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SCHOOL OF ECONOMICS AND BUSINESS

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**E-BANKING AND M-BANKING IN KOSOVO: EFFECTS,  
CHALLENGES, AND OPPORTUNITIES**

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## **AUTHORSHIP STATEMENT**

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## LIST OF ABBREVIATIONS

**IT** – Information Technology

**KPMG** – Klynveld Peat Marwick Goerdeler

**CBK** – Central Bank of Kosovo

**M-banking** – Mobile banking

**E-banking** – Electronic banking

**KBA** – Kosovo Banking Association

**ATM** – Automated Teller Machines

**POS** – Point of Sale

**TDA** – Time Deposit Account

## **INTRODUCTION**

The need for modernizing services has grown due to economic and technological developments, the number of supplies flowing through the system, and general economic contacts with other countries. These changes in the business environment have shaped and changed customer behaviors toward using technology-driven products and services. To cope with these changes, banks have adopted their way of banking to meet customer needs. Offering technologically and electronically driven products and services became necessary for banks to survive in a competitive environment. Adopting these changes helped banks improve customer service and increase their efficiency.

Despite its short history, Kosovo's financial industry has evolved swiftly and steadily. Given that the country emerged from the war with a shattered banking sector, the current situation and developments are quite satisfactory. The first bank was established in 1999, just after the conflict. Currently, there are 11 banks in Kosovo, 9 of which have foreign capital, with a total of 199 branches and 3,518 employees. In September 1999, the first postwar commercial bank opened its doors (Central Bank of Kosovo [CBK], 2021).

The first technologically driven services in the banking industry in Kosovo were introduced in 2005 (Sadiku, 2019), initially in two banks, then spread to additional institutions two years later. The number of users and traffic volume were inevitably low initially, either because customers were hesitant to use it or because the banking market's network was inadequate. Today, most Kosovo banks focus on online banking services or payments. A growing service that gives users continuous access to their cash, allowing them to do all financial transactions without having to deal with a bank or its employees.

## **1 E-BANKING AND M-BANKING AT THE GLOBAL LEVEL AND SPECIFICALLY FOR KOSOVO**

Technological developments are fundamentally changing how services are delivered and are increasingly acting as the basis for service planning. Technologies include more than hardware such as smartphones; they also contain software (e.g., app store and applications) and information (e.g., browsing, searching, downloading, and transaction data). Technology's primary function in service strategy is to provide communication and information (Huang & Rust, 2017). Information technology (hereinafter: IT) has been dramatically fast developed and spread worldwide across all essential life and work sectors.

In the current dynamic, the use of IT in the financial industry is crucial for long-term success and short-term survival. In 2019, the global banks planned to invest in technology for around \$328billion, an increase of 2.8% compared with the previous year (Hrushka, 2019). The corresponding global banks have significantly impacted the changes in the banking sector. Over the years, the banking sector has undergone considerable modification, mainly

catalyzed by technological advancement, global market, competitiveness, and customer needs.

The banking sector is one of the critical industries that incorporated IT to offer e-banking (electronic banking) and, later, m-banking (mobile banking) services to its clients. The introduction of IT in the banking industry is helping banks first to create customer needs and then support the fulfillment of those needs through the development of technology-driven products and services. According to Chitungo and Munongo (2013) access to IT in the financial sectors is a vital requisite for employment, poverty reduction, and economic development, especially in poor and rural areas of developing countries. However, while many developed countries have successfully adopted information technology, such as e-banking and m-banking services, developing countries lag behind its benefits (Oluwagbwemi, Abah, & Achimugu, 2011).

The banking sector in Kosovo is new, with the first bank being established in 1999 (just after the war), and the banks have tried to be trendy with the recent technological developments. E-banking was introduced in 2005, followed by m-banking years later. To date, it should be considered that the bank branches are their central communication and sales channel in Kosovo, with 199 offices every 54.6 km<sup>2</sup> as of December 2021 (CBK, 2021). The number of bank branches is higher compared to countries in the region like Albania, where are 417 bank branches every 68 km<sup>2</sup> (Monitor, 2022). However, in 2018, the number of e-banking accounts in Kosovo was around 301k (KBA, 2020), or around 60% less compared with the number of e-banking accounts in Northern Macedonia (Sadiku, 2019). While m-banking yields enormous benefits, numerous scholars have found that the global adoption of mobile banking is still in its beginning stage (Laukkanen & Lauronen, 2005; Donner & Tellez, 2008).

While e-banking and m-banking services are becoming vital to banking services, in the Kosovo market, there is no official data regarding the number of m-banking accounts and their benefits. The importance of these two services is that they support banks in reducing costs, increasing bank revenues and customer outreach, and enhancing customer service by helping clients save time and do 24/7 banking conveniently. However, an analysis of the effects and challenges of e-banking and m-banking services in Kosovo has not been conducted. As a result, this study aimed to analyze and understand the current situation of IT, mainly e-banking and m-banking, in the Kosovo banking sector. Moreover, the study investigated the alignment of e-banking and m-banking services with the overall regulatory (Central Bank of Kosovo-CBK) and the bank's objectives. It examines the primary targets for increasing these services' usage, effects, and challenges. The study also investigates whether these services are used as a cost reduction and profit generation possibility or a way to increase market outreach, possibly linked with social objectives. The significant factor considered in this research is the customer attitude and reaction towards these two services.



Overall, the purpose of this master thesis was to get a better understanding of the effects of e-banking and m-banking services in banking in Kosovo, the challenges faced by banks and clients utilizing these two services, well as the alignment of technology-driven services, especially e-banking and m-banking with bank's strategies. The research goal was to identify critical challenges that should be overcome and essential factors that impact the success of these two services. Further, understanding if the bank structure and type and customer segments have a crucial role in the success and opportunities of these two services.

## **1.1 Research Objectives and Research Questions**

Through the following research questions, we will determine the effects, challenges, and opportunities of e-banking and m-banking in Kosovo.

The research questions that helped to conduct the proposed study are as follows:

1. What is the perspective of the Central Bank of Kosovo regarding IT-driven services?
2. What was the main drive for adopting the e-banking and m-banking platforms in Kosovo banks?
  - a. Is the usage of these two services linked with the customer segment?
  - b. What will be the future of these two services in Kosovo's banking sector?
  - c. Is the increase in the usage of these two services one of the banks' three-year objectives?
3. What are the sales staff's perceptions of that increase in technology-driven products and services?
  - a. What is the perception of the sales staff on e-banking and m-banking services?
  - b. What are the main challenges in selling these services/accounts to customers?
4. What are the banks' client perceptions of the use of e-banking and m-banking services?

## **1.2 Chapter Overview**

The introduction gives a brief overview to the problem, and it is followed by first chapter with the overall purpose of this master thesis and the approach to its solution, followed by research objectives and questions.

A literature review will run from the work's second to the third chapter. More specifically, the second chapter will discuss the broad concept of e-banking and m-banking, as well as the challenges these services face in developing countries. The third chapter focuses on the Kosovo case, the banking sector, and the use of e-banking and m-banking in Kosovo.

Next, the methodology approach is discussed in the fourth chapter, followed by the research design and instruments used, data collection to answer the research questions.

The fifth chapter will discuss the results, data analysis, and research findings using the statistics SPSS program and Windows office, followed by a discussion section.

Next, the concluding remarks are provided based on the analysis of the results.

Finally, the references used are presented, followed by appendix materials.

## **2 LITERATURE REVIEW**

Technological developments are strongly influencing our lives. At the same time, the ability to adapt to technology is a precondition for a country's economic growth and sustainable performance for almost all businesses. According to research (Jorgenson, 2001; Ramayah, 2005; Hanafizadeh, Behboudi, Koshksarey, & Tabar, 2014), not using technology by banks has a negative impact on income per capita, productivity and capacity development.

The financial industry is one of the early adopters of technology, providing intensive transformation. The interconnection between finance and technology, however, has a long history that evolved through three distinct periods in which finance and technology progressed together: the analog context phase, then the phase of financial digitalization from the late twentieth century (1960) up to 2008; and, a new phase of FinTech emerged worldwide in developed and developing countries after 2008 to present (Arner, Barberis, & Buckley, 2016; Alt, Beck, & Smits, 2018). Alt, Beck, and Smits (2018), claim that earlier historical perspectives can be seen differently, with the beginning of the diffusion of technology with the emergence of financial institutions before the analog era. According to them, the first bank was established in 1472, with many financial businesses following, growing the financial sector over the last centuries. Furthermore, the application of technology in banks and trading companies depended on the physical media that held the information, such as paper and coins (Alt, Beck, & Smits, 2018). The above studies give details on the evolution of financial technology with a careful analysis of the phases mentioned above.

According to Bons, Alt, Lee, and Geber (2012), IT involvement has shaped banking virtualization in the past decade, causing a shift from real money to electronic payment, replacement of physical investment books, lending cards, bank services, and online alternatives. Further, Gomber, Kauffman, Parker, and Weber (2018) explain that with the technology developments and improvements, the physical bank branches or in-person services, as the primary contact for performing retail banking and transactions, have shifted their services to digital operations performed by customers. These changes have happened through digital banking services and digital access to products and services. The point of

contact for bank customers knows days has moved from conventional retail installations to more flexible online channels (Gomber, Kauffman, Parker, & Weber, 2018).

The dramatic technology development has caused the banking industry to re-think and re-design its services over time, as does today's millennial professional future. Many banks worldwide are planning forward, considering the economic value of future generations. In a recent report, the Klynveld Peat Marwick Goerdeler (KPMG) international (2017) explains that millennials will be significant drivers of retail banking revenue in the near future, and their goals and expectations will be distinctive. KPMG international continues by saying that millennials' attributes and banking expectations will be critical for financial institutions to consider as they form their goods, services, and business models to suit their needs. Moreover, as Kreyer, Pousttchi, and Turowski (2002) state, today's technological devices are trendy. This customer attitude might be one of the drivers for adopting technologically-driven financial services and products. They continue stating that mobile device today is seen more as personal belongings/accessories (an essential part of life), making it possible for customers to access banking services anytime and anywhere. Since technology and internet penetration is evolving rapidly every day, this is creating more possibility for technologically driven financial products and services to be more and more successful.

Mahfooz (2014) in his study stated that by providing adequate services, client satisfaction has improved in Saudia Arabia. Therefore, banking through digital channels is not only the way to perform financial transactions but should be seen more as a communication channel between banks and clients, which serves the purpose of understanding and fulfilling the needs and wants of the clients in the best possible manner (Bhardwaj & Aggarwal, 2016). Yet, despite the recent developments, little is known about the current effect of e-banking and m-banking on customer behavior.

## **2.1 Concept and Recent Trends in e-banking and m-banking**

Globalization, competitiveness, and the explosive rise of IT systems gave birth to electronic banking (also known as e-banking). The new-age banking system is known as electronic banking, which offers various technology uses, including the Internet and mobile phones, evolving into a convenient self-service delivery channel. E-banking is based on automated client delivery of banking goods, information, and services via electronic channels (Kurnia, Peng, & Liu, 2010; Driga & Isac, 2014).

Many organizations have embraced this new technology to improve customer service delivery and quality while spending less money than they would have otherwise. Electronic banking is a convenient and affordable means to trade information, buy and sell goods and services from anywhere at any time, and conduct banking transactions. Additionally, it is a strategy for retaining current clients and attracting new ones to the bank (Chaimaa, Najib, & Rachid, 2021). Through its various platforms, including home banking, PC banking, Internet banking, and mobile banking, e-banking enables users to access services virtually. As a

result, several benefits are provided, including online bill payment, timely delivery, low cost, and ease of use (Driga & Isac, 2014; Chaimaa, Najib, & Rachid, 2021).

Driga and Isac (2014) based on a significant body of research, give a detailed and resourceful definition of electronic banking. According to Driga and Isac, in 1980, the term "e-banking" was used to describe a phone line access to a computer to access banking services. E-banking first appeared in New York in 1981, with major banks offering it, such as Citibank, Chase Manhattan, Chemical, and Manufactured Hanover. Later in 1983, banks in the United Kingdom began to adopt the concept of e-banking, too (Burra, 2021). E-banking allows customers, individuals, or businesses, to access accounts, conduct business, or get information on financial products and services via a public or private network, such as the Internet. In the beginning, electronic banking services were limited to viewing bank statements and paying bills online rather than providing a full transaction banking service (Shannak, 2013). Today, e-banking customers can view checking, and saving account balances, pay bills, transfer funds between accounts, request credit card advances, and order checks for faster services and many other services. As a result, it is clear that e-banking has a significant impact on increasing the efficiency and convenience of banking operations and services for customers. Customers can transact from one end of the world to another without ever making physical contact (Kurnia, Peng, & Liu, 2010; Driga & Isac, 2014; Chaimaa, Najib, & Rachid, 2021).

The rapid increase in internet usage and the shift to online transactions has resulted in the evolution of financial institutions, particularly banks, which constantly must meet modern needs to conduct operations. In other words, banks took advantage of this new "mentality" to provide their customers with improved, higher-quality services. This led to a sharp shift in the mobile services industry. The m-banking services are the most current electronic banking services. They are carried out with mobile phones or other mobile devices. M-banking differs from traditional e-banking services in providing better service, information, and system quality (Alsmadi, Shuhaiber, Alhawamdeh, Alghazzawi, & Al-Okaily, 2022). It is a new banking model that combines cutting-edge mobile technologies and intelligent access to banking systems made simple and adaptable by financial services via portable smart devices such as smartphones, personal digital assistants, and tablets (Yaseen, El Qirem, & Dajani, 2022).

Among the most significant benefits, it allows customers to conduct banking transactions more conveniently than going to banks physically, implying that m-banking has revolutionized the use of banking services because users can connect at any time and complete trading transactions at the same time. In addition, mobile electronic devices allow all users to access their accounts whenever and wherever they want (Alsmadi, Shuhaiber, Alhawamdeh, Alghazzawi, & Al-Okaily, 2022; Hanafizadeh, Behboudi, Koshksarey, & Tabar, 2014). However, it must be noted that m-banking does not support all bank functions. For example, cash can only be withdrawn from physical branch visits or automated teller machines (ATM) (Riivari, 2005).

Mallat, Rossi, and Tuunainen (2004) define m-banking as the provision and availability of banking services via mobile telecommunication devices such as mobile phones. Barnes and Corbitt (2003) explain m-banking services' strategic implications in different markets and discuss the future of m-banking services. According to Dewan (2010), m-banking services consist of viewing account balances, transferring funds from one account to another, receiving alerts, and paying bills are all standard functions. M-banking is widely regarded as a more adaptable and pervasive channel than traditional banking channels. It increases revenue for mobile service providers while decreasing bank costs by allowing users to self-serve.

Furthermore, it opens up exciting possibilities for increasing remittance flows through banks and bringing the poor and new costumers into the banking system (Dewan, 2010). Mobile services have a huge market opportunity since there are three times as many mobile phone users as online PC users, and these people are now prepared for any time, anywhere, apps that suit their lives (Riivari, 2005). According to Shaikh, Karjaluoto, and Chinje (2015) m-banking usage is associated with increased satisfaction with the bank for most users, implying that m-banking services should be an important part of banks' customer retention strategy.

## **2.2 Challenges of e-banking and m-banking in Developing Countries**

A recent study (Sandhu & Arora, 2022) reports that despite the fact that both banks and customers recognize the importance of electronic banking services in terms of lower costs and increased transaction volume, usage remains low. While developing countries such as Zimbabwe still have low adoption of internet banking in general, more developed countries such as Finland showed mature adoptions with a third popular mode of payment among customers yet found to be late adopters of such technology. In both countries, customers rely on traditional branch banking and electronic e-banking channels. This has serious implications for banks because, in the face of stiff competition and regulatory stance, they must invest heavily in technology and manpower. Besides, the marketing and promotion plan is very important for the success of e-banking and m-banking services (Lymperopoulos & Chaniotakis, 2004).

One of the major challenges in developing countries associated with using technology in banking is the ease with which bank customers accept new technological innovations. Banks spend a lot on convincing customers that new technology does not necessarily mean riskier technology but that by using the latest technology, banks can provide more secure services. Customers are more likely to accept new technology and technology-driven products or services if they see a clear benefit for them, particularly when compared to current practices. Also, technology-driven banking products and services should be available to almost all client segments, not just those interested in technological advancements (Kallanmarthodi & Vaithyanathan, 2012).

According to Rouibah, Ramayah, and May (2011), the client's attitude or feelings play a critical role in adopting new technology and technology-driven banking services, followed by norm and perceived usefulness. Conversely, Ramseook-Munhurrin and Naidoo (2011) report that clients consider four crucial service quality aspects: reliability/ responsiveness, security, ease of use, and accessibility. Furthermore, they claim that accessibility plays the most important role in the adaption of e-banking by customers, followed by user-friendliness, which is also crucial for customers.

Additionally, Yang, Jun, and Peterson (2004) share that electronic banking will succeed only customer's as highly qualitative service perceive it. Yang, Jun, and Peterson state that banks should strive for service quality differentiation to be competitive rather than trying to compete through other strategies. They concluded that improvements in responsiveness, reliability, and ease of use are necessary for broadening a loyal customer base since these factors strongly correlate with overall service quality. In this note, studies (Hanafizadeh, Behboudi, Koshksarey, & Tabar, 2014) recommend that banks try to develop and design e-banking and m-banking applications the different client segments can efficiently operate.

Banks need to understand the client's perspective on technology-driven financial products and services in general and e-banking and m-banking in particular. Since one of the objectives that banks are trying to achieve by introducing e-banking and m-banking has to do with improving client satisfaction by increasing the quality of services, e-banking and m-banking responsiveness are critical to achieving this objective. However, Ramseook-Munhurrin and Naidoo (2011) found out that customers perceive that banks can still not provide user-friendly and secure internet banking services.

Bhardwaj and Aggarwal (2016) state that customers' trust is built through satisfaction, service quality, and technology. Moreover, they relate technology with security and customer protection. Surprisingly they didn't see the application being user-friendliest as an essential factor that has a big influence on customer satisfaction. According to a study in Tunisia (Nasri, 2011) clients should have experience and knowledge about the Internet to use internet banking. The same study mentions that demographic factors and professional background are other important factors influencing the adaption of technologically driven financial products and services.

Similarly, Davis (1989) reports that users/clients should perceive technology as helpful and easy to use. By helpful Davis, means a possibility that the user improves her/his performance regarding ease-of-use functioning. Davis classifies it as a situation when the user thinks that the benefits of using technology are higher than their efforts. According to Davis, users are frequently willing to tolerate some difficulty in using a system that provides critical functionality. Although ease of use can discourage the adoption of a system that would otherwise be useful, no amount of user-friendliness can make up for a system that doesn't accomplish its job well.

Based on the study of Luarn and Lin (2005), perceived credibility influences the use of technology and positively correlates with customers' behavioral intention to use internet banking. This leads to another challenge of electronic bank usage by clients, the continuation of usage. The factors influencing clients to continue using mobile banking are system quality, information quality, and service quality (Zhou, 2013). These factors influence each other significantly; thus, they should not be seen as separated. Internet banking increases service quality, and customers perceive it as such. Abd-ElSelman, Shawky, and El-Nahas (2013) went further with their study concluding that bank reputation also impacts service quality and customer loyalty.

Trust, compatibility, relative advantage, and image significantly impact customers' behavioral intentions for electronic payment, so banks should pay special attention to these factors (Lu, Yang, Chau, & Cao, 2011). Moreover, these factors greatly impact the customer's trust in mobile banking. Trust is closely related to customer intention to use mobile banking and influences customer intentions.

