition, regardless of the customer structure and the bank's focus on targeting the respective customer base. They need to invest more in changing the different platforms of electronic products, also on the ATM network, so that customers have easier access to the bank's products and services.

The digitalization of the banking system, mainly in the banks with local capital, which turned out to be less digitalized, is of special importance. The bank through digitalization increases the efficiency within the bank through electronic applications for banking services, ATM deposits, saved customer time and bank expenses. Investments in e-banking and m-banking platforms enable customers to perform services they need without having to visit the bank offices since they can open accounts online and avoid waiting at the branches. This enables the bank staff to have more time to conduct business with other groups of customers.

There are many factors that influence local banks not to be too digitalized and for customers to like the combined services. One of the main factors is the age of customers, a

challenge that banks face in relation to the digitalization of the banking system, a challenge that brings many problems in their adaptation to the digitalization of services. Older customers have a lot of difficulty with the use of technological equipment, preferring in this form more branch services. To avoid this problem, it is recommended that banks provide combined services enabling customers to choose how they want to perform the services, digitally or in the branch. In this form the problem of not adapting to age versus digitalization is avoided because they have the opportunity to choose.

Ensuring security for digital services is also a challenge for banks that affects customer reliability in digital services. Customers always have a dose of fear when digitally making payments, transactions about how secure the services are in this form, so banks need to provide security in order for the customers to feel safe when performing digital services. Therefore, to eliminate this problem, it is preferable for the customers to be provided with the possibility of selection as well, since the customers, based on the conducted research, have stated that they prefer the combined services.

Given that there is a gap between what is provided and what is required by customers, human touch is a challenge brought about by digitalization, where the problem it brings is the failure to identify customer needs. Digitalization has made it possible for services to avoid contact with customers, as a result of which bank staff cannot identify the potential needs that their customers may have. Thus by providing combined services, customers have the opportunity to choose how to perform services by enabling them in this way to obtain more information about banking products and services, as well as influencing the identification of the needs and requirements of customers.

There are many factors that influence local banks not to be too digitalized and for customers to like the combined services. One of the main factors is the age of customers, a challenge that banks face in relation to the digitalization of the banking system, a challenge that brings many problems in their adaptation to the digitalization of services. Older customers have a lot of difficulty with the use of technological equipment, preferring in this way more branch services. To avoid this problem, it is recommended that banks provide combined services enabling customers to choose how they want to perform the services, digitally or in the branch. In this way, the problem of not adapting to age versus digitalization is avoided because they have the opportunity to choose.

Also, despite the fact that the banking system has made it possible for all services to be provided digitally, banks face a lack of legislative regulation for digital services. This challenge has brought problems as digital services are not provided the completion process. Despite the fact that customers perform services digitally, they are required to visit the bank to complete the service procedures. There are many customers who do not prefer combined services, but for various reasons focus only on digital services, this

shortcoming can bring dissatisfaction to them, so it is recommended to enable the completion process.

Despite the benefits and limitations brought by the digitalization of the banking system, based on the requirements and knowledge of customers, it is recommended that banks provide combined services thus enabling customers the opportunity to choose. In this way, dissatisfaction is avoided and the digitalization of the banking system based on customer requirements and knowledge is optimized.

## **CONCLUSIONS**

According to the analysis, we conclude that as much as customers like digital services, they also like combined services, since in this form customers are more informed about the opportunities and offers provided by the bank. Bank officials also have the opportunity to better identify the needs and requirements of customers.

Comparing the responses of bank customers divided by capital, we conclude that banks with foreign capital are more digitalized, the quality of these services is higher and have a higher level of customer satisfaction, unlike banks with local capital which have been less digitized, therefore the quality of services and customer satisfaction were lower.

Based on the Pearson's correlation coefficient, we conclude that there is a linear higher positive correlation between the digitalization and service quality.

Based on the Pearson's correlation coefficient, we conclude that there is a linear higher positive correlation between the digitalization and customer satisfaction.

Based on the analysis of simple linear regression, we conclude that the digitalization of the banking system affects the quality of service.

Based on the analysis of simple linear regression, we conclude that the digitalization of the banking system affects the customer satisfaction.

Based on the questionnaire conducted with employees, we conclude that digitalization has been accepted relatively well after a gradual development of digitalization of services, although there is still hesitation in its use by customers. According to them, digitalization is always advancing in terms of use, as well as expansion and addition of new products, staying in step with the modernization of banking services according to the trends that are being developed in the world.

The digitalization of products, including services in the financial institution, has been accepted as a necessity and a challenge to provide the customers with an innovative way of doing business. This digitalization has facilitated the work of the bank and made the

efficiency to be higher; it has also influenced the avoidance of long queues. Given the development of technology in recent years, especially in the banking industry, the digitalization of products and services has been accepted at a satisfactory level and as a necessity of the time, both by employees and customers.

According to employees of some of the banks, we conclude that although digitalization is still in the development stage, there is still no effect on reducing the number of staff, with exception to the impact of digitalization on reducing the staff of ProCredit Bank, bringing factors that negatively affect acceptance of digitalization.

Based on the qualitative analysis we conclude that the increase in online transactions has increased the internal efficiency of the bank and customers have benefited from time management. According to the employees, the banks, through digitalization, have increased the efficiency within the banks through electronic applications for banking services, ATM deposits, affecting the time and funds saved for customers and expenses for the bank, investments in e-banking and m-banking platform enables customers to perform services they need, without having to visit the bank's offices, 24/7 zone with a 24/7 schedule, opening online accounts to avoid customers waiting in the branch.

We conclude that the digitalization of products, services and processes has increased the efficiency of sales, decision making, customer relations. One of the main examples is saving time in finalizing the process of selling products, both for the bank and for the customer. The biggest benefit for the customer has been saving time by not coming to the bank, while the bank has increased efficiency by not dealing with all customers.

According to the managers' responses, we conclude that the bank's priority is the level of security by developing various platforms for protection against possible cyber-attacks, and this is followed by the banking system with vigilance by applying advanced systems for data storage, passwords and monitoring of suspicious transactions through relevant departments.

As the bank is a major "source" of confidential and sensitive information, we conclude that it has implemented important systems, various protocols for protection against cyber-attacks. The steps range from coding, firewalls, server protection using the human factor and all other capacities that are usable in this area. With the digitalization of products and services, there are risks that can conditionally affect the security of the bank and customers in general. Therefore, each form of digitalization has previously been subject to risk assessments, which can be intertwined with their placement in the market.

According to the qualitative analysis, we conclude that in order to prevent the risks from cyber-attacks, the bank creates special committees within which various representatives of the parties are engaged, such as: Compliance, AML/CFT, risk, etc. In this case, the products or services intended to be digitized initially submit a request for review,

evaluation and approval to the Security Committee. Based on the principle of Risk-Based Approach, it provides assessments and recommendations on the basis of which modalities are adjusted before being launched on the market. So, the issue of security for protection against cyber-attacks is given great importance, where in addition to continuous investment in security systems, organization and monitoring through the relevant departments is done with extreme vigilance after market developments.

We conclude that the lack of adoption of the law on digital signature leaves much to be desired for the provision of opportunities because laws and regulations are the main obstacles to the development and modernization of the banking system. A concrete case is the law on digital signatures, which does not yet exist and creates obstacles in providing the sale of many products with the end-to-end process in digital channels.

So, according to employees, we conclude that so far, the banking system has digitalized processes, products and services at a satisfactory level. According to statistics, it can be compared with Western countries. From a legal point of view, there is a need to accelerate the legal changes that mainly concern the acceptance of the digital signature, which is more than necessary for our banking market.

According to qualitative analysis, we conclude that the positive effects that have resulted from banking digitalization are cost reduction, time management, eliminated volume of customers waiting in the bank, increased efficiency, effectiveness and help in keeping up the pace with modern banks. They have also had an indirect impact on the protection and care of the environment.

We conclude that digitalization has made it easier for staff to manage work as well as increase the revenue from online services, thus reducing interest on loans. Increasing the use of other products through digital channels has consequently increased profitability. Digitalization of products and services, in addition to the tangible and intangible benefits it brings to customers, also provides the bank with the opportunity to expand the range of obtaining prior customer information and anticipated customer behavior towards the bank and bank channels.

Based on the responses of employees, we conclude that the positive effects of digitalization are numerous, such as reduction of the customer crowds in the bank offices, then the easier access of customers to banking services through products within the digitalized system, which saves time and realization. of communication between businesses in the fastest time, i.e. performing faster transactions, from the business office or by phone from the place where the bank customer is located, without having to visit the bank office.

We conclude that the best example is the use of alternative channels, especially e-banking and m-banking where the customer base has benefited at the same time the efficiency from the possibility of performing services from home, office, but also from the most affordable



prices through these channels. Therefore, these services have a positive impact on both the bank and the customer base, because they have a direct impact on efficiency and effectiveness.