Another study (Hanafizadeh, Behboudi, Koshksarey, & Tabar, 2014) revealed that the way of living is a very important factor that influences the adaption of mobile banking in Iran. This suggests that the degree to which consumers believe m-banking can be integrated into their daily routine influences their willingness to use it. The findings indicate that banks should first understand the lifestyle of their customers and their needs and expectations for financial services and products and then design and offer appropriate internet banking services. Like Lu et al. (2011), Hanafizadeh et al. found trust as another important factor affecting m-banking. They pointed out that when clients are concerned about security, they are more concerned about the bank service than the bank service about electronic devices, internet providers, or mobile operators. To overcome these challenges, Hanafizadeh et al. recommend using marketing activities as a key strategy to overcome these obstacles and gain customers' trust and loyalty. Hanafizadeh et al. found that costumers in Iran also needed to interact with the bank staff face-to-face. Such findings show that customers depend on bank staff to help them perform mobile banking transactions. Customers feel pleasure discussing their issues with the bank staff and feel more valued or respected by the bank if they interact personally with the bank staff.

Furthermore, the client's awareness of m-banking and the bank's ability to provide a system that is integrated with other bank systems influences the client's decision to continue using m-banking (Mohammadi, 2015). Mohammadi claims that in Iran, m-banking should enable customers to perform all the transactions they want through digital channels and increase the performance of the m-banking applications. In addition, Mohammadi sees client education as very important for their decision to continue using m-banking.

In the study of Mohammadi (2015), perceived risk was identified as one of the most crucial factors influencing the usage of m-banking. The author suggests that banks should invest in technology and IT systems, especially in the elements linked with security (fingerprints,

facial recognition, etc.), to convince customers that their systems are very secure. Furthermore, Mohammadi concluded that banks should inform clients that they will be compensated for any potential loss from mobile banking usage. The mobile applications, Mohammadi suggests, should have help buttons that will instruct clients how to use m-banking, and the risk of errors will be mitigated. Finally, the same author indicates that banks should invest more in marketing and promotion activities to increase customer loyalty to mobile banking.

Besides that, studies have reported many challenges that banks and clients might have faced in the adaption of e-banking and m-banking services, and these two services did have a positive impact on customers and banks' performance as well (Gaffar, 2009). Ghana clients are very interested in using mobile banking for many bank services, including basic banking services such as checking balances or transferring funds. However, the client's perception changes when using mobile banking and e-banking for more complicated transactions such as placing time deposits, getting loans, and exchanging money. In Gaffars study, regulatory and security issues are the main obstacles to mobile banking development.

According to Okibo and Wario (2014), e-banking has positively impacted the increase of Kenyan banks' customer base. Moreover, they stated that this service increased the number of bankable people, increasing market outreach for the banks on the one hand and enabling access to banking services, especially for people from remote areas. According to the author's study in Kenya, most bankers believe that e-banking has positively affected increasing number of customers.

Internet banking, especially m-banking, had a positive impact on generating new jobs and improving financial inclusion in developing countries (Munyoro, Kutesera, & Tanhara, 2017)). They stated subscriptions to m-banking transfers had increased exponentially since the services were introduced in Zimbabwe, with 1.95 million by the end of 2012 and 8.6 million by the end of the second quarter of 2016.

Moreover, internet-driven services support the banks in expanding their market outreach and increasing their profits. In Pakistan, the introduction of e-banking, despite its positive impact on cost reduction (fewer human errors, less staff needed, etc.), improved customer satisfaction and increased customer loyalty. All in all, e-banking had a positive impact on the efficiency of Pakistani banks as well as their profits. The banks have earned the benefits in the short run and have met their costs in a matter of years, if not months (Sumra, Manzoor, Sumra, & Abbas, 2011). Similarly, Hallowell (1996) found an apparent positive effect of customer satisfaction on customer loyalty and institution profitability. This finding empowers the opinion that e-banking and m-banking positively impact bank profits since they contribute positively to customer loyalty by enhancing customer satisfaction.

The speed of service delivery (speed of website), the correct technical functioning of the site, and customer data protection are key e-banking features that influence customer loyalty.



Another important e-banking factor, according to the same author, that is important for customer loyalty is banks' efficiency in managing system problems (recovery time in case of system failures) and client complaints. In this regard, banks should pay special attention to these elements (Marimon, Petnji Yaya, & Casadesus Fa, 2012).

In their research, Mohammed Al-Hawari and Tony Ward (2006) in Australian banks could not find a positive correlation between banking services provided through digital channels and banks' financial performance. However, they concluded that banking services offered through digital channels positively impact customer satisfaction. According to Sumra, Manzoor, Sumra, and Abass (2011), a case study in Pakistan banks, e-banking contributed to the increase of bank profits by impacting different areas, such as: increasing bank efficiency, reducing staff and operational costs, minimizing operational risks, etc. In addition, e-banking services helped banks increase their cliental base, which has a positive impact on the financial performance of banks.

However, studies report that e-banking and m-banking services are not matured yet, especially in developing countries. Nidhi (2016) says that in countries like India, where most people live in rural areas, most do not have full access to banking services. Thus there is a huge potential to penetrate those markets through banking services. Through e-banking and m-banking services, banks can increase their number of clients through penetration into different markets, reduce costs, and gain competitive advantages.

The pricing trend for technology and internet access, which is decreasing, enables a mass population to have access to electronic devices and the Internet (Jamaluddin, 2013). This factor increases the bank's opportunities to enlarge its market penetration through e-banking and m-banking services. However, to utilize better e-banking and m-banking services, banks should do more on client education since they see that as crucial for increasing market outreach (Ingle & Pardeshi, 2012).

Internal factors do also influence the success of e-banking and m-banking services. For example, as stated by Lympelopoulos and Chaniotakis (2004), bank employees have different perceptions regarding e-banking which might impact the success of these two services.

### **3 KOSOVO ECONOMY: MAIN CHARACTERISTICS AND TRENDS**

#### **3.1 The Banking Sector Development and Characteristics**

Kosovo's banking system began in 1999, following Kosovo's independence, resulting in a new financial sector that has expanded swiftly and is regarded as competitive with European banks. The Central Bank of Kosovo (CBK) controls Kosovo's financial system. In Kosovo, the banking industry plays an important role and is one of the primary markers of financial

and economic stability. Because Kosovo is a young nation, its economy is in transition, and the banking sector's financial market is evident and facilitated by non-market factors (Sahiti, Aliu, Sahiti, & Aliu, 2020).

The Kosovo banks provide various financial services to the country's citizens and businesses. Kosovo's banks help companies start up and grow, create more jobs, and provide their customers with better services. Additionally, banks help families reach their goals by financing homes, offering student loans, and other essential financial support (Kosovo Banking Association [KBA], 2022).

According to Kosovo Banking Association (KBA, 2022), currently, there are eleven (11) banks functioning in Kosovo's banking system, accounting for 66.4 percent of all financial assets. In Kosovo, commercial banks have several ownership arrangements, with 3,583 employees. In addition, there are two locally-held banks and nine foreign-owned banks. They provide banking accounts, loans, local and international payments, banking cards, guarantees, and online banking, among other things.

In recent years, the banking sector in Kosovo has advanced significantly in terms of electronic banking, moving from no-tech (street money changers and salaries paid in cash) to low-tech (bank salaries, use of ATMs and Debit Cards), to the start of the high-tech era (digital/online banking), with almost all banks currently engaged in some form of digital transformation. The development and growing use of electronic services are becoming the emphasis and direction of Kosovo's banking industry (Sadiku, 2019).

As of the 2021 Central Bank Annual Report (CBK, 2022), in the banking sector, there are 158 offices and 44 branch locations, ~516 ATMs, ~14,079 point-of-sale locations (POS), with ~ 2.4 million total client bank accounts (Table 1), and 537 thousand internet accessible accounts (Table 1) to banking services. According to Sadiku (2019), banks must meet their client's demands, and therefore there has been a rapid increase in the availability of electronic payment instruments. Although Kosovo's banks have the necessary infrastructure, they lack creative vision and adaptability. Most transactions are still completed at the bank rather than through e-banking, even though banks have started to spend significantly on digital, it is still not the primary channel for customer connection and service. Client onboarding, account opening, and loan applications are completed in person at the bank rather than online due to the lack of digital signature regulation implementation.

*Table 1: Number of Bank accounts in Kosovo for residential and non-residential populations (CBK, 2022)*

Description of accounts	Total client accounts			Internet accessible accounts		
	2019	2020	2021	2019	2020	2021
<b>Client accounts (1+2)</b>	2,152,128	2,292,172	2,384,742	337,698	411,346	537,733
<b>1-Resident accounts (a+b) (%)</b>	98.49%	98.57%	98.57%	97.96%	98.22%	98.50%
<b>a-Individual (%)</b>	92.77%	92.71%	92.97%	84.57%	86.63%	87.98%
<b>b-Business (%)</b>	7.23%	7.29%	7.03%	15.43%	13.37%	12.02%
<b>2-Non-resident account (C+D) (%)</b>	1.51%	1.43%	1.41%	2.04%	1.78%	1.50%
<b>C-Individual (%)</b>	98.68%	98.79%	98.99%	93.16%	93.66%	97.83%
<b>D-Business (%)</b>	1.32%	1.21%	1.01%	6.84%	6.34%	2.17%

*Source: CBK (2022).*

According to Jukan, Babajić and Softic (2017), only 51.65% of Kosovo's population in 2014 had a bank account, which is very low compared with some of the countries in the region (Croatia 87.5%, Serbia 83.7%, Northern Macedonia 79.4%, etc.). Moreover, Kosovo does not have any strategy for improving financial inclusion. They stated that the government should take the lead by creating appropriate legal infrastructure for internet banking products and services, generating interest for commercial banks to invest in that direction.

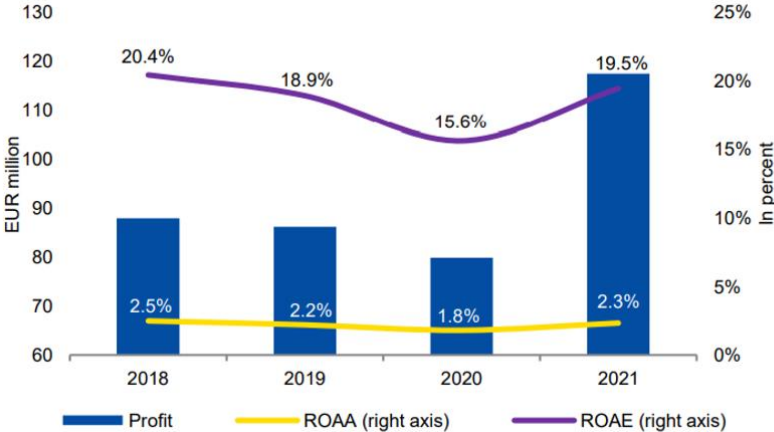
In terms of innovative solutions, banks in Kosovo fall behind Estonia and its surrounding nations (Sadiku, 2019). New technologies, including biometric identification, NFC digital wallets, cloud computing adoption, robo-advice, big data-driven credit scoring, data profiling, and other innovative solutions in the banking sector have not yet been implemented by banks in Kosovo. The reasons range from a lack of legal infrastructure to a risk-averse culture.

The banking industry is the most stable, well-capitalized, and liquid sector in Kosovo's economy (Sadiku, 2019). As reported by the Central Bank of Kosovo (CBK, 2022) in December 2021, the ratio of non-performing loans to total loans fell to 2.3 percent, while the value of non-performing loans fell by 2.6 percent compared to the previous year. With a non-performing loan rate of 2.3 percent, the banking sector in Kosovo continues to have the highest loan portfolio quality. In contrast, the banking sectors in Montenegro and Albania have the highest rates of non-performing loans, respectively, at 6.8 percent and 5.7 percent (CBK, 2022).

In recent years, the banking industry in Kosovo has been one of the most profitable in Southeastern Europe, with a return on equity of about 20 percent (Deuber, 2018). According to the latest reports (CBK, 2022), the Return on Average Assets (ROAA) and Return on Average Equity (ROAE) reached 2.3% and 19.5%, respectively, changing the decreasing trend of the previous three years and indicating a rise in profitability (Figure 1). The capital adequacy ratio for the banking system in Kosovo is 15.3 percent, down from 17.4 percent in the previous year but still higher than the regulation minimum of 12 percent. Despite the difficulties the COVID-19 epidemic presented, the banking industry ended 2021 with a favorable financial outcome.

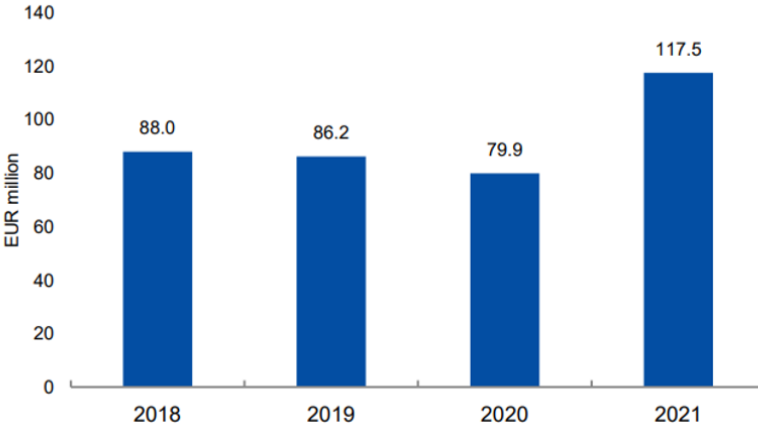
Deposits make up 82.2% of the overall liabilities in the banking industry, which dominates the liability structure. Household deposits make up most deposits in the banking industry, accounting for 68.7% of all deposits, while private sector business deposits make up 23.1% of all deposits (CBK, 2022). The net profit in 2021 was EUR 117.5 million (Figure 2), up 47.1% from the previous year (CBK, 2022).

Figure 1: Profitability indicators of the banking sector in Kosovo (CBK, 2022)



Source: CBK (2022).

Figure 2: Kosovo Bank sector Net profit, EUR million (CBK, 2022)



Source: CBK (2022).

Even though Banks in the last five years managed to increase their assets by around 47%, their number of employees remained stable (CBK, 2021a). Moreover, during 2016-2020, their number of physical branches decreased by around 19%. These two indicators show that banks are increasing their focus on using technology for providing their financial products and services. The usage of technology-enabled banks increases their efficiency and utilizes better internal capacities.

### 3.2 Kosovo's Population and Economy

According to the Kosovo Agency for Statistics (Kosovo Agency of Statistics [KAS], 2022), the total population of Kosovo by the end of 2021 was around 1.7 million. According to the same report, Kosovo has a favorable natural population growth (+ 14391 in 2021). However, due to emigration trends in 2021, the total population of Kosovo decreased by 24,215 persons. It is estimated that most of the population (around 61%) lives in rural areas (KAS, 2022a), and the life expectancy is 76.7 years. As shown in Table 2 below, from 2011 until 2021 (KAS, 2022a), Kosovo's population was relatively steady, mainly due to the population's emigration.

*Table 2: The population of Kosovo by years and Natural Increase (KAS, 2022a)*

Years	Total Population	Changes in %
2011	1,798,645	
2012	1,815,606	0.94%
2013	1,820,631	0.28%
2014	1,804,944	-0.86%
2015	1,771,604	-1.85%
2016	1,783,531	-0.67%
2017	1,798,506	0.84%
2018	1,795,666	-0.16%
2019	1,782,115	-0.75%
2020	1,798,186	0.90%
2021	1,773,971	-1.35%

*Source: (KAS, 2022a)*

According to the Statistical yearbook 2022, Kosovo's population is quite balanced (KAS, 2022a), with 50.3% males and 49.7% females, while in terms of aging, around 71% of the population is below 40 years old. Based on the latest population records as of 2022 (Table 3), the aging group between 15-19 years has the biggest participation in the total population, with around 10%, or 174,932 people, followed by the age group 20-24-year-old (9.28%) and 25-29 years old (8.12%). The population between 15-30 years old (Table 3) participates with around 27% of Kosovo's total population. Kosovo's working force (Table 3) engages about 55.21% of the country's total population. It must be noted that the reported percentage from the table below excludes the working force of the population falling under 18 and 19 years old (which falls under the aging group 15-19).

Table 3: Kosovo Population by Age Group – Statistical yearbook 2022 (KAS, 2022a)

Age Group	Population	Percentage per Age Group
Under 15	502,678	28.89%
15-19	174,932	10.05%
20-24	161,467	9.28%
25-29	141,268	8.12%
30-34	130,542	7.50%
35-39	124,912	7.18%
40-44	108,142	6.22%
45-49	94,988	5.46%
50-54	80,625	4.63%
55-59	65,539	3.77%
60-64	53,048	3.05%
+65	101,684	5.84%

Source: (KAS, 2022a)

Kosovo has the highest population density in the region, with around 163.4 per 1 m<sup>2</sup>. The following country with the highest population density in Turkey (107.7 per 1 m<sup>2</sup>), Albania (99.1 per 1 m<sup>2</sup>), Serbia (90.5 per 1 m<sup>2</sup>), Bosnia and Hercegovina (68.2 per 1 m<sup>2</sup>), and Montenegro (45.7 per 1 m<sup>2</sup>) (Eurostat, 2021). The population density in the European Union is 109 per 1 m<sup>2</sup>, much lower than in Kosovo. Kosovo's population is much younger compared with neighboring countries. As we can see in table 4, the population of Albania of 65+ is around 15% of the total population (INSTAT, 2022), Montenegro is 16% of the total population (MONSTAT, 2022), the population of 65+ in North Macedonia is 17.2% (MAKSTAT, 2022), Serbia 17.4% (PBC, 2022). In contrast, Kosovo has only 5.84% of its population above 65 years old (KAS, 2022a). As we can see in table 4, Kosovo has the highest percentage of the population up to 14 years old (28.9%), followed by Montenegro (17.9%), North Macedonia (17%), Albania (16.3%) and Serbia (14.3%). On the other hand majority of the Serbian population is between 14-65 years old (68.3%), followed by Albania (68%), Montenegro (66.1%), North Macedonia (65.9%), and Kosovo (65.3%). From the given data, we can conclude that Kosovo has the youngest population meanwhile Serbia has the highest work force.

Table 4: Population 65+ years old in region (INSTAT, 2022; MONSTAT, 2022; MAKSTAT, 2022; PBC, 2022; KAS, 2022a)

Age group	Kosovo	Albania	Montenegro	North Macedonia	Serbia
<b>0-14</b>	502,678	456,088	110,803	311,347	1,025,278
<b>15-64</b>	1,135,463	1,898,279	408,032	1,210,035	4,911,268
<b>65+</b>	101,684	439,225	98,848	315,331	1,250,316
<b>Total</b>	1,739,825	2,793,592	617,683	1,836,713	7,186,862

Source: (INSTAT, 2022; MONSTAT, 2022; MAKSTAT, 2022; PBC, 2022; KAS, 2022a)

Demographic information regarding education is presented in the following table (table 5). As we can see from table 5, the number of students up to the bachelor level dropped from

427,057 in 2014/15 to 377,959 in 2021/22, which is around – 13.3%. In terms of percentage, in 2014/15, around 24% of the population were students (in primary school, secondary school, and University), and in 2021/2022 dropped to 21% (table 5). Students in primary school between the academic year 2014/15 to 2021/22 had the highest drop of around - 49,220 or – 18%. However, we have a positive trend regarding students in Master (table 5), with an increase of around 2,741 or 32% in 2020/21 compared with 2014/15. There are no data regarding the number of Ph.D. students.