Before generalizing the results of this study, some limitations should be considered which do not negate its quality. The study was conducted in only one sector, namely the banking sector. Therefore, the results cannot be generalized in terms of the impact of digitalization on service quality and customer satisfaction, because working conditions and characteristics change in the banking sector compared to other categories.

Although the reasons and goals of the research were indicated during the survey, it is thought that some employees took defensive positions by not being completely honest in their responses. This may have little effect on the veracity of the responses.

Since it was impossible to examine all the effects that digitalization can bring, it is suggested to analyze the effects of digitalization even more broadly. One of them may be the impact of digitalization on environmental protection.

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## **APPENDICES**



## **Appendix 1: Povzetek (Summary in Slovenian)**

### **POVZETEK**

Razvoj informacijske tehnologije in zlasti interneta v zadnjih letih je to vplivalo na podjetja, da so spremenila svoj način poslovanja in se prilagodila tej obliki konkurence. Tehnološkega razvoj je vplival tudi na bančni sektor na Kosovu z digitalizacijo njihovega bančnega sistema in s tem prek spletnega bančništva omogočil inovacije v poslovnih procesih.

Namen magistrskega dela je raziskati vpliv digitalizacije bančnega sistema na kakovost storitev in zadovoljstvo strank ter izpostaviti prednosti in slabosti, ki jih je digitalizacija prinesla v bančni sistem.

Raziskava temelji na primarnih podatkih, ki vključujejo rezultate pridobljene preko vprašalnikov, na katere so odgovarjali managerji in stranke. Vse komercialne banke so bile del kvalitativne analize, kjer je manager v vsaki banki odgovoril na vprašalnik. Del kvantitativne analize je bilo 100 strank vsake kategorije bank, razvrščenih po kapitalu, pri čemer je bil vzorec 200 strank kosovskih bank. Po zbiranju podatkov je bila analiza podatkov opravljena s pomočjo statističnega paketa za družbene vede SPSS različice 25. Iz ugotovitev te raziskave na podlagi analiza s pomočjo regresije in korelacije sklepamo, da je digitalizacija bančnega sistema povečala kakovost storitev in zadovoljstvo strank.

Na podlagi rezultatov raziskave lahko rečemo, da so ugotovitve te študije pomembne ne le za prikaz vpliva digitalizacije bančnega sistema na kakovost storitev in zadovoljstvo strank, temveč tudi za prepoznavanje prednosti in slabosti digitalizacije, kar lahko doprinese k z izogibanju potencialnim slabostim v bančnem sistemu in zagotavljanju še boljših digitalnih storitev.

**Ključne besede:** bančni sistem, digitalizacija bančnega sistema, kakovost storitev, zadovoljstvo strank

## Appendix 2: Data from the study

*Table 1: ANOVA for digitalization and service quality*

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.938	1	38.938	105.608	.000 <sup>b</sup>
	Residual	36.133	198	0.369		
	Total	75.071	199			
a. Dependent Variable: Service quality						
b. Predictors: (Constant), Digitalization						

*Table 2. ANOVA for digitalization and customer satisfaction*

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.860	1	24.860	63.399	.000 <sup>b</sup>
	Residual	38.427	198	0.392		
	Total	63.287	199			
a. Dependent Variable: customer satisfaction						
b. Predictors: (Constant), Digitalization						

Table 3. Descriptive statistics for digitalization

Descriptive Statistics							
	N	Min.	Max.	Sum	Mean	Std. Deviation	Variance
The bank where I perform the services provides the possibility of withdrawal and deposit through the ATM	200	1	5	363	3.63	1.426	2.033
In the bank where I perform the services, e-banking is provided (performing transactions, payments etc.)	200	1	5	367	3.67	1.407	1.981
In the bank where I perform the services, mobile banking is provided (performing transactions, payments etc.)	200	1	5	363	3.63	1.338	1.791
In the bank where I perform the services, the possibility of performing payments through POS (Point of Sale) is provided	200	1	5	376	3.76	1.311	1.720
The bank where I perform the services provides the possibility of re charging phone and internet from the phone	200	1	5	359	3.59	1.248	1.557
The bank where I perform the services provides the possibility of opening the account digitally	200	1	5	311	3.11	1.254	1.574
In the bank where I perform the services, it is possible to apply digitally for credit, withdrawal, credit card, etc.	200	1	5	345	3.45	1.329	1.765
In the bank where I perform the services, it is possible to terminate digitally the contracts for the services	200	1	5	283	2.83	1.264	1.597
Valid N (listwise)	200						