*Table 5: Education in Kosovo (KAS, 2022a; KAS, 2021)*

Education	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19	2019/ 20	2020/ 21	2021/ 22
Primary School	273,649	263,779	255,093	247,614	243,177	237,959	229,664	224,429
Secondary school	84,188	88,204	93,006	91,643	86,093	79,545	74,694	71,141
Bachelor's degree	69,220	120,429	123,988	110,137	104,579	73,517	95,335	82,389
Total up to Bachelor	427,057	472,412	472,087	449,394	433,849	391,021	399,693	377,959
% of the total population	24%	26%	26%	25%	24%	22%	22%	21%
Master	8,642	15,607	17,112	10,692	13,472	9,593	11,383	
PhD	-	-	-	-	-	-	-	-

*Source: (KAS, 2022a; KAS, 2021)*

Kosovo has a population of 1.8 million people (KAS, 2022a), and the nominal GDP in 2021 was around 7.9 billion EUR (CBK, 2022b). According to the Kosovo Agency of Statistics, Kosovo's economic growth in 2021 was 10.7% (KAS, 2022b). Conversely, CBK concluded that the inflows from the diaspora do participate with around 39% of the country's GDP (CBK, 2022a). Kosovo is classified as a lower-middle-income economy by the World Bank, with a GDP per capita ranging between US\$1,006 and US\$3,987. In 2021 the income per capita is around 4,986.6 USD (The World Bank, 2022), while the average salary in the public sector in 2021 was 612 EUR and in the private sector 419EUR (KAS, 2022c).

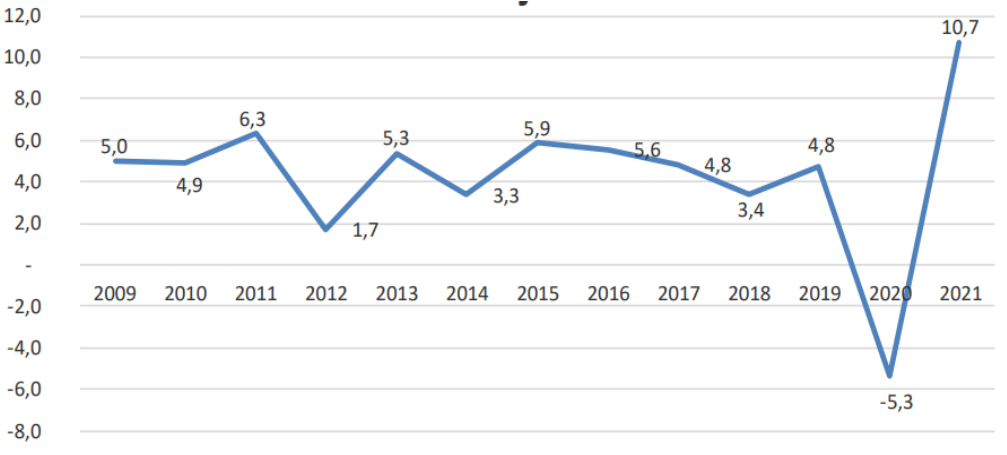
In 2021, the following economic activities experienced real growth: hotels and restaurants (34.7%), wholesale and retail trade, vehicle and motorcycle repair (18.8%), transportation and storage (14.3%); manufacturing industry (10.6%); construction (8.8%), administrative and support activities (8.5%), art, entertainment, and recreation (8.0%), professional, scientific, and technological activities (6.7%), education (6.6%), financial and insurance activities (6.2%), and so on (KAS, 2022b) While there was a decrease in public administration and defense, electricity and gas supply, agriculture, mandatory social security, and so on, there was an increase in public administration and defense. Meanwhile, in 2021, the real growth by key components of GDP by expenditure approach was as follows: exports of services (88.8%); exports of goods (51.6%), imports of services (44.3%); and final household consumption expenditures (0.3%) (KAS, 2022b).

The main contributors to GDP in 2021 were: Wholesale and retail trade (13.6%), Manufacturing 12.9%, Construction 8.5%, agriculture:7%; Real Estate Activities 6.4% and public administration and defense; compulsory social security 5.5% (KAS, 2022b).

The official currency of Kosovo is the Euro. Over the past few years, Kosovo's economy has shown significant progress in transitioning to a market-based system and maintaining macroeconomic stability. However, it is still dependent on imports and remittances from the diaspora. Official and unofficial remittances from the diaspora - mainly in Germany, Switzerland, and the Nordic countries - account for about 14.6% of GDP (CBK, 2022b).

Kosovo's economy grew slightly faster in 2021 than the previous year, owing primarily to improved political stability. The emerged following 2020, which saw the lowest level of development in postwar years, with -5.3 percent GDP growth due to the COVID-19 pandemic. According to the Kosovo Statistics Agency, the economy grew by 10.7 percent in 2021 (Figure 3) (KAS, 2022d). The World Bank projected that Kosovo's economy would increase by 3-4% in 2022 (The World Bank, 2022a).

Figure 3: GDP growth rate 2008 – 2021 (KAS, 2022d)



Source: (KAS, 2022d)

The GDP rate has shown a tendency to fluctuate over the years, which can be attributed to an unstable economic environment, which has been under tremendous pressure from other factors, primarily political. As a result, the economic growth recorded last year is assumed to have been mainly driven by increased domestic demand, i.e., increased consumption and investment. At the same time, net exports positively impacted economic growth. In 2021, goods exports were estimated at around 755 million euros. A significant increase compared to the previous year, with an increase of about 59% compared with 2020 and 97% compared with 2019. During the same period, imports exceeded 4.6 billion euros, and the import-export coverage ratio was 16.1 percent, significantly higher than any prior year (KAS, 2022e).



In 2021, Kosovo's economy was characterized by an increase in prices. As a result, the consumer price index inflation rate was +3.4 percent. In 2021 government managed to increase revenues to 2.2 billion Euro, which is a growth of 27% compared with the previous year (CBK, 2022). Conversely, expenditures totaled 2.27 billion euros, a 2.3 percent rise from a year earlier. Therefore, the budget deficit in 2021 was 0.9 percent of GDP, while in 2020, it was 7.6 percent. In addition, 2021 Foreign Direct Investment increased by 21.8 percent 2021, contributing significantly to Kosovo's economic development (CBK, 2022).

By the end of 2021, public debt amounted to 1.7 billion euros, or 23.3 percent of GDP and 13.1 percent higher than in 2020 (CBK, 2022). Kosovo's trade balance remains negative, with a deficit of around 4 billion euros in 2021 (KAS, 2022e), an increase of 39% compared with 2020 and 26% compared with 2019.

### **3.3 State of e-banking and m-banking Regulations in Kosovo**

Kosovo has a recent history of e-banking and m-banking development. Micro-Enterprise Bank installed the first ATM in Prishtina, introducing an electronic debit card as part of the digitalization process. Today, banking cards, debit and credit, ATMs, and points of sale - POS terminals - are required. In addition, banks have shifted focus on providing e-banking services or Internet payments. A service that is becoming more popular and provides clients with constant access to their money to complete all banking transactions without any direct contact with the bank or bank employees (European Fund Southeast Europe and the Kosovo Banking Association [EFSE & KBA], 2016).

Central Bank of Kosovo issued a regulation on electronic payment instruments in August 2017 (CBK, 2017), regulation was updated in January 2022 (CBK, 2022c). With his Regulation, CBK set the conditions, requirements, and procedures for the issuance and use of electronic payment instruments. Security standards that should be met by the banks that issue electronic payment instruments are an important part of this regulation.

According to a survey conducted by the Kosovo ICT Association (STIKK) (Kosovo ICT Association [STIKK], 2019), as of 2018 in Kosovo, around 96 % of households have internet access at home. In most of the enlargement countries, this share ranged from 69% to 84%, with the share in Albania well below this range (30 % in 2017). At the end of quarter 1 of the year 2020, there were around 2 million mobile phone users in Kosovo, about 350 thousand internet users that have fixed access, and about 1.3 million internet users with mobile access (Regulatory Authority of Electronic and Postal Communication [ARKEP], 2020). Considering that the current Kosovo population is around 1.8 million (KAS, 2022a), we can say that the Internet and mobile devices are highly present in Kosovo's population. About 81% of Kosovo's population uses the Internet daily, and the usage time is around 3.5 hours per day. Smartphones are the devices used most frequently by Kosovars to access the Internet (73%)-same survey (STIKK, 2019).

The above facts (STIKK, 2019) create an opportunity for banks to develop their digital channels and e-commerce, and any bank should not ignore this opportunity. As we can see from the above-presented data, the potential for m-banking in Kosovo might be even higher since a considerable number of people (around 96% of the population) access the Internet through a mobile device. Additionally, as stated by Kreyer, Pousttchi, and Turowski (2002), mobile devices are user-friendly and enable customers to do banking conveniently anywhere. This statement is also supported by the fact that Kosovo has already moved to 4G, which allows users to have qualitative access to m-banking throughout the country. The pandemic hugely impacted the acceleration of development and the usage of digital products. In this regard, banks have increased their investments in technology by over 10% of their income (KBA, 2021).

The number of e-banking accounts grew by around 126,387 in 2021, or 31%, compared with 2020, which is a significant growth (CBK, 2021b). On the other hand, banks have reduced their physical points by around 3% in 2020 and 6% in 2021, which indicates that they are switching more to digital channels (Table 6). The emphasis on alternate distribution channels led to a significant growth in the use of electronic services. Also, the number of POS increased by 415 or 3% in 2021. , The number of ATMs dropped by 15 pieces or 2.8% in 2021, which like the reduction of physical branches, it supports the strategy to switch to digital channels. , and ATM transactions increased by 178 percent. As a result, the proportion of electronic services against branch transactions has significantly expanded.

Table 1 (CBK, 2022) shows that in Kosovo, during the year 2021, there were around 2,384,742 bank accounts and 537,733 e-banking accounts. Even though the number of e-banking accounts increased significantly in recent years, only 23% of bank accounts are linked with e-banking accounts.

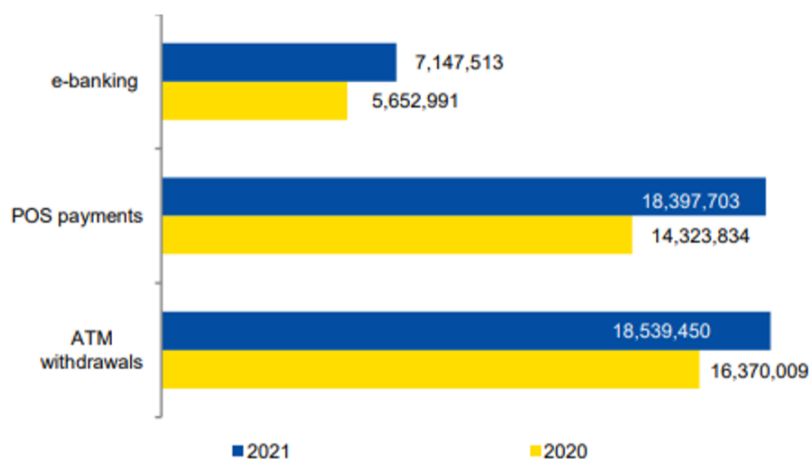
*Table 6: Banking sector network (CBK, 2022b)*

<b>Bank sector network</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Number of bank branches	45	46	47	50	43
Number of bank sub-branches	183	166	159	149	145
ATM number	512	491	497	531	516
POS number	11,501	13,1833	13,769	13,421	13,836
Number of e-banking accounts	301,841	250,733	337,693	411,346	537,733

*Source:* (CBK, 2021b)

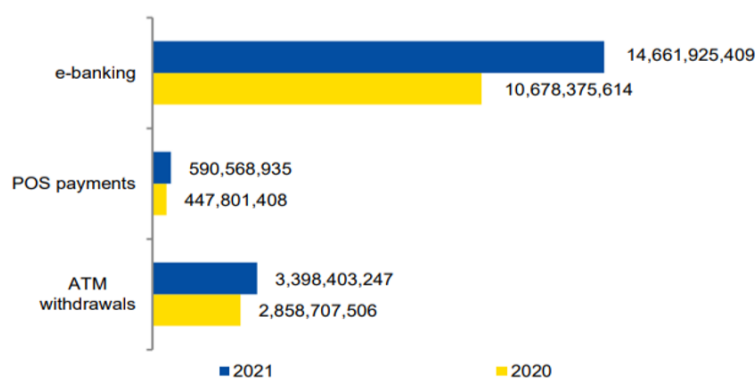
The number of payments made through the e-banking service in 2021 (CBK, 2022) was 7.1 million transactions, with an increase of 26.4 percent over the previous year and a 14.7 billion euros value which is a 37.3 percent increase over the prior year (Figure 4). The use of POS terminals increased by around 28.4%, while ATM withdrawals have also increased by 13.3%, as reported in Figure 5 below.

Figure 4: Annual Transaction volume of electronic payment installments (CBK, 2022)



Source: (CBK, 2022)

Figure 5: Transactions of electronic payment instruments (e-banking, POS, and ATM) (CBK, 2022)



Source: (CBK, 2022)

E-banking is convenient and efficient, according to interviews with business bank clients (EFSE & KBA, 2016). E-banking permitted much faster and simpler contact with suppliers and buyers, saving time and resources. Some participants in the study claimed that they make all their payments using e-banking. They stated that telephone services are restricted to many services. Participants claim that tellers must handle some services, money transfers from banks to consumers' accounts take one to two days, and that services are costly.

The rapid user growth, transaction volume, and number are strong indicators of this service's rising stability and security. Customers have not been harmed because of system defects, particularly those affecting service providers, nor have they expressed significant complaints about how effectively e-banking performs. Most criticisms revolve around the network's operation (EFSE & KBA, 2016). Besides, Kosovo's financial sector has lately integrated modern technologies with remarkable speed and intensity, on par with Western European

states. As a result, electronic banking services are regarded as the quickest, safest, and most convenient way to access money and payments 24 hours a day, seven days a week, and execute basic financial transactions (Sadiku, 2019).

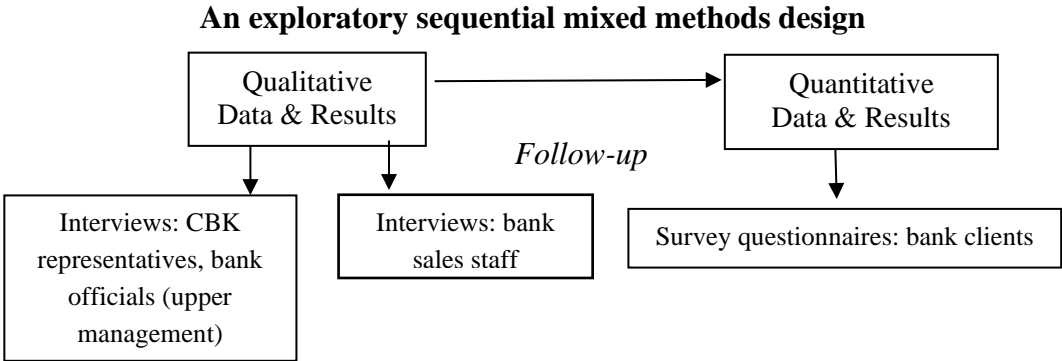
Even though electronic services have expanded quickly, banks continue to follow their old business model. According to Sadiku (2019), Kosovo banks did not adopt the most recent trends in innovation and digitization brought by European banks. Most European banks have implemented cutting-edge technologies in digital distribution/e-commerce sales, mobile payments, social media marketing, big data analytics, social media complaint management, and secure messaging. Some banks have also implemented telematics/biometrics/wearable technology (HSBS and BNP Paribas), artificial intelligence, robotics, and card auto-provisioning for apple/android pay. Unfortunately, this creative viewpoint is lacking in Kosovo's banking business (Sadiku, 2019).

## 4 RESEARCH METHODOLOGY

### 4.1 Approach to Research

A mixed-method research approach was adopted in this study. According to Creswell (2014), there are three mixed-method designs, the convergent parallel mixed method, the explanatory sequential mixed method, and the exploratory sequential mixed method. The exploratory sequential mixed method research design is used during this study, starting with qualitative data collection and analysis followed by quantitative data collection. The findings from the qualitative data analysis were used to draft the investigation for the quantitative data collection (Creswell, 2014).

Figure 6: Research Methodology, Exploratory Sequential Mixed Method Design



Source: Own work.

### 4.2 Instruments with the Focus on Questionnaire Development

The data is collected from Central bank representatives (Appendix 2), senior bank management (Appendix 3), bank sales staff (Appendix 4), and bank clients (Appendix 5).

The senior management pool of interviews helped understand their experience and perspective regarding e-banking and m-banking services. Since the advancement and adaption of these two digital services are closely related to the legal environment, it is also essential to understand the regulatory perspective. This could be understood by discussing it with the Central Bank representatives while exploring the alignment between Central Bank's plans (especially regarding rules and regulations), technological developments, changes in customer behaviour, and the time frames. By discussing with the bank's sales staff, we understood the perspective of bank staff who directly interact with customers regarding these two services. First, we found out the bank's sales staff's opinion regarding e-banking and m-banking. Do they believe these two services are very beneficial for customers, and what are the main challenges for selling these two services? We tried to understand if these two services' success or non-success is related to the bank's incentive scheme, sales staff perception regarding these two services, clients' needs, and clients' capabilities to use these two services.

Through quantitative research with customers, the aim was to see their outlook on e-banking and m-banking, what challenges clients face and why they use or do not use these two services. The study explores if the usage of these services by clients is linked to their income level, education, age, or region where they live.

1. Semi-structural interviews with Central Bank of Kosovo representatives regarding the IT-driven services and products, answering research question 1; (1 interview).
2. Semi-structured interviews with bank officials (senior management) from categories of international and local banks were conducted to answer research question 2 and its sub-questions a, b, and c; (10 managers).
3. Structured interviews with sales staff from categories of international and local banks were conducted to answer research question 3 and its sub-questions a and b; (20 sales staff).
4. Google Form questionnaires were distributed to a large sample of clients (n=337) to answer research question 4.

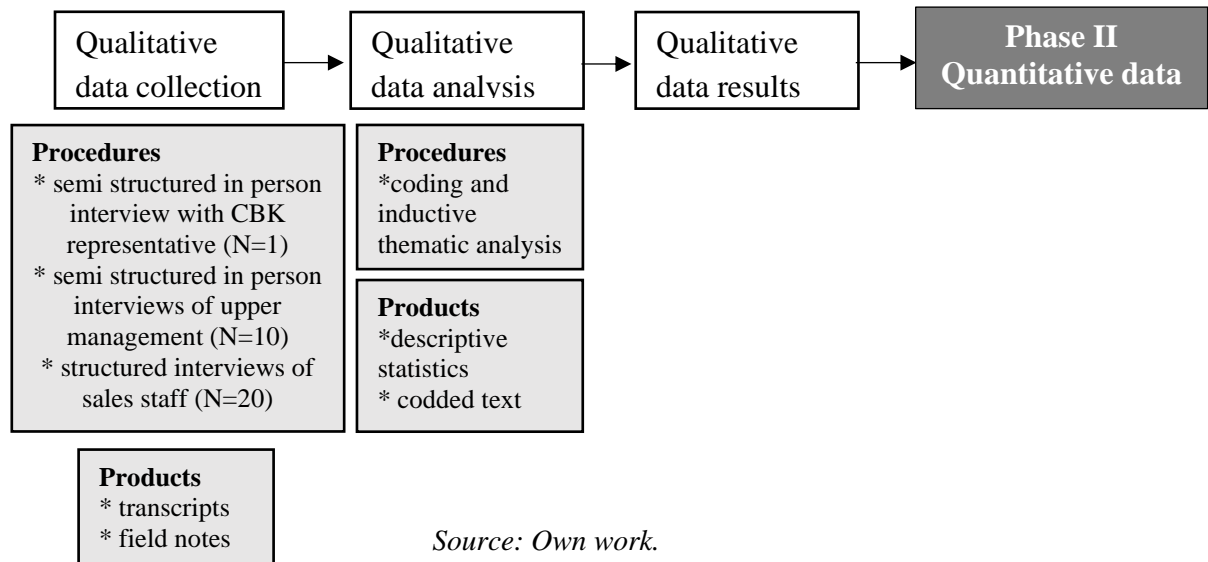
The semi-interview questions and the questionnaire was developed in close consultation with the mentor and was approved before the fieldwork.