Table 4: Descriptive Statistics for service quality

Descriptive Statistics							
	N	Min.	Max.	Sum	Mean	Std. Deviation	Variance
The services provided at ATMs are of the quality:	200	1	5	375	3.75	1.298	1.684
The services provided in e-banking (performing transactions, performing payments) are of the quality:	200	1	5	353	3.53	1.259	1.585
The services provided in mobile banking (performing transactions, performing payments, etc.) are of the quality:	200	1	5	346	3.49	1.273	1.620
The services provided for performing payments through POS (Point of Sale) are of the quality:	200	1	5	331	3.34	1.214	1.473
The services that provide the possibility of re charging telephone and internet from the phone are of the quality:	200	1	5	312	3.15	1.402	1.967
The services that provide the possibility of opening an account digitally are of the quality:	200	1	5	287	2.90	1.274	1.622
The services that provide the possibility of applying digitally for a loan, withdrawal, credit card is of the quality:	200	1	5	299	2.99	1.176	1.384
The services that provide the possibility of terminating contracts digitally for services, are of the quality:	200	1	5	274	2.74	1.220	1.487

Valid N (listwise)	200						
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*Table 5. Descriptive Statistics for customer satisfaction*

<b>Descriptive Statistics</b>							
	N	Min.	Max.	Sum	Mean	Std. Deviation	Variance
How satisfied you are with the digital services provided at ATMs?	200	1	5	342	3.42	1.312	1.721
How satisfied are you with the services provided in e-banking (performing transactions, payments, etc.)?	200	1	5	349	3.49	1.352	1.828
How satisfied are you with the services provided in mobile banking (performing transactions, performing payments, etc.	200	1	5	363	3.63	1.116	1.246
How satisfied are you with the services provided for making payments through POS (Point of Sale)?	200	1	5	331	3.31	1.169	1.368
How satisfied are you with the services that provide the possibility of recharging telephone and internet from the phone?	200	1	5	347	3.47	1.049	1.100
How satisfied are you with account opening services digitally?	200	1	5	313	3.13	1.031	1.064
How satisfied are you with the services that provide the possibility of applying for a loan, withdrawal, credit card, etc. digitally?	200	1	5	310	3.10	1.185	1.404
How satisfied are you with the services that provide the possibility of terminating contracts for services, digitally?	200	1	5	287	2.87	1.220	1.488

Valid N (listwise)	200						
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Table 6: The level of approval for digitalization

Digitalization		With local capital	With foreign capital	Total
In the bank where I perform the services, mobile banking is provided (performing transactions, payments etc.)	Strongly disagree	16%	2%	9%
	disagree	22%	2%	12%
	Neither agree nor disagree	42%	6%	24%
	Agree	18%	16%	17%
	Strongly agree	2%	74%	38%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>
In the bank where I perform the services, the possibility of performing payments through POS (Point of Sale) is provided	Strongly disagree	8%	0%	4%
	disagree	36%	2%	19%
	Neither agree nor disagree	30%	8%	19%
	Agree	12%	14%	13%
	Strongly agree	14%	76%	45%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>
The bank where I perform the services provides the possibility of recharging phone and internet from the phone	Strongly disagree	14%	0%	7%
	disagree	24%	0%	12%
	Neither agree nor disagree	40%	16%	28%
	Agree	20%	22%	21%
	Strongly agree	2%	62%	32%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>
The bank where I perform	Strongly disagree	16%	6%	11%

the services provides the possibility of opening the account digitally	disagree	32%	12%	22%
	Neither agree nor disagree	28%	32%	30%
	Agree	16%	22%	19%
	Strongly agree	8%	28%	18%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>
In the bank where I perform the services, it is possible to apply digitally for credit, withdrawal, credit card, etc.	Strongly disagree	22%	2%	12%
	disagree	26%	0%	13%
	Neither agree nor disagree	22%	16%	19%
	Agree	26%	34%	30%
	Strongly agree	4%	48%	26%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>
In the bank where I perform the services, it is possible to terminate digitally the contracts for the services	Strongly disagree	24%	12%	18%
	disagree	34%	12%	23%
	Neither agree nor disagree	22%	36%	29%
	Agree	14%	22%	18%
	Strongly agree	6%	18%	12%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 7. The level of quality for service quality