### **4.3 Data Collection and Ethical Considerations**

The data were collected in two phases. During phase one, qualitative data were collected and analysed within two months, Figure 7, followed by phase two, where quantitative data was collected and analysed for one month, Figure 8. The semi-structured interview of CBK representative (n=1) consisted of 7 questions (Appendix 2). The semi-structured interview

with senior bank management (n=10) staff had 25 questions (Appendix 3), and the interview with the bank sales staff (n=20) with a total of 10 questions (Appendix 4).

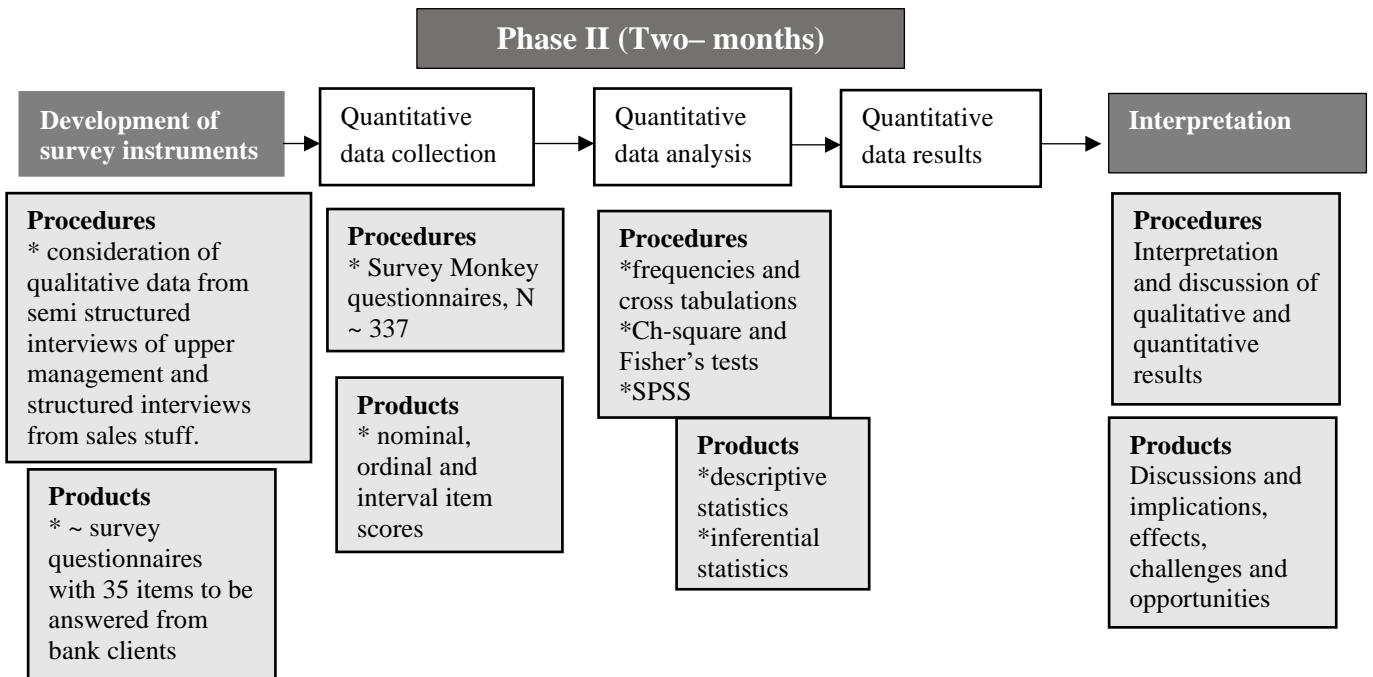
Figure 7: Phase I - Qualitative Data of Exploratory Sequential Mixed-Method Research Design



Source: Own work.

The questionnaire has 35 questions (Appendix 5) and consists of multiple-choice questions, yes and no, check all that apply, and Likert scale questions.

Figure 8: Phase II - Quantitative Data of Exploratory Sequential Mixed-Method Research Design



Source: Own work.

Driven thematical inductive analysis was conducted with groups of interviews. The interviews were conducted via zoom in the first trimester of 2021. Unfortunately, the online interview approach had to be taken due to the COVID-19 pandemic isolation at the time.

The quantitative questionnaire with customers was designed to help identify usage and attitude towards bank usage with a specific interest in e-banking and m-banking. The questionnaire was drafted in English language and was translated into the Albanian language. It was made available in both languages in Kosovo as a means to have an easy reach and a bigger response rate. The quantitative survey was shared via social media, mainly Facebook, and also via email to some of the respondents. The quantitative questionnaire was conducted with bank clients from Kosovo from different age groups, gender, education, source of income, monthly income data, and residence for the data to be more representative of the Kosovo population.

The sample of the quantitative questionnaire with beneficiaries was 337 respondents. The data were gathered during October 2022 via the Google Form platform and were checked and validated during the gathering phase and the data analysis. Data analysis was performed in SPSS for Windows 22 software program, where tabular reports were produced, which were used for further analysis and interpretation. Apart from SPSS, Microsoft Excel 2013 was also used for performing specific analyses and creating charts and tables.

Participation in the study was voluntary. At the beginning of the semi-structured interviews and questionnaires, participants were informed that a) their participation was voluntary, b) they could withdraw from participation at any time, and c) non-participation did not have any adverse effects. Participants were also informed how the data will be used and that confidentiality is ensured as no names or identifying personal information will be linked to the answers they provide.

## **5 RESULTS AND ANALYSIS**

### **5.1 Qualitative Data Analysis**

Three different types of interviews were conducted: a semi-structured interview with a Central Bank of Kosovo representative (n=1), senior bank management (n=10), and a structured interview with bank sales staff (n=20). The interviews were conducted in person.

#### **5.1.1 Interview with Central Bank of Kosovo representative**

The goal of interviewing the Central Bank of Kosovo representative was to obtain more information on the perspective of the Central Bank of Kosovo regarding IT-driven services. The advancement and adaption of e-banking and m-banking digital services are closely related to the legal environment; therefore, it is essential to understand the regulatory

perspective. The interview with the Central Bank representatives aimed to explore the alignment between Central Bank's plans (especially regarding rules and regulations), Commercial Bank's objectives, technological developments, changes in customer behaviour, and the time frames regarding e-banking and m-banking services.

When the Payment System Department Director was asked to elaborate on the legal obstruction for Financial Institutions to adopt e-banking and m-banking, the interviewer's response was quite positive. The participant claimed that there is no legal obstruction for any financial institution in Kosovo to adopt a payment instrument such as e-banking and m-banking. Further, the Law on Payment Systems is the main legal act that defines and regulates payment systems and instruments, including e-banking. Then, the interviewer added that there is also the regulation on electronic payment instruments, which determines the conditions, requirements, and procedures for issuing and using electronic payment instruments, including e-banking for clients. In this regard, CBK has created a favourable legal environment for enabling customers to perform payment services through e-banking and m-banking.

When asked to share an opinion on whether digital channels should become the leading financial institutions for delivering their financial services, the interviewer's response leads to the understanding that it is already happening. The interviewer said, "the banking market in Kosovo has moved at a fast and encouraging pace in adopting and using electronic banking platforms. The impact of technological innovations in payments has been transformative in recent years. Clients today have access to many alternatives to make payments electronically. The development of digital technology, the improvement of internet penetration, and smart devices in general and in the Kosovo, market have enabled financial institutions to develop and deliver their financial services through digital channels and increase the effectiveness and efficiency of their products and services. Access to accounts 24/7 is a big advantage for clients to make electronic transactions and payments at any time, every day of the week. Also, using mobile phones as a means of payment for purchasing products and services represents another change of the payment system model towards digital payments."

The interviewer continues by stating that digital channels are significantly less costly and more efficient than physical services. They have reduced the costs related to timing dedicated to the consumption of financial services, and mainly the costs associated with the usage of physical cash, risks involved, transportation and safety, and many other services. In addition, digital channels have significantly reduced the informal economy as an additional country-level benefit. The transitioning to taking over the delivering of financial services, the interviewer believes, will take time and needs to consider several categories, such as people not being used to digital forms of financial services. Hence it shall be gradual in terms of keeping the physical channels for those not used to adopting these new services. However, in the longer term, all institutions will try to move as much as possible toward digital channels.



When asked what Central Banks' approach would be if Financial Institutions provided additional products and services through m-banking, the interviewer responded that the Central Bank encourages financial institutions to increase the efficiency of their products and services to offer more affordable services for their clients. This includes moving away from using cash and physical services as much as possible and adopting digital financial services. The interviewer adds, "Although, there are certain aspects which do not fall specifically under the relevant authority and as preconditions to the adoption of digital services in a country. For example, the adoption of a country-level digital/electronic identification, the authorization of the usage of electronic signatures, the application of risk-based know your customer and due diligence requirements, and the enabling of innovations to enter the market." Furthermore, the interviewer said that the Central Bank is interested in working with all the relevant authorities to address these enabling factors for advancing digital channels to increase the usage of digital financial services.

### 5.1.2 Interview with senior bank management

The second semi-structured interview with the senior bank management aimed to understand the main drive for adopting Kosovo banks' e-banking and m-banking platforms. Further, the goal of the semi-structured interview was to investigate how e-banking and m-banking are linked to consumers, the future of the two services in Kosovo's banking sector, and the use of e-banking and m-banking as one of the bank's objectives. The senior management pool of interviews helped to understand their experience and perspective regarding e-banking and m-banking services.

Ten semi-structured interviews were conducted with senior bank management. The interviewees were from a wide range of Kosovo banks, including five international, NLB, TEB, RBKO, Procredit Bank, and BKT Kosova, and two local banks, Banka Ekonomike, and Banka per Biznes. The interview positions consisted of Bank CEO (n=2), Deputy CEO (n=1), Corporate and commercial banking department manager (n=1), Deputy Head of Division Retail (n=1), Head of Mass and Premium Banking (n=1), Head of Retail Division (n=1), Management Board Member (n=1), Manager of Product Development, Customer Service and Marketing (n=1) and Manager (n=1). Interview participants consist of 10% from corporate, 10 % from retail, and 80% from mixed bank types. Regarding the bank's marketplace rank in terms of assets, 20% of the participants claimed to be in the 1st place, 30% of participants in the 2nd place, 30% of participants 4th place, and 20% claimed below than 4th place.

How are e-banking and m-banking linked to consumers?

According to the interviewees, the services, and transactions that customers can do via e-banking and m-banking are numerous. The interviewees claimed that customers could check account balances, make transfers, utility payments, tax and customs payments, and other payments. They claim that customers can perform all types of payments, domestic and

international. Customers can apply for credit cards, make credit card payments using their accounts, change credit card limit payments perform direct debit standing orders, transfer money within internal accounts, open time deposit accounts (TDA), and others. All interviewers consider the launching of e-banking and m-banking as absolutely necessary, essential, and very successful services. When we asked how many of your customers have e-banking and m-banking, 8 out of 10 responded that they are below 80%, were 20% of them declared below 20%. Senior management of only 2 banks out of 7 announced that more than 80% of their customers use e-banking and m-banking. We have the same numbers declared that only up to 20% of their clients are using e-banking and m-banking.

When we asked the senior management if the adoption of e-banking and m-banking is related to customer segments, 6 out of 10 declared that this is pretty much related, stating that the young generation, corporates, clients with higher education, and retail clients are keener to using e-banking and m-banking platforms. In contrast, Argo and Micro clients are more hesitant in this regard. Additionally, two Senior Managers think that client awareness about the service is the most crucial factor for using these two services. While most of the Senior Managers, 80%, stated that the client complaints are mainly related to technical issues, and sometimes these complaints of clients, as stated by one manager, are about why they cannot do more banking services through e-banking and m-banking platforms, therefore positive complains.

The future of the two services in Kosovo's banking sector

When were the participants asked Are e-banking and m-banking essential services for your Bank? All ten interview participants answered with essential. One interviewer claimed that "They [e-banking and m-banking] are not viewed as alternative channels any longer but as the main channel of Bank transactions", and another claimed, "that still some of the clients are preferring to do traditional banking, our approach to those clients is moderate". According to the bank's senior management, the main challenges for the non-success of these two services are related to security reasons (clients are afraid that it is too risky to do banking through digital channels) and the level of education primarily associated with technology. On the other hand, efficiency, self-control, ability to see all transactions through these two services, and willingness to be in trends in the industry are the main factors that influence the success of these two services. Senior managers have mixed opinions regarding the staff's perception of these two services. For example, 3 of the senior managers declared that the staff is a bit worried that digital platforms can replace them. In contrast, other senior managers stated that through communication with the staff, they managed to convey the message that this was in the best interest of the bank, clients, and staff. One senior manager declared that tellers are more afraid that digital channels will replace them.

Regarding the legal environment, most senior managers stated that implementing the law on digital signatures is crucial for advancing digital services and enabling end-to-end sales. One of the senior managers said that it is very important if public institutions digitize their services, such as cadastre, tax offices, municipalities, and others. The majority of senior managers declared that less than 15% of the marketing budget is spent on promoting e-banking and m-banking services, while only one manager said that the majority of the marketing budget is spent for this purpose without mentioning the percentage. One senior manager said that around 25% of the marketing budget is spent promoting these two services. Almost all senior managers 9/10 declared that they plan to provide additional services through e-banking and m-banking, especially loans, term deposits, overdrafts, etc.

When senior managers are asked if they think these services are at risk of being cannibalized by another digital, they must declare that they are not afraid that this will happen, at least in the short term. They have seen fintech companies as real competition for a long time. However, they think that fintech is focused only on payments while banks have 360-degree services to clients. As a result, some managers believe that they complement each other.

Is e-banking and m-banking one of the bank's objectives?

According to senior management, the banks' objective through the introduction of e-banking and m-banking was to improve customer services and increase efficiency. Some senior managers declared that offering e-banking and m-banking involves meeting clients' demands and staying competitive. One of the senior managers stated that providing e-banking and m-banking gives them a competitive advantage.

When we asked Senior managers if they had done the research and the client's perception regarding these two services, they stated that the clients are welcoming to these services. They continuously ask for further upgrades of these two services. None of the senior managers declared that offering these two services is related to the bank's social objective. However, one Senior Manager proclaimed that this is somehow related as access to banking services is one of the bank's objectives.

Most senior managers, 6 out of 10, declared that business clients are their main target for providing these two services, while 4 said that all clients are their target. All senior managers declared that clients should come physically to the branches to sign documents, and this is due to the lack of legislation regarding digital signatures. When senior managers were asked to elaborate on the increase in using these two services, one of the banks' three-year objectives, and why, all declared that this is their objective, and the reasons are related to the increase of efficiency and enhancement of customer service. Two senior managers stated that the rise in the usage of these two services is related to the new circumstances caused by the pandemic.

### 5.1.3 Interview with bank sales staff

The third structured interview was conducted with bank sales staff to understand the sales staff's perceptions of the increase in technology-driven products and services, mainly e-banking and m-banking. By discussing with the bank's sales staff, we understood the perspective of bank staff who directly interact with customers regarding these two services. Furthermore, the bank sales staff expressed the benefits of these services for customers and their challenges in selling these two services. A total of 20 interviews were conducted with bank sales staff from the pool of Kosovo banks.

#### Perception of the sales staff on e-banking and m-banking services

The response was positive when the sales staff were asked to elaborate on customer e-banking and m-banking convenience. Of the interviewees, 45% said that e-banking is convenient to customers, 30% claimed that e-banking is somewhat convenient, 20% did not want to comment, whereas 5% disagreed that e-banking is very convenient for the customers. Regarding m-banking specifically, 40% of the interviewees claimed that m-banking is convenient to customers, 50% somewhat convenient, whereas 10% did not want to share their perception.

#### Challenges in selling e-banking and m-banking services/accounts to customers

The interviewees of this study were asked if they have targets to meet with e-banking and m-banking services sold for certain periods. Regarding e-banking services sold, 17 interviewees (85%) claimed a requirement within their bank to meet targets. All claim that they meet Bank targets for e-banking. They say that almost every active client of the bank is already equipped with an e-banking service. Consequently, they claim, this is and remains our constant target/goal. The interviewees say that all active clients, which means clients who regularly pay maintaining banking services fees, must be equipped and use this modern banking service. In contrast, 3 interviewees (15%) do not have as a specific target to sell e-banking services. However, they think that Bank should introduce targets for this service.

Bank sales staff were asked if they had bonuses associated with e-banking targets. They responded that 50% have bonuses related to targets, and 50% do not receive bonuses, yet 70% of interviewees agree that banks should apply rewards for meeting e-banking targets, 20% have no opinion, and 10% do not agree that Bank should use bonuses for meeting e-banking targets.

Regarding the m-banking targets sold per period, 55% of the bank sales staff claim they do have targets to meet, and 45% do not. Of the interviewees claiming they need targets to meet, 5 agree that banks should not introduce targets for this service. While most interviewees claim they reach the targets for m-banking between 80-100%, a couple says they do not meet the m-banking targets. One of the interviewees claimed that because m-banking was later launched as a service, in comparison to e-banking, the level of usability of this service still

needs to be improved. The interviewer said that about 33% of his active clients are equipped with m-banking and regularly use the m-banking services. When the interviewers were asked if it is difficult to meet the targets for m-banking, 38.9% claimed it is difficult to meet targets for m-banking, and 61.1% responded that it is not so difficult. The main challenges, the bank sales staff claim, are because the clients need to be more aware of the m-banking services. The bank sales staff thinks that the clients do not believe that the expenses of the m-banking service are expensive, they have appropriate devices, they are very comfortable with the use of digital devices, and the customers trust the usage of digital services.

Of the bank sales staff, 55% claim that they receive bonuses for meeting the targets on m-banking, and 45% claim that they do not. Only one participant thinks bonuses should be separate from meeting targets for selling m-banking services. Five interviewers do not want to comment on it, and 14 participant interviewers claim that bonuses should be associated with the target of m-banking services sold.

The difficulty in meeting the bank's e-banking targets is expressed equally, with 50% claiming it is difficult to convince customers to use e-banking and 50% having no difficulty. This means that besides that all active clients, who pay monthly fees, have e-banking, they might not use the e-banking services available automatically to them. When interviewers were asked why they thought it was challenging to sell e-banking services to customers, 75% of the bank sales staff expressed that they believed that customers were unaware of such service. Only 20% believe that customers do not use e-banking due to the expenses of digital services, and 30% might be associated with the need for an appropriate device to use digital services. The rest of the interviewers believe that the costs of digital services and devices to use digital services are not an issue or have neutral opinions. Additionally, 45 % of interviewers claim that customers do not feel comfortable with digital services, whereas 20% claim that the comfortability of using digital services is not an issue for customers and the rest of the interviewers have a neutral opinion. Regarding trust in using digital services, 35% of sales staff believe that customers do not trust such services, 35% have a neutral opinion, and 30 % believe that trust is not an issue for customers not using digital services.