Service quality		With local capital	With foreign capital	Total
The services provided at ATMs are of the quality:	Very poor	14%	0%	7.0%
	Poor	24%	2%	13.0%
	Fair	22%	14%	18.0%
	Good	14%	30%	22.0%
	Excellent	26%	54%	40.0%
The services provided in e-banking (performing transactions, performing payments) are of the quality:	Very poor	16%	0%	8.0%
	Poor	28%	2%	15.0%
	Fair	28%	12%	20.0%
	Good	26%	34%	30.0%
	Excellent	2%	52%	27.0%
The services provided in mobile banking (performing transactions, performing payments, etc.) are of the quality:	Very poor	14%	0%	7.1%
	Poor	31%	2%	16.2%
	Fair	31%	24%	27.3%
	Good	16%	22%	19.2%
	Excellent	8%	52%	30.3%
The services provided for performing payments through POS (Point of Sale) are of the quality:	Very poor	18%	2%	10.1%
	Poor	18%	8%	13.1%
	Fair	35%	20%	27.3%
	Good	24%	38%	31.3%



	Excellent	4%	32%	18.2%
The services that provide the possibility of recharging telephone and internet from the phone are of the quality:	Very poor	41%	0%	20.2%
	Poor	12%	8%	10.1%
	Fair	33%	16%	24.2%
	Good	12%	38%	25.3%
	Excellent	2%	38%	20.2%
The services that provide the possibility of opening an account digitally are of the quality:	Very poor	35%	4%	19.2%
	Poor	14%	16%	15.2%
	Fair	37%	34%	35.4%
	Good	2%	32%	17.2%
	Excellent	12%	14%	13.1%
The services that provide the possibility of applying digitally for a loan, withdrawal, credit card are of the quality:	Very poor	26.0%	0.0%	13.0%
	Poor	20.0%	12.0%	16.0%
	Fair	46.0%	42.0%	44.0%
	Good	4.0%	22.0%	13.0%
	Excellent	4.0%	24.0%	14.0%
The services that provide the possibility of terminating contracts digitally for services, are of the quality:	Very poor	28%	16%	22.0%
	Poor	16%	14%	15.0%
	Fair	44%	34%	39.0%
	Good	10%	20%	15.0%
	Excellent	2%	16%	9.0%

## Customer Questionnaire

Dear Sir or Madam,

I wish you a good day!

Firstly, thank you for your time and sincerity in completing this questionnaire. Your contribution is very important in providing your answers to analyze the impact of the digitalization of the banking system on the quality of services.

The implementation of this questionnaire will be done reliably, the data from your responses will be used for analytical issues and will not be distributed.

It will take you about 5 minutes to complete this questionnaire.

This questionnaire is conducted in the framework of the master's thesis entitled "The impact of digitalization of the banking system in the quality of services of Kosovo banking system"

Thank you for your contribution.

### Demographic data:

Gender:	Female			Male	
Age:	18 - 25 years	26 - 33 years	34 - 41 years	42 - 49 years	Over 50 years
Education degree:	Primary	Secondary	Bachelor	(Master or PhD)	
You are a customer of the bank:	With foreign capital (ProCredit Bank, Raiffeisen Bank, TEB Bank, IS Bank, NLB Bank, BKT, Ziraat Bank)			With local capital (Economic Bank, Bank for Business)	

## Digitization

No.	Description	Strongly disagree	Disagree	agree nor disagree	Agree	Strongly agree
1	The bank where I perform the services provides the possibility of withdrawal and deposit through the ATM	1	2	3	4	5
2	The bank where I perform the services, provides e-banking (performing transactions, payments etc.).	1	2	3	4	5
3	The bank where I perform the services, provides mobile banking (performing transactions, payments etc.)	1	2	3	4	5
4	The bank where I perform the services, provides the possibility of performing payments through POS (Point of Sale)	1	2	3	4	5
5	The bank where I perform the services provides the possibility of recharging phone and internet from the phone	1	2	3	4	5
6	The bank where I perform the services provides the possibility of opening the account digitally	1	2	3	4	5
7	The bank where I perform the services, provides the possibility to apply digitally for credit, withdrawal, credit card, etc.	1	2	3	4	5
8	The bank where I perform the services, provides the possibility to terminate digitally the contracts for the services	1	2	3	4	5