## **5.2 Quantitative Data Analysis**

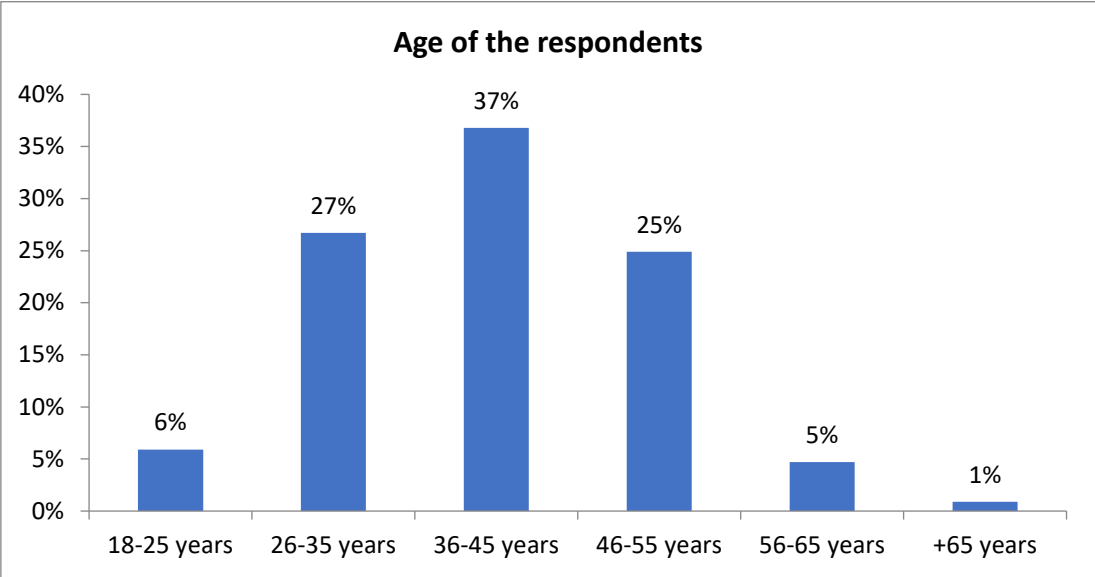
### **5.2.1 Demographics of the respondents**

The descriptive statistics of the age, gender, education, source of income, monthly income data, and residence are presented below.

More than ne-third of the respondents, namely 37%, fall in the 36-45 years age group, whereas a quarter is from the age group 46-55 years 25%, little over a quarter 27% from the 26-35 years age group. Those that are the youngest from the 18-25 age group are fairly small

in number, same as those close to retirement 56-65% 5%. Only 1% is from the 65+ age group (Figure 9).

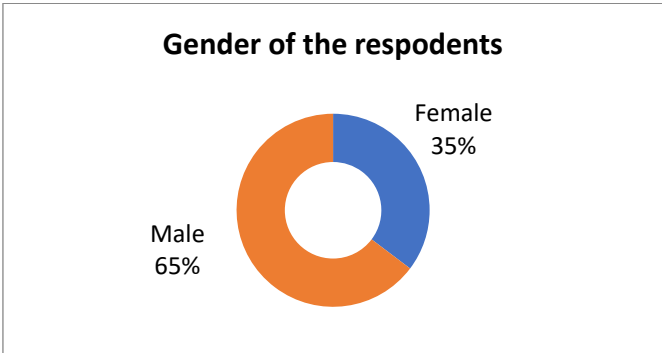
Figure 9: Age of the respondents (N=337)



Source: Own work.

Regarding gender distribution, 65% of the respondents are male, and 35% are female (Figure 10).

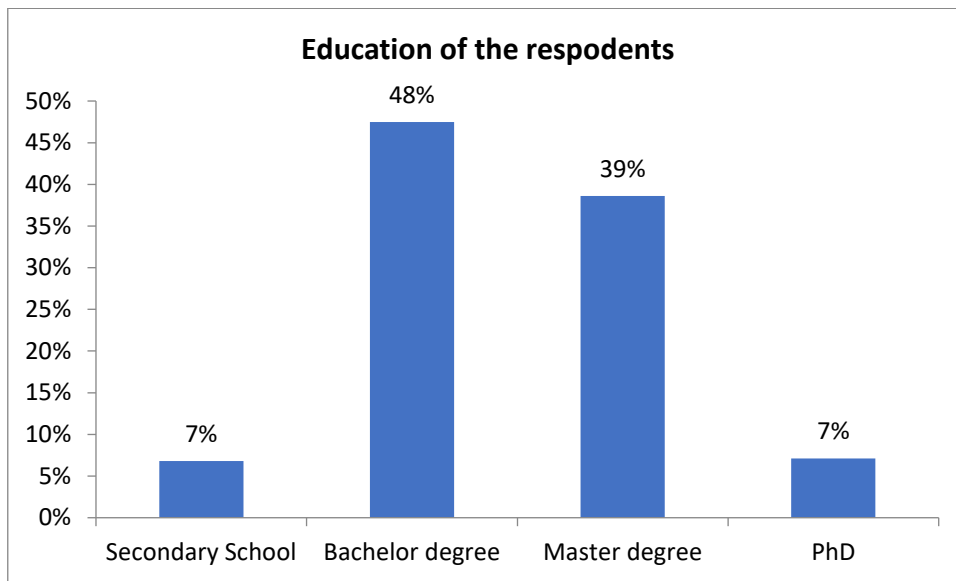
Figure 10: Gender of the respondents (N=337)



Source: Own work.

Almost half of the sample holds a Bachelor's degree 48%, more than a third 39% of the respondents hold a Master's degree, whereas 7% have finished only their secondary education, and another 7% of the sample has a Doctorate Degree (Figure 11).

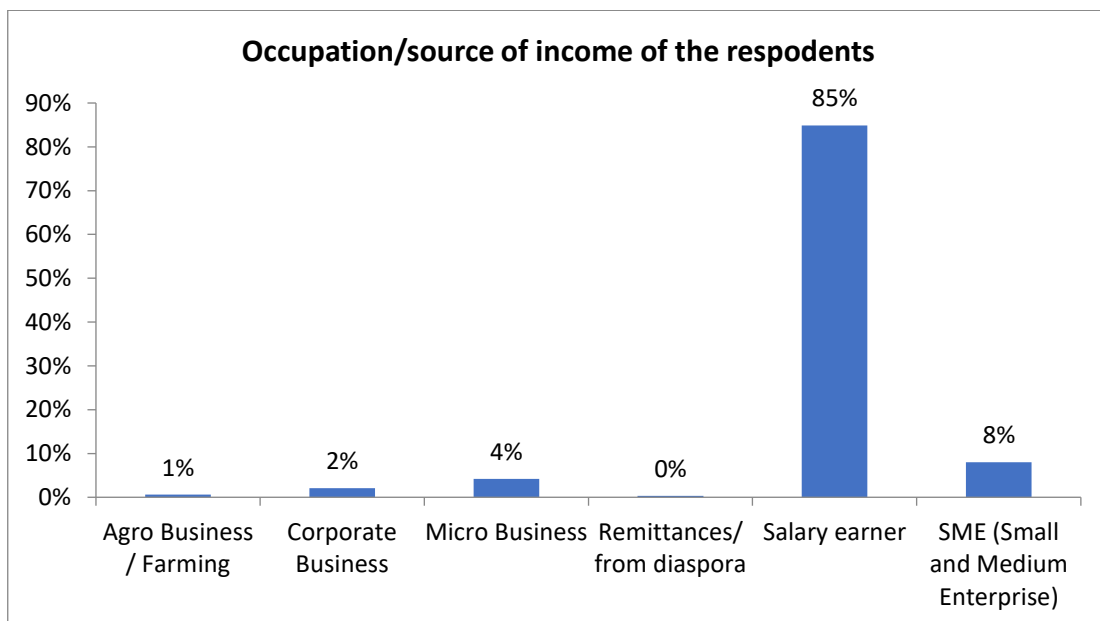
Figure 11: Education of the respondents (N=337)



Source: Own work.

Regarding the source of income and occupation, the vast majority of the respondents are salary earners, 85%. In contrast, some noted their SME businesses 8% as a source of income, some their micro businesses 4%, some their corporate businesses 2%, and some their agro-businesses 1% (Figure 12).

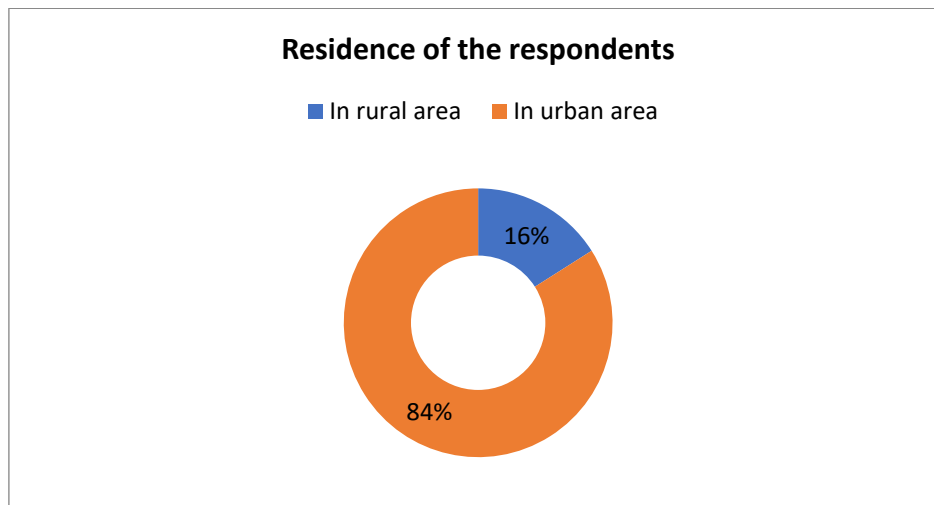
Figure 12: Occupation/source of income of the respondents (N=337)



Source: Own work.

Most of the respondents reside in urban areas, 84%, whereas 16% live in rural areas in Kosovo (Figure 13).

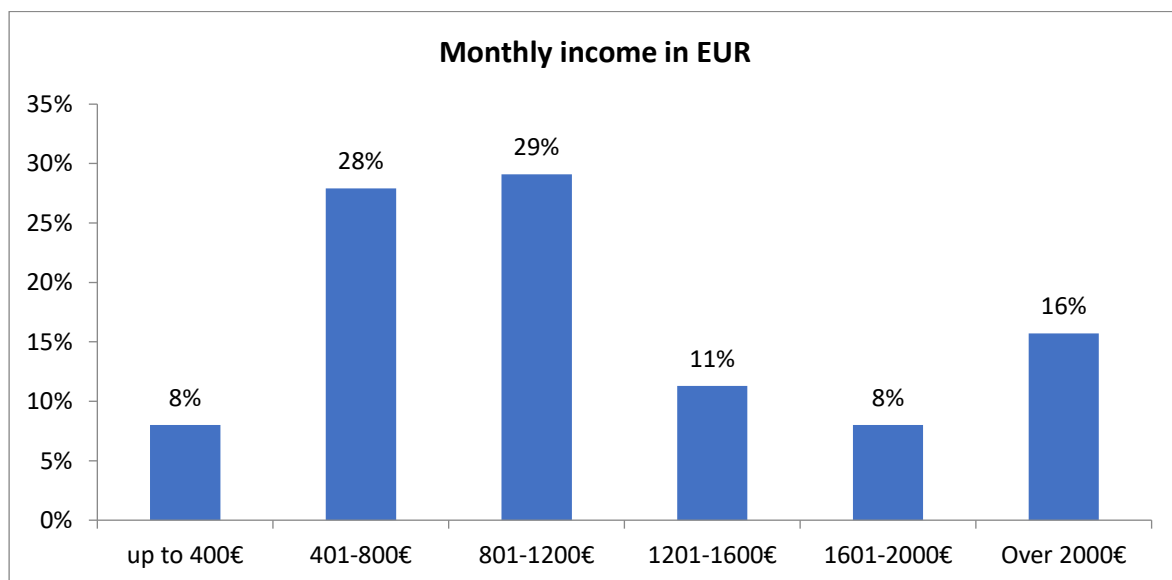
Figure 13: Residence of the respondents (N=337)



Source: Own work.

When it comes to monthly income, the respondents are quite diverse. 65% of our sample earns below 1200 EUR a month, and 35% earns more than 1200 EUR a month. Little from our sample, 8% earn up to 400 EUR a month, 28% between 401-800 EUR, 29% between 801-1200, 11% between 1201-1600 EUR, 8% 1601-2000 EUR, and 16% earn over 2000 EUR a month (Figure 14).

Figure 14: Monthly income in EUR (N=337)



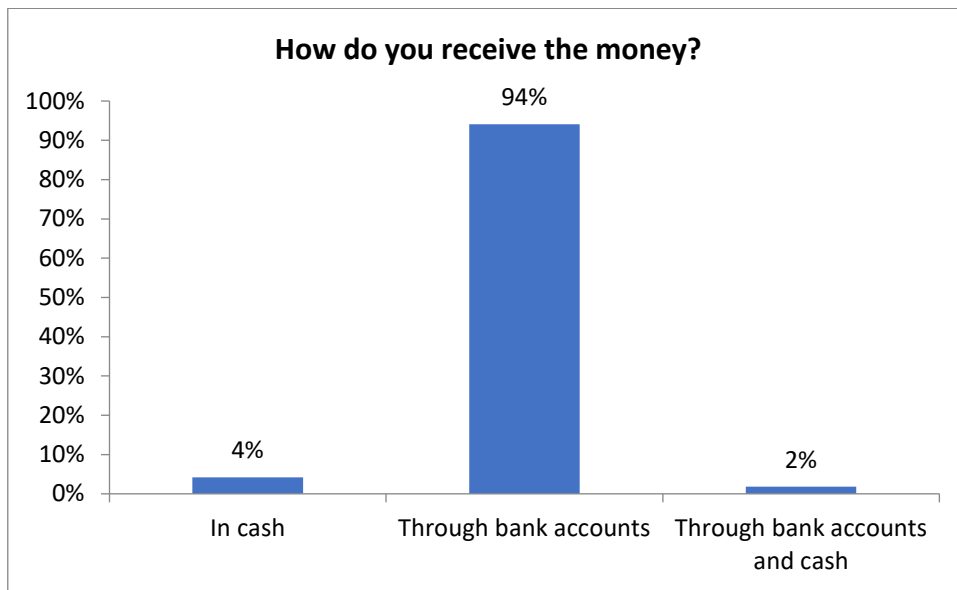
Source: Own work.

### 5.2.2 Usage of Bank Services

The vast majority of the respondents receive their salary through their bank accounts, only 4% receive it in cash, and 2% receive it through the bank and in cash (Figure 15).



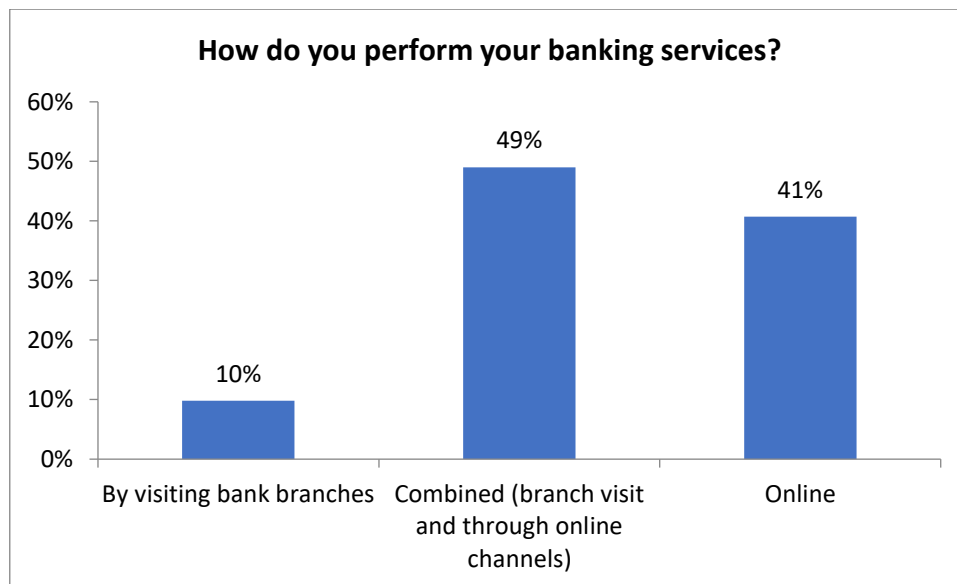
Figure 15: How do you receive the money? (N=337)



Source: Own work.

Half of our sample visit the bank but also use online services for their banking needs 49%, a large number of respondents 41% perform their activities mainly online 41%, whereas 10% perform their banking needs while visiting a branch of the bank (Figure 16).

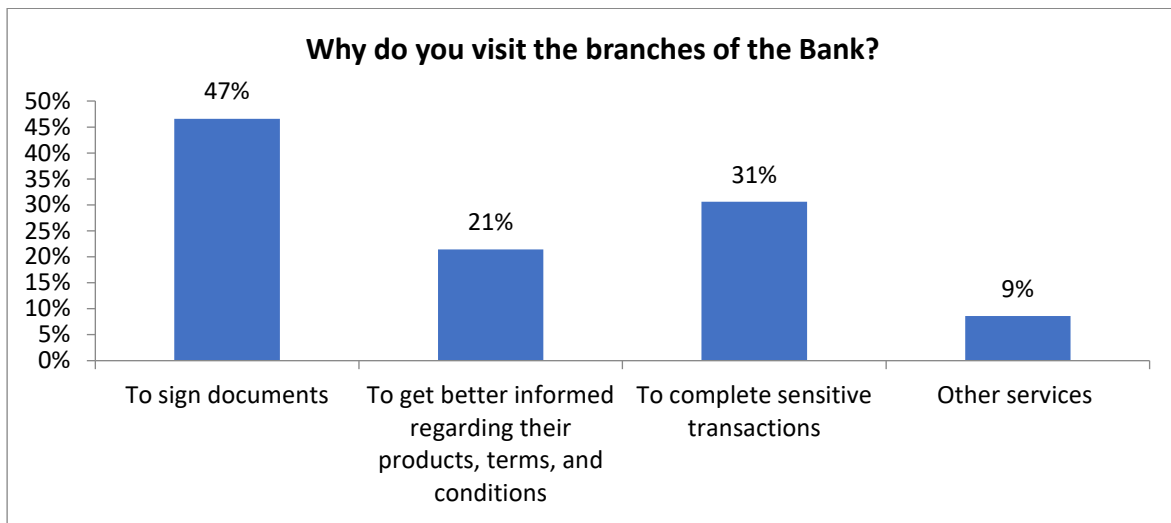
Figure 16: How do you perform your banking services? (N=337)



Source: Own work.

We have also asked our sample to mention the main reasons why they visit a bank. Generally they mainly visit the bank to sign documents 47%, to complete sensitive transactions 31%, to get better informed regarding their products, terms and condition, and 9% mentioned other reasons like exchanging money, etc. (Figure 17).

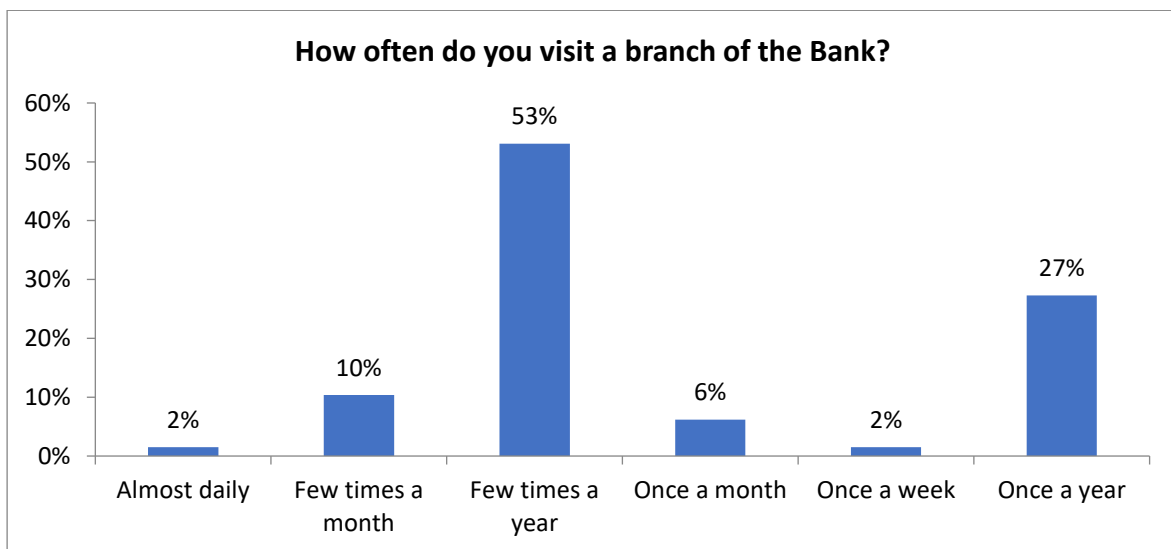
Figure 17: Why do you visit the branches of the Bank? (N=337)



Source: Own work.

In terms of frequency of visit, little over half (53%) of the sample declared that they visit a branch of the bank a few times a year, little over a quarter 27% stated that they visit it once a year, 10% visit it few times a month, 6% once a month, and 2% almost daily and once a week (Figure 18).

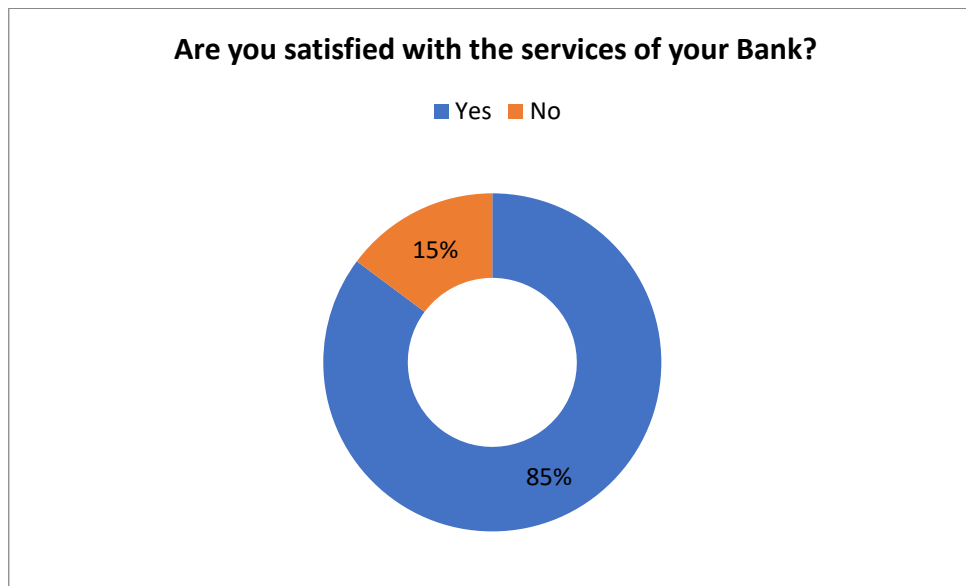
Figure 18: How often do you visit a branch of the Bank? (N=337)



Source: Own work.

When asked if they were satisfied with their bank's services, the vast majority of 85% declared that they were satisfied (Figure 19).

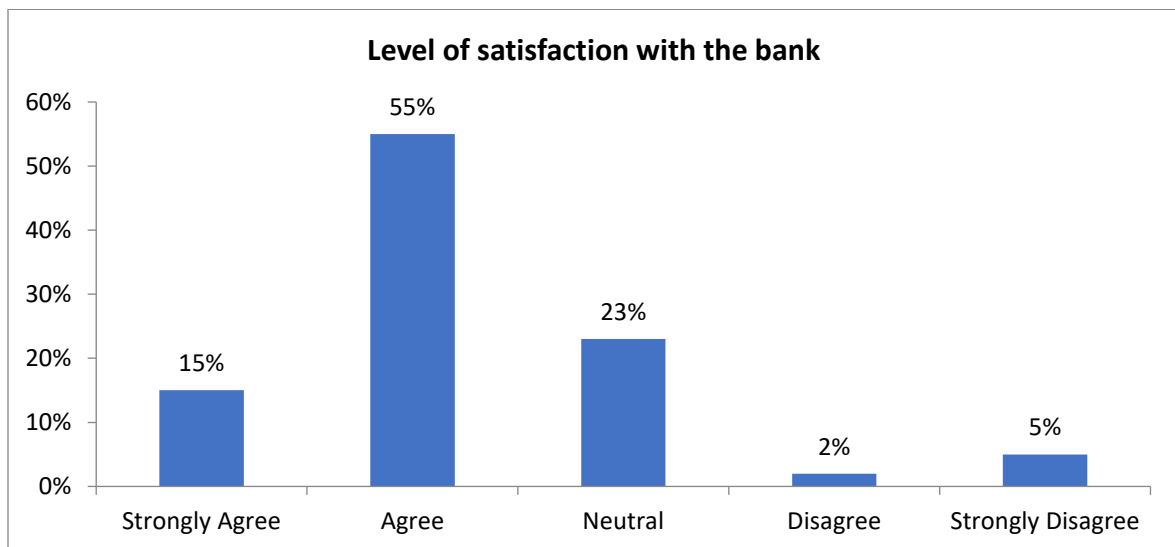
Figure 19: Are you satisfied with the services of your Bank? (N=337)



Source: Own work.

Those that were satisfied were asked the level of satisfaction where 70% declared that they were satisfied (strongly agree and agree), a little below a quarter were neutral 23% and 7% were dissatisfied (disagreed and strongly disagreed) with the statement that they are satisfied with the bank services (Figure 20).

Figure 20: Level of satisfaction with the bank? (N=287)



Source: Own work.

To understand whether there is a difference between different demographics in the usage of bank services, we have performed crosstabs and looked at chi-square and Fisher's exact test for different demographics like age, gender, education, source of income, monthly income data, and residence.

Looking at the crosstabs (Table 7), we understand a relationship between residence and bank services usage. The p-value for the Chi-square test is .042 for the standard Pearson chi-square, but also the Fishers exact test, the p-value is -.040, which is below the standard alfa value of .05, so we reject the null hypothesis that there is no relationship between these two variables (Table 8).

The same goes for the monthly income variable. There is a relationship between how banking services are performed and the monthly income variable (Tables 9 and 10). The p-value for the Chi-square test is .000 for the standard Pearson chi-square, but also the Fishers exact test, the p-value is -.000, which is below the standard alfa value of .05, so we reject the null hypothesis that there is no relationship between these two variables.

Table 7: Crosstabs Residence X Usage of banking services

<b>Crosstab</b>			
<b>How do you perform your banking services?</b>	<b>Where do you live?</b>		<b>Total</b>
	<b>In rural area</b>	<b>In urban area</b>	
- By visiting bank branches	9	24	33
- Combined (branch visit and through online channels)	30	137	167
- Online	15	122	137
<b>Total</b>	<b>54</b>	<b>283</b>	<b>337</b>

Source: Own work.

Table 8: Chi-square test, Crosstabs Residence X Usage of banking services

<b>Chi-Square Tests</b>				
	<b>Value</b>	<b>df</b>	<b>Asymptotic Significance (2-sided)</b>	<b>Exact Sig. (2-sided)</b>
<b>Pearson Chi-Square</b>	6.193 <sup>a</sup>	2	.045	.042
<b>Likelihood Ratio</b>	6.014	2	.049	.062
<b>Fisher's Exact Test</b>	6.205			.040
<b>N of Valid Cases</b>	337			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.29.

Source: Own work.

Table 9: Monthly income X Usage of banking services

<b>Crosstab</b>							
<b>How do you perform your banking services?</b>	<b>Monthly income (in Euro)</b>						<b>Total</b>
	<b>up to 400€</b>	<b>401-800€</b>	<b>801-1200€</b>	<b>1201-1600€</b>	<b>1601-2000€</b>	<b>Over 2000€</b>	
- By visiting bank branches	11	13	5	1	2	1	33
- Combined (branch visit and through online channels)	13	51	58	18	10	17	167
- Online	3	30	35	19	15	35	137
<b>Total</b>	<b>27</b>	<b>94</b>	<b>98</b>	<b>38</b>	<b>27</b>	<b>53</b>	<b>337</b>

Source: Own work.

Table 10: Chi- square test, Crosstabs Monthly income X Usage of banking services

Chi-Square Tests				
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	40.985 <sup>a</sup>	5	.000	.000
Likelihood Ratio	35.178	5	.000	.000
Fisher's Exact Test	32.480			.000
N of Valid Cases	308			

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 2.88.

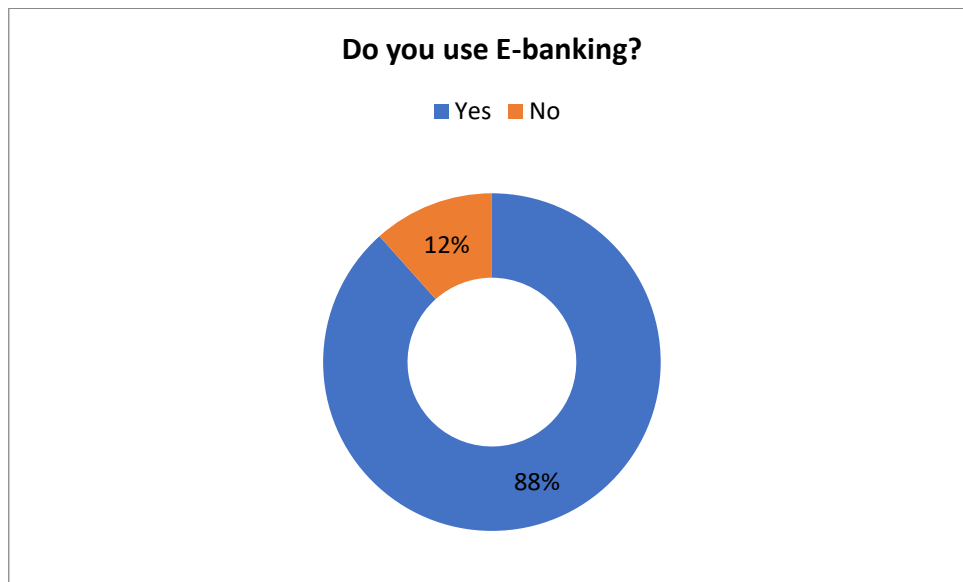
Source: Own work.

Whereas for all other demographic variables, age, gender, education, and source of income, we do not reject the null hypothesis that there is no relationship between how you perform your banking services and the above-mentioned demographic variables (Appendix E).

### 5.2.3 E-banking

To measure the effects, challenges, and opportunities of E-banking usage and to measure the attitudes of the Bank customers, they were asked if they use E-banking. The vast majority, namely 88% of our sample, uses e-banking, and 12% do not use it (Figure 21).

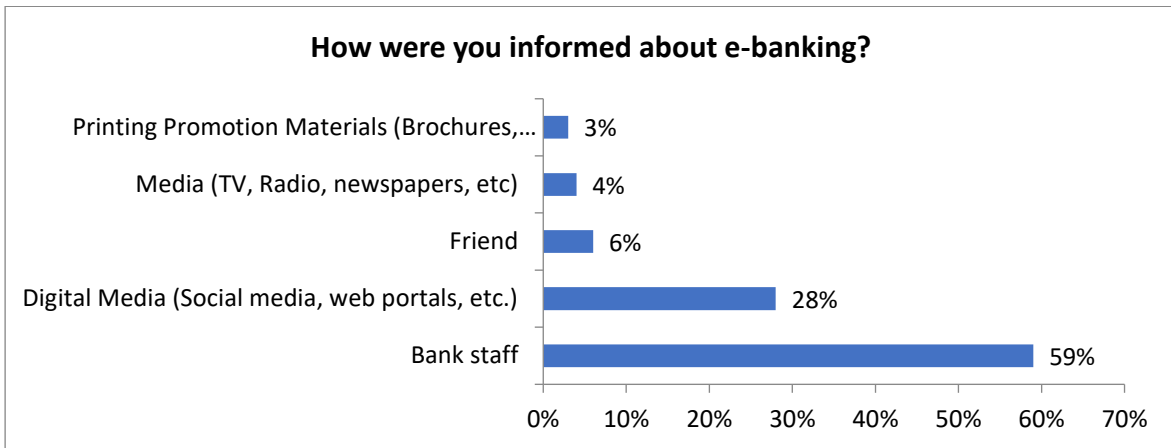
Figure 21: Do you use e-banking? (N=337)



Source: Own work.

In terms of information about e-banking the bank staff seems to be the most important influence in informing about e-banking. 59% of those that use E-banking were informed by bank staff about E-banking, little over a quarter 28% were informed via digital media, 6% by a friend, 4% via media, and 3% via printed promotional materials (Figure 22).

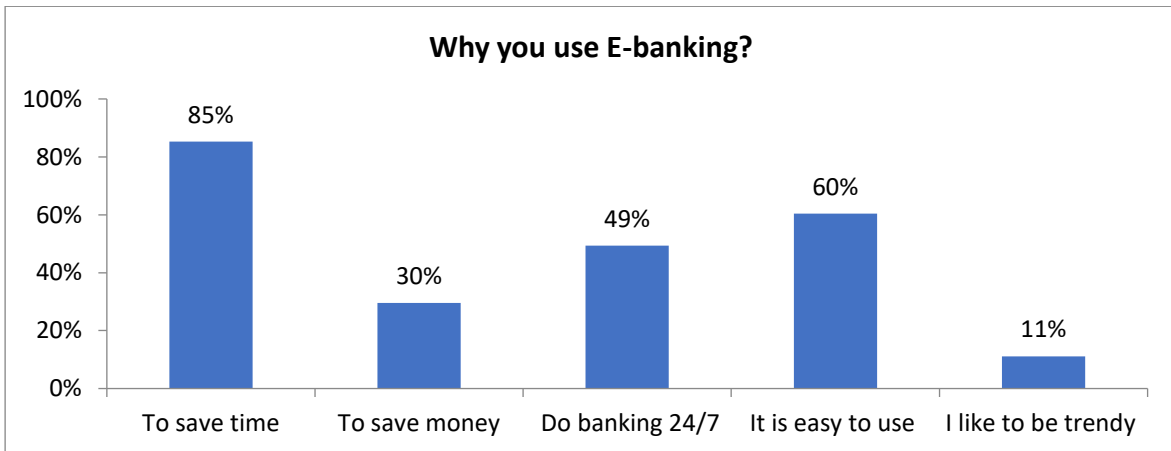
Figure 22: How were you informed about e-banking? (N=298)



Source: Own work.

Of our sample, namely those that use e-banking, the majority of them use it to save time 85%, more than half of the sample 60% because it's easy to use, half of the sample 49% because one can use it 24/7, Little more than a quarter, 30% uses it to save money, and 11% because they want to be trendy (Figure 23).

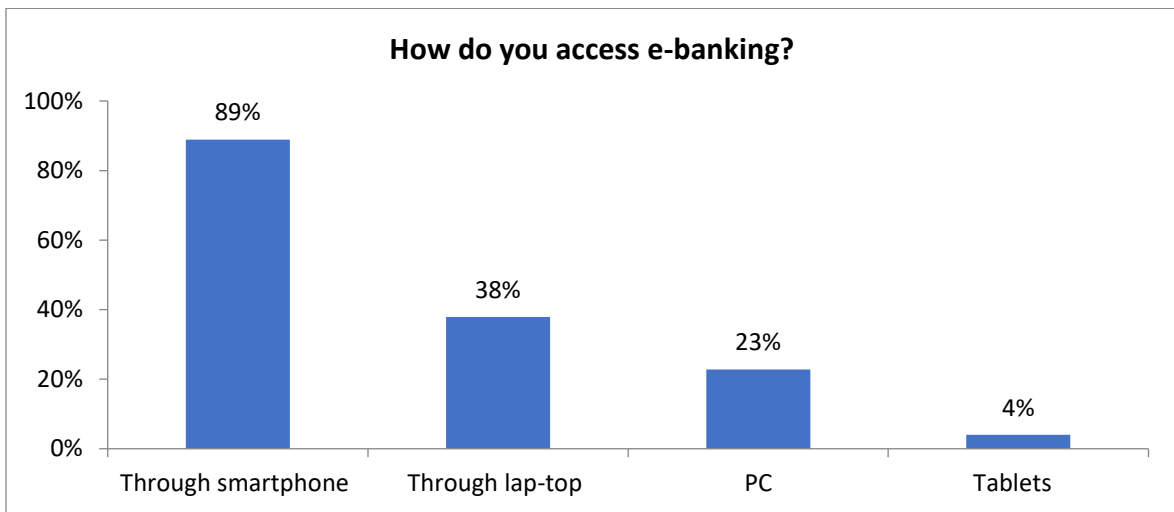
Figure 23: Why you use e-banking? (N=298)



Source: Own work.

Whereas in terms of how they access e-banking, the vast majority declared that they access it through Smartphone 89%, little over one third 38% use it through their laptop, little over a quarter 23%, via PC, and 4% uses it via tablet (Figure 24).

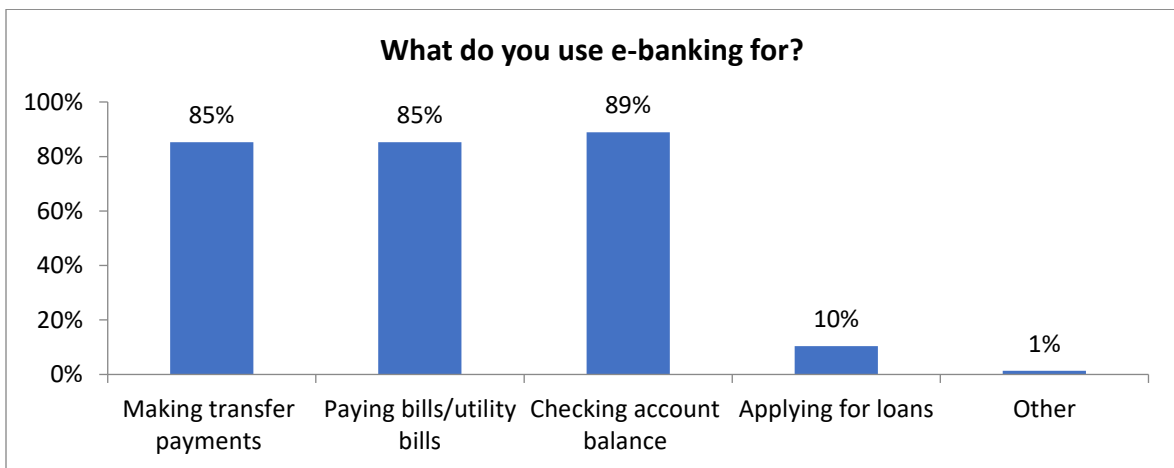
Figure 24: How do you access e-banking? (N=298)



Source: Own work.

The reason for usage of e-banking appears to be high and for a couple of reasons, according to our sample. Almost all 89% use it to check their account balance, and 85% use it to make transfer payments and pay different bills and utilities. Only 10% used it to apply for a loan (Figure 25).