### Service quality

No.	Description	Very poor	Poor	Fair	Good	Excellent
1	The services provided at ATMs are of the quality:	1	2	3	4	5
2	The services provided in e-banking (performing transactions, performing payments) are of the quality:	1	2	3	4	5
3	The services provided in mobile banking (performing transactions, performing payments, etc.) are of the quality:	1	2	3	4	5
4	The services provided for performing payments through POS (Point of Sale) are of the quality:	1	2	3	4	5
5	The services that provide the possibility of recharging telephone and internet from the phone are of the quality:	1	2	3	4	5
6	The services that provide the possibility of opening an account digitally are of the quality:	1	2	3	4	5
7	The services that provide the possibility of applying digitally for a loan, withdrawal, credit card are of the quality:	1	2	3	4	5
8	The services that provide the possibility of terminating contracts digitally for services, are of the quality:	1	2	3	4	5

## Customer satisfaction

No.	Description	Not at all satisfied	Slightly satisfied	Moderately satisfied	Very satisfied	Completely satisfied
1	How satisfied you are with the digital services provided at ATMs?	1	2	3	4	5
2	How satisfied are you with the services provided in e-banking (performing transactions, payments, etc.)?	1	2	3	4	5
3	How satisfied are you with the services provided in mobile banking (performing transactions, performing payments, etc.	1	2	3	4	5
4	How satisfied are you with the services provided for making payments through POS (Point of Sale)?	1	2	3	4	5
5	How satisfied are you with the services that provide the possibility of recharging telephone and internet from the phone?	1	2	3	4	5
6	How satisfied are you with account opening services digitally?	1	2	3	4	5
7	How satisfied are you with the services that provide the possibility of applying for a loan, withdrawal, credit card, etc. digitally?	1	2	3	4	5
8	How satisfied are you with the services that provide the possibility of terminating contracts for services, digitally?	1	2	3	4	5

## Employees Questionnaire

Dear Sir or Madam,

I wish you a good day!

Firstly, thank you for your time and sincerity in completing this questionnaire. Your contribution is very important in providing your answers to analyze the impact of the digitalization of the banking system on the quality of services.

The implementation of this questionnaire will be done reliably, the data from your responses will be used for analytical issues and will not be distributed.

It will take you about 5 minutes to complete this questionnaire.

This questionnaire is conducted in the framework of the master's thesis entitled "The impact of digitalization of the banking system in the quality of services of Kosovo banking system"

Thank you for your contribution.

### Demographic data:

Gender:	Female			Male	
Age:	18 - 25 years	26 - 33 years	34 - 41 years	42 - 49 years	Over 50 years
Education degree:	Primary	Secondary	Bachelor	(Master or PhD)	
You are an employee of the bank:	With foreign capital (ProCredit Bank, Raiffeisen Bank, TEB Bank, IS Bank, NLB Bank, BKT, Ziraat Bank)			With local capital (Economic Bank, Bank for Business)	

## Digitalization

1.	Can you describe how digitalization of banking products has been accepted in the bank where you work?
2.	Can you give examples that your bank through digital banking has increased efficiency within the bank, as well as increased the benefits of customers (businesses and individuals)?
3.	How much do you care about the security of your cyber-attack protection system? Describe in more detail the steps taken by the bank to avoid such a risk?
4.	How much does the legal and regulatory aspect of the banking system provide you opportunities and potential for the development of banking digitalization?
5.	Indicate the positive effects that have resulted from banking digitalization in the bank where you work?

Table 7: Pearson's correlation coefficient

<b>Correlations</b>				
		Digitalization	Service quality	Customer satisfaction
Digitalization	Pearson Correlation	1	.720**	.627**
	Sig. (2-tailed)		0.000	0.000
	N	200	200	200
Service quality	Pearson Correlation	.720**	1	.797**
	Sig. (2-tailed)	0.000		0.000
	N	200	200	200
Customer satisfaction	Pearson Correlation	.627**	.797**	1
	Sig. (2-tailed)	0.000	0.000	
	N	200	200	200
**. Correlation is significant at the 0.01 level (2-tailed).				

### LIST OF ABBREVIATIONS

- NBS - Nottingham Building Society
- TRA - Theory of reasoned action
- IDT - Innovation diffusion theory
- TPB - Theory of planned behaviour
- TAM - Technology acceptance model
- PEOU - Perceived ease of use
- PU - Perceived usefulness
- PIN - Personal identification number
- POS – Point of sale
- DOI - Diffusion of innovation
- CRR - Customer retention rate
- TTR – Time to resolution
- CSAT - Customer satisfaction