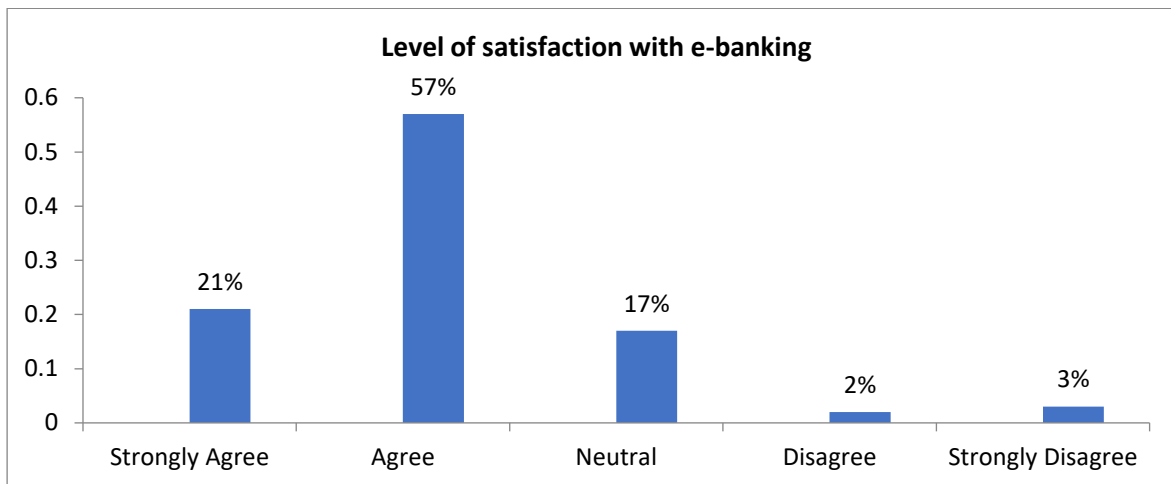
Figure 25: What do you use e-banking for? (N=298)



Source: Own work.

When asked about the level of satisfaction where 78% declared that they are satisfied (strongly agree, and agree), 17% were neutral and 5% were dissatisfied (disagreed and strongly disagreed) with the statement that they are satisfied with the e-banking (Figure 26).

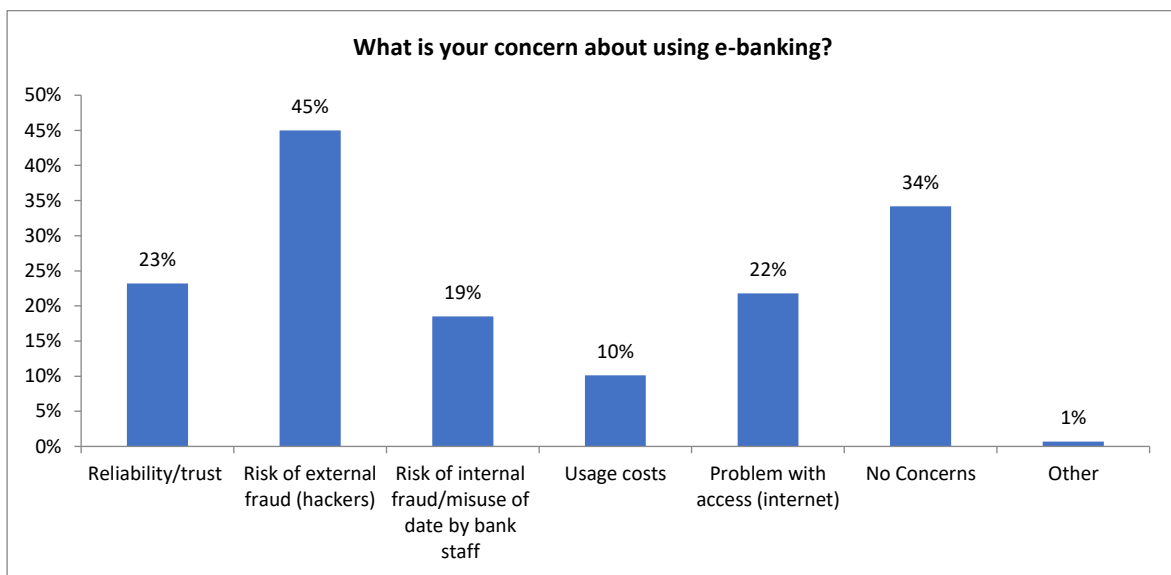
Figure 26: Level of satisfaction with e-banking? (N=298)



Source: Own work.

When asked about what their concerns regarding the usage of e-banking were, the reasons were diverse and only one third has no concerns when using e-Banking. Respondents are afraid of risks from external fraud i.e. hackers, 45%, followed by reliability/ trust issues 23%, they are afraid of internal fraud i.e. misuse of data by bank staff 19%. Another 22% mentioned problems with internet access as an issue, and 10% are concerned about usage costs (Figure 27).

Figure 27: What is your concern about using e-banking? (N=298)



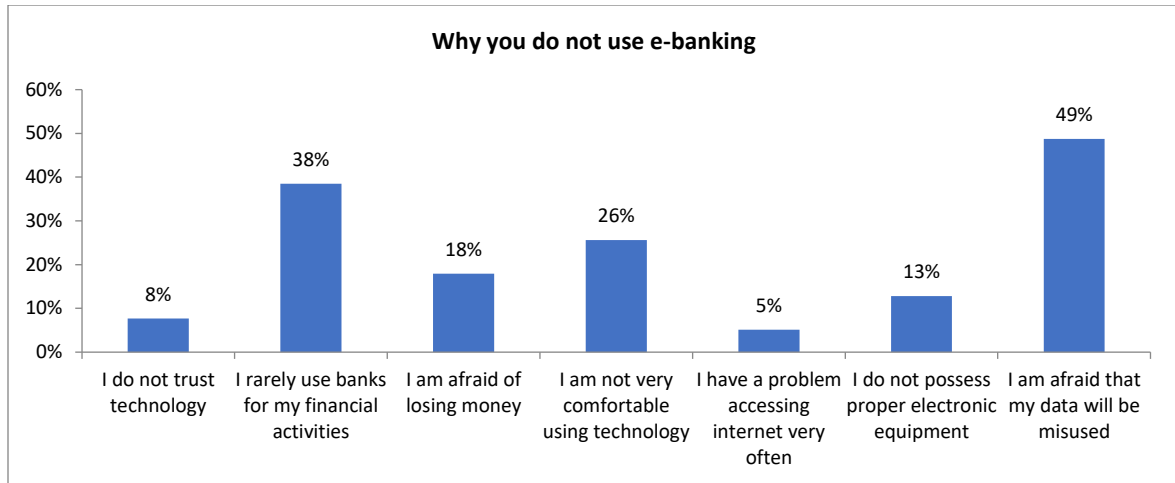
Source: Own work.

Those that declared that they do not use e-banking were asked follow up questions, in order to understand what lead to their behaviour and check challenges and motivators for starting to use it in the future. Reasons for not using e-banking are many and quite diverse. Almost half of those 49% that do not use e-banking are afraid that their data will be misused, 38%



do not use it because they rarely use the Bank for financial activities, 26% are not comfortable using technology, 18% are afraid of losing their money, 13% do not possess electronic equipment's to do so, 8% do not trust technology and 5% claimed that they have problems accessing the internet very often (Figure 28).

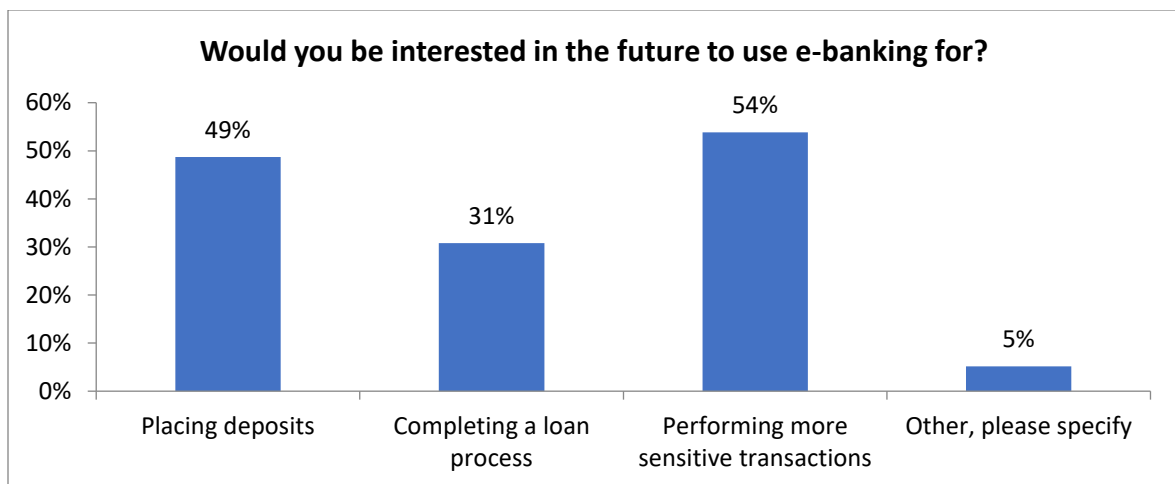
Figure 28: Why you do not use e-banking? (N=50)



Source: Own work.

To check switching intentions, respondents were asked about specific possibilities to be performed via e-banking, and their willingness to do so. More than half of the sample would perform sensitive transactions; almost half of the sample 49% would be interested in place deposits, 31% would complete a loan process, and 5% stated other reasons (Figure 29).

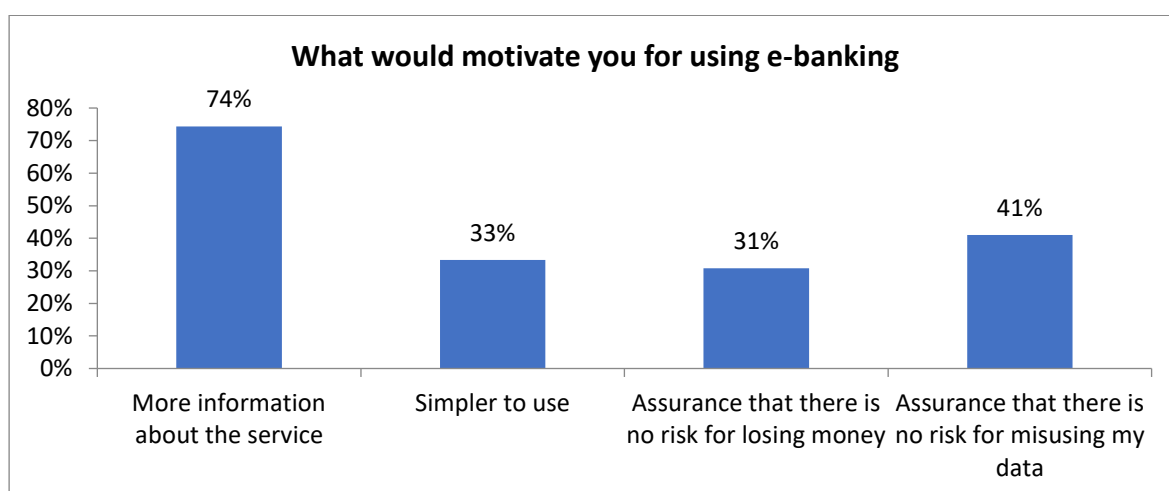
Figure 29: Would you be interested in the future to use e-banking for? (N=50)



Source: Own work.

Whereas the most frequent motivator to start using e-banking stated from our sample (those that do not use e-banking) is more information about the service 74%, follows by assurance that there is no risk in misusing of their data 41%, simpler to use 33% and assurance that there is no risk for losing their money 31%. (Figure 30).

Figure 30: What would motivate you for using e-banking (N=50)



Source: Own work.

To understand whether there is a difference between different demographics in the usage of e-banking services, we have performed crosstabs and looked at chi-square and Fisher's exact test for different demographics like age, gender, education, source of income, monthly income data and residence.

Looking at the crosstabs, we understand that there is a relationship between residence and usage of e-banking (Table 11). The p-value for Chi-square test is .003 for the standard Pearson Chi-square, but also the Fishers exact test, the p-value is -.003, which is below the standard alfa value of .05, so we reject the null hypothesis that there is no relationship between these two variables (Table 12).

The same goes for the monthly income variable. There is a relationship between using e-banking services and the monthly income variable (Tables 13 and 14). The p-value for the Chi square test is .000 for the standard Pearson chi-square but also for the Fishers exact test the p-value is -.000, which is below the standard alfa value of .05. Hence, we reject the null hypothesis that there is no relationship between these two variables.

Table 11: Crosstabs Residence X Usage of e-banking

**Crosstab**

Do you use e-banking?	Where do you live?		Total
	In rural area	In urban area	
- NO	13	26	39
- YES	41	257	298
<b>Total</b>	54	283	337

Source: Own work.

Table 12: Chi- square test, Crosstabs Residence X Usage of e-banking

## Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.820 <sup>a</sup>	1	.002	.003	.003
Continuity Correction <sup>b</sup>	8.420	1	.004		
Likelihood Ratio	8.225	1	.004	.010	.003
Fisher's Exact Test				.004	.003
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.25.

b. Computed only for a 2x2 table

Source: Own work.

Table 13: Crosstabs Monthly income X Usage of e-banking

Crosstab							
Do you use e-banking?	Monthly income (in Euro)						Total
	up to 400€	401-800€	801-1200€	1201-1600€	1601-2000€	Over 2000€	
- NO	12	17	6	1	1	2	39
- YES	15	77	92	37	26	51	298
<b>Total</b>	27	94	98	38	27	53	337

Source: Own work.

Table 14: Chi-square test, Crosstabs Monthly income X Usage of e-banking

### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	43.002 <sup>a</sup>	5	.000	.000
Likelihood Ratio	35.572	5	.000	.000
Fisher's Exact Test	33.231			.000
N of Valid Cases	337			

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 3.12.

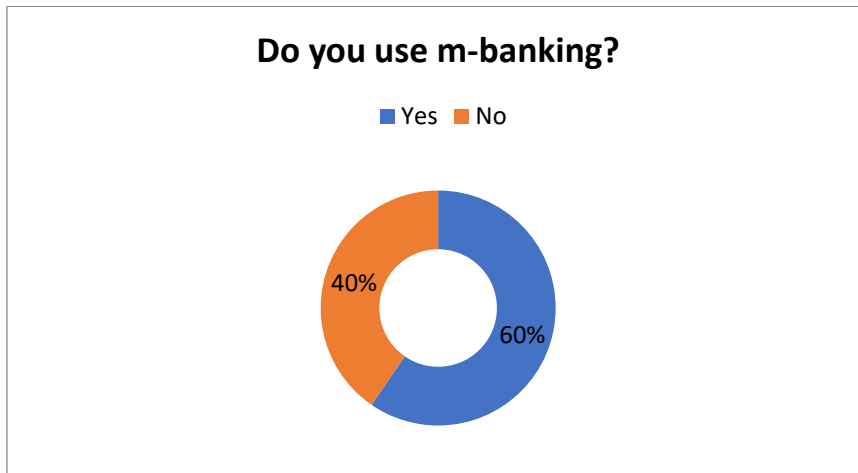
Source: Own work.

Whereas for all other demographic variables, age, gender, education, and source of income, we do not reject the null hypothesis that there is no relationship between the usage of e-banking and the above-mentioned demographic variables (Appendix F).

### 5.2.4 M – banking

To measure the effects, challenges, and opportunities of m banking usage and to measure the attitudes of the Bank customers, they were asked if they use m-banking. More than half, namely 60% of our sample uses m banking, and 40% do not use it. The usage of m-banking is considerably lower compared to e-banking (Figure 31).

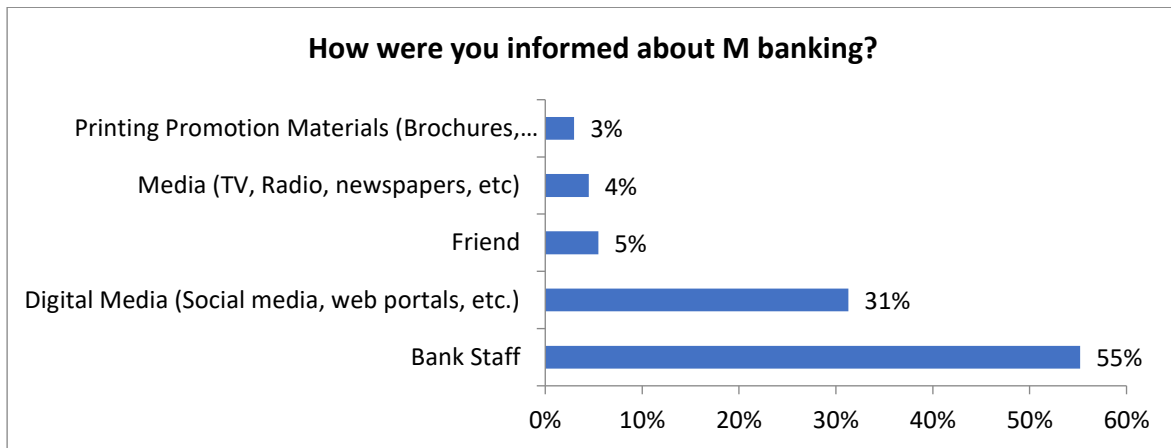
Figure 31: Do you use m-banking? (N=337)



Source: Own work.

In terms of information about m Banking the bank staff seems to be the most important influence in informing about e-banking. 55% of those that use m banking were informed by bank staff about m banking, little over a quarter 31% were informed via digital media, 5% by a friend, 4% via media, and 3% via printed promotional materials (Figure 32).

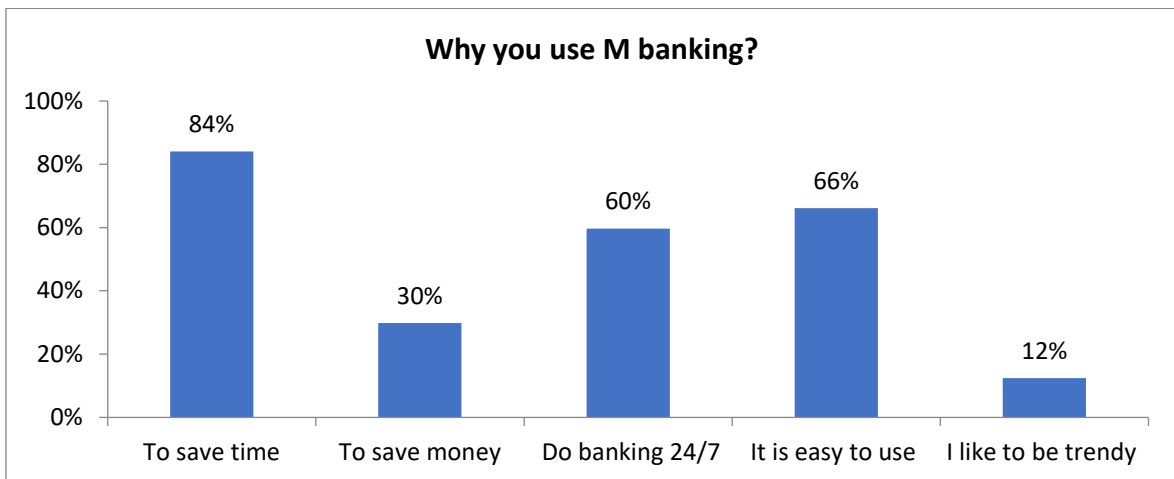
Figure 32: How were you informed about m-banking? (N=201)



Source: Own work.

Our sample, namely those that use m-banking, majority of them use it to save time 84%, more than half of the sample 66% because it's easy to use, more than half of the sample 60% because one can use it 24/7, Little more than a quarter, 30% uses it to save money, and 12% because they want to be trendy (Figure 33).

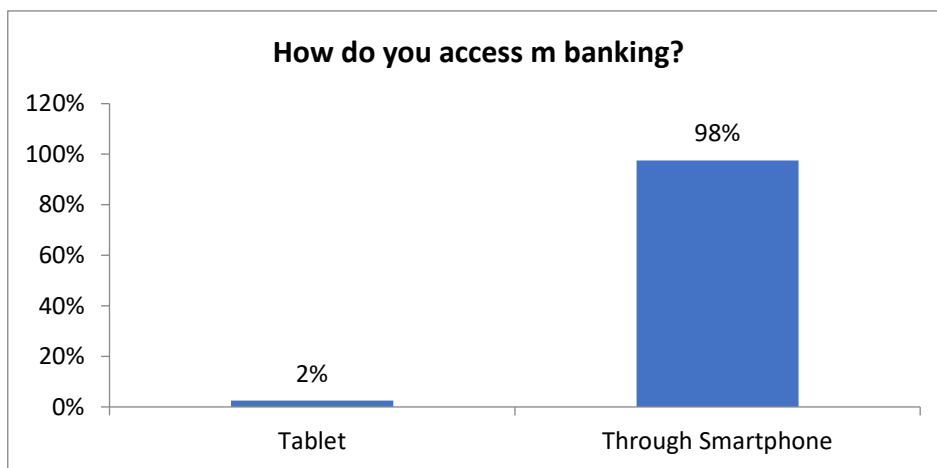
Figure 33: Why you use m-banking? (N=201)



Source: Own work.

Whereas in terms of how they access m-banking, the vast majority declared that they access it through Smartphone 98%, only 2% uses it via their tablet (Figure 34).

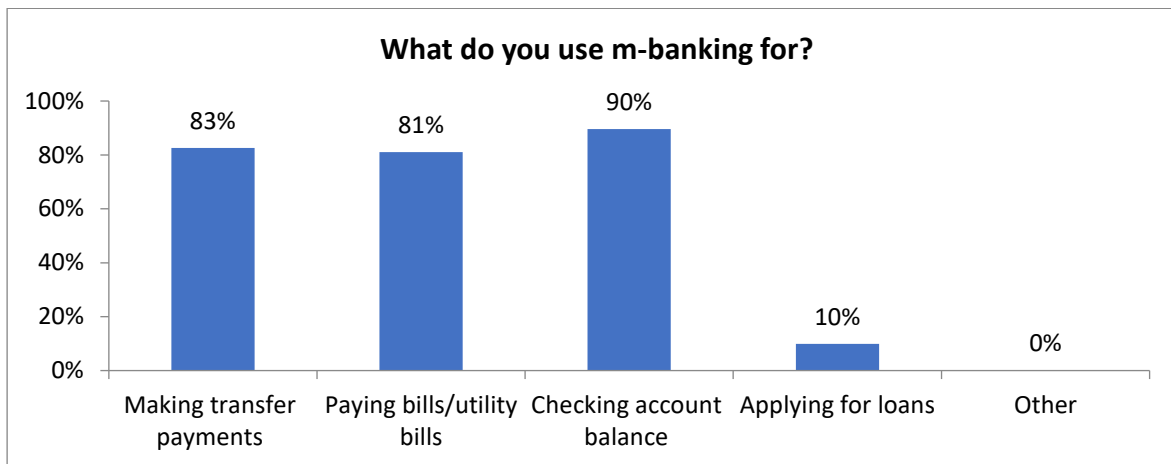
Figure 34: How do you access m banking? (N=201)



Source: Own work.

The reason for usage of m-banking appears to be high, and M banking is to be used for a couple of reasons, according to our sample. Almost all 90% use it to check their account balance, 83% use it to make transfer payments, and 81% to pay different bills and utilities. Only 10% used it to apply for a loan (Figure 35).

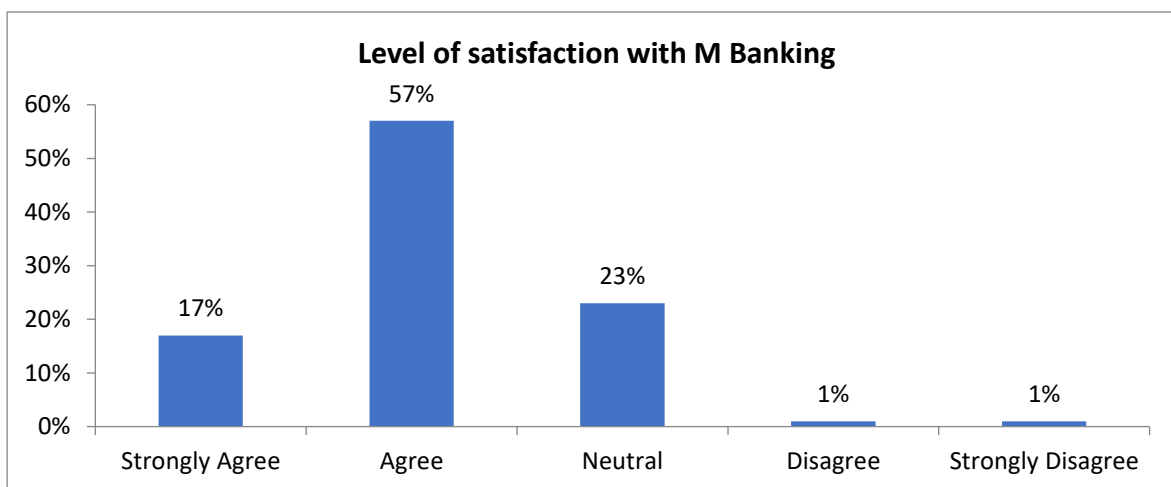
Figure 35: What do you use m-banking for? (N=201)



Source: Own work.

When asked about the level of satisfaction with their m-banking services, 74% declared that they are satisfied (strongly agree, and agree), 23% were neutral and 1% were dissatisfied (disagreed and strongly disagreed) with the statement that they are satisfied with the M banking (Figure 36).

Figure 36: What do you use m-banking for? (N=201)

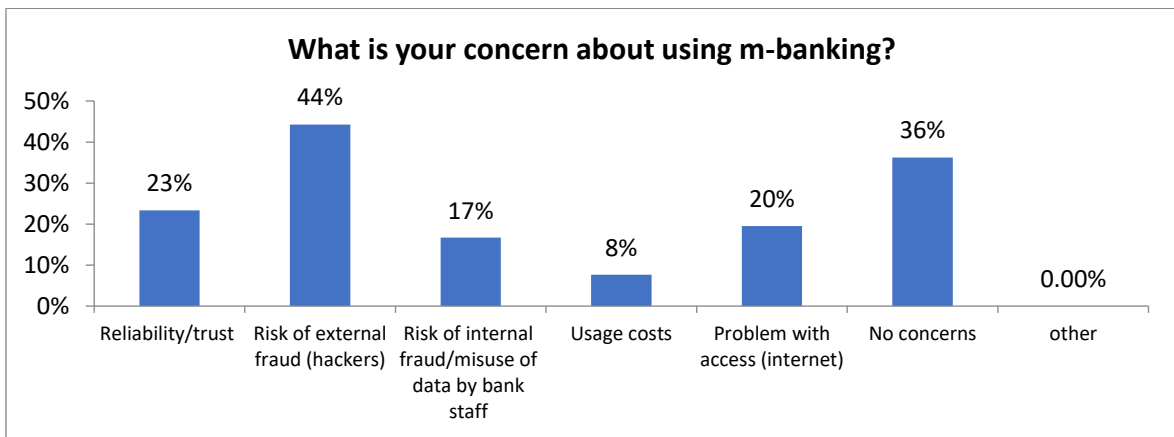


Source: Own work.

When asked about what their concerns regarding the usage of m-banking were, the reasons were diverse, and only one third 36%, had no concerns when using m-banking.

Respondents are afraid of risks from external fraud i.e. hackers 44%, followed by reliability/trust issues 23%, they are afraid from internal fraud i.e. misuse of data by bank staff 17%. Another 20% mentioned problem with internet access as an issue, and 8% are concerned about the usage costs (Figure 37).

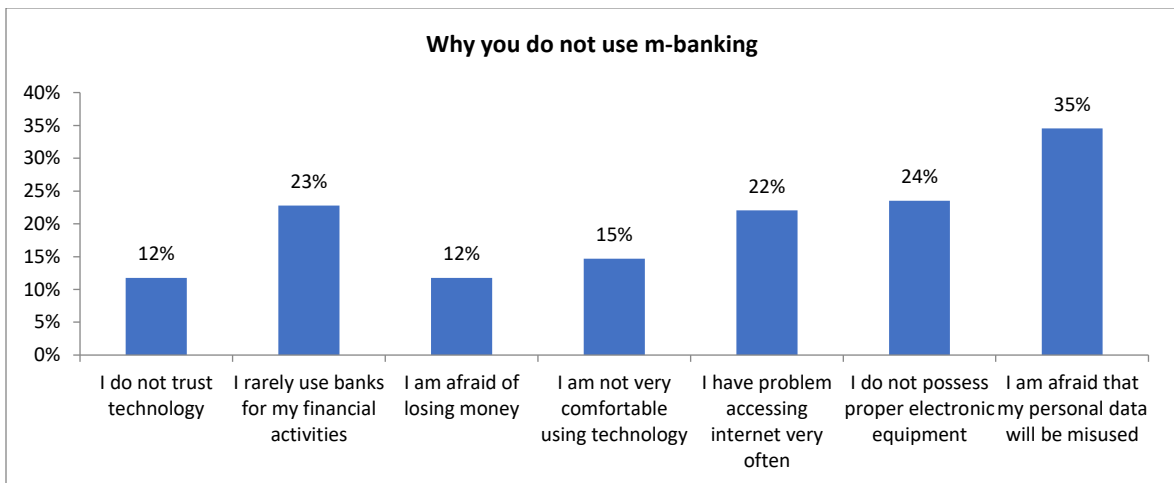
Figure 37: What do you use m-banking for? (N=201)



Source: Own work.

Those who declared that they do not use m-banking were asked follow up questions, in order to understand what lead to their behavior and check challenges and motivators for starting to use it in the future. Reasons for not using m-banking are many and quite diverse. Little more than a third of those 35% that do not use m-banking are afraid that their data will be misused, 24% do not possess electronic equipment to do so, 23% do not use it because they rarely use the Bank for financial activities, and 22% claimed that they have problems accessing the internet very often, 15% are not comfortable using technology, 12% are afraid of losing their money, 12% do not trust technology (Figure 38).

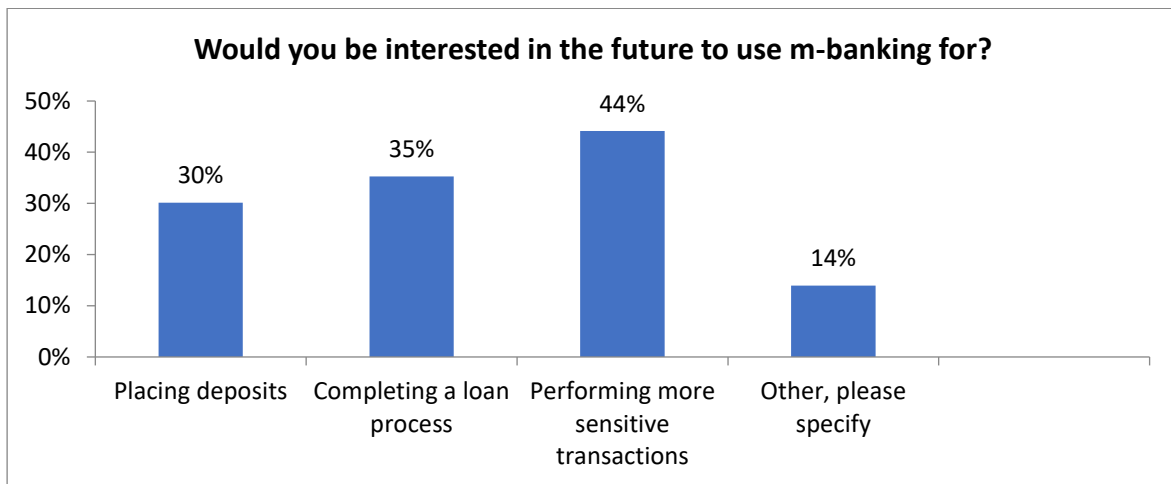
Figure 38: Why you do not use m banking (N=136)



Source: Own work.

In order to check switching intentions, respondents were asked on specific possibilities to be performed via m-banking and their willingness to do so. Almost half of the sample 44% would perform sensitive transactions; 35% would complete a loan process almost one third 30% would be interested to place deposits, and 14% stated other reasons (Figure 39).

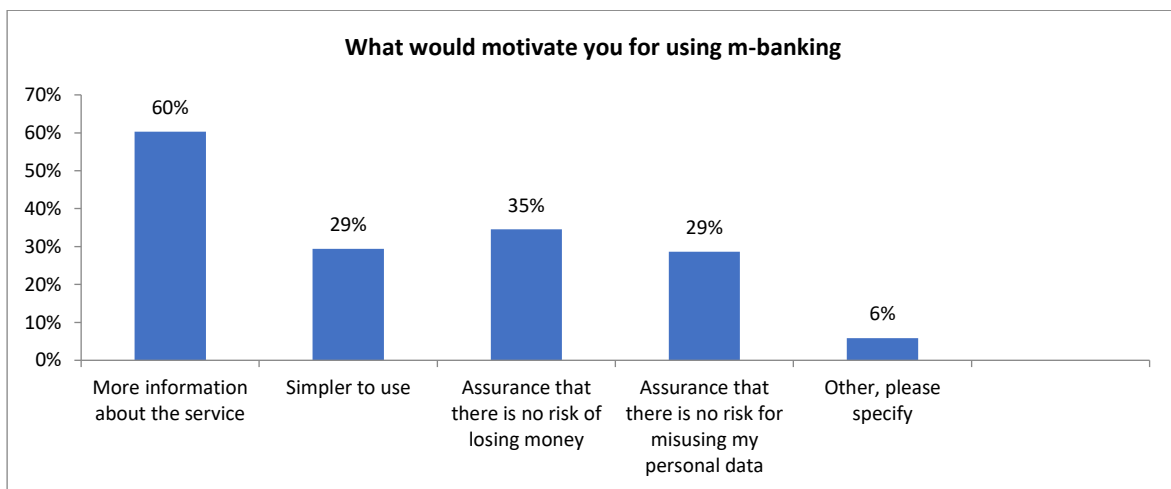
Figure 39: Would you be interested in the future to use m-banking for? (N=136)



Source: Own work.

Whereas the most frequent motivator to start using m-banking stated from our sample (those that do not use e-banking) is more information about the service 60%, followed by assurance that there is no risk for losing their money 35%, and assurance that there is no risk in misusing of their data 29%, and lastly simpler to use 29% (Figure 40).

Figure 40: What would motivate you for using m-banking (N=136)



Source: Own work.

To understand whether there is a difference between different demographics in the usage of m-banking services, we have performed crosstabs and looked at chi-square and Fisher's exact test for different demographics like age, gender, education, source of income, monthly income data, and residence.

Looking at the crosstabs (Table 15), we understand the relationship between gender and the usage of M banking. The p-value for the Chi-square test is .025 for the standard Pearson chi-square, but also the Fishers exact test, the p-value is .025, which is below the standard alfa



value of .05, so we reject the null hypothesis that there is no relationship between these two variables (Table 16).

The same goes for the monthly income variable. There is a relationship between m banking services and the monthly income variable. The p value for the Chi square test is .000 for the standard Pearson chi-square, but also for the Fishers exact test, the p-value is -.000, which is below the standard alfa value of .05, so we reject the null hypothesis that there is no relationship between these two variables (Table 17 and 18).

Table 15: Crosstabs Gender X Usage of m-banking

Crosstab			
Do you use m-banking?	Gender		Total
	Female	Male	
- NO	57	79	136
- YES	62	139	201
<b>Total</b>	119	218	337

Source: Own work.

Table 16: Chi-square test, Crosstabs Gender X Usage of m-banking

Chi-Square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.349 <sup>a</sup>	1	.037	.048	.025
Continuity Correction <sup>b</sup>	3.878	1	.049		
Likelihood Ratio	4.323	1	.038	.048	.025
Fisher's Exact Test				.048	.025
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 48.02.

b. Computed only for a 2x2 table

Source: Own work.

Table 17: Crosstabs Monthly income X Usage of m-banking

Crosstab							
Do you use e-banking?	Monthly income (in Euro)						Total
	up to 400€	401-800€	801-1200€	1201-1600€	1601-2000€	Over 2000€	
- NO	21	42	33	8	12	20	136
- YES	6	52	65	30	15	33	201
<b>Total</b>	27	94	98	38	27	53	337

Source: Own work.

Table 18: Chi-square test, Crosstabs Monthly X Usage of m-banking

Chi-Square Tests				
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	24.479 <sup>a</sup>	5	.000	.000
Likelihood Ratio	25.040	5	.000	.000
Fisher's Exact Test	24.382			.000
N of Valid Cases	337			

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 10.90.

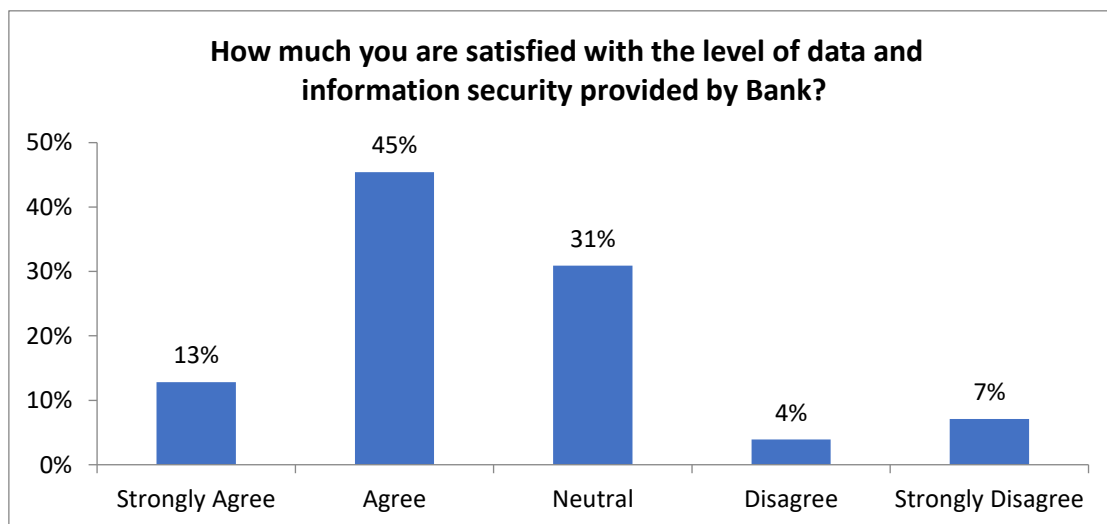
Source: Own work.

Whereas for all other demographic variables, age, education, source of income, and residency, we do not reject the null hypothesis that there is no relationship between the usage of m banking and the above-mentioned demographic variables (Appendix 6).

### 5.2.5 Customer Satisfaction

In the end, we asked our sample to assess their satisfaction with different aspects of their banks, like data security, e-banking, m- banking, and human interaction. When asked whether they are satisfied with the level of data and information security the bank clients are provided by their bank, 58% of them declared that they are satisfied (strongly agree and agree with the statement), and 11% disagreed with the statement (Figure 41).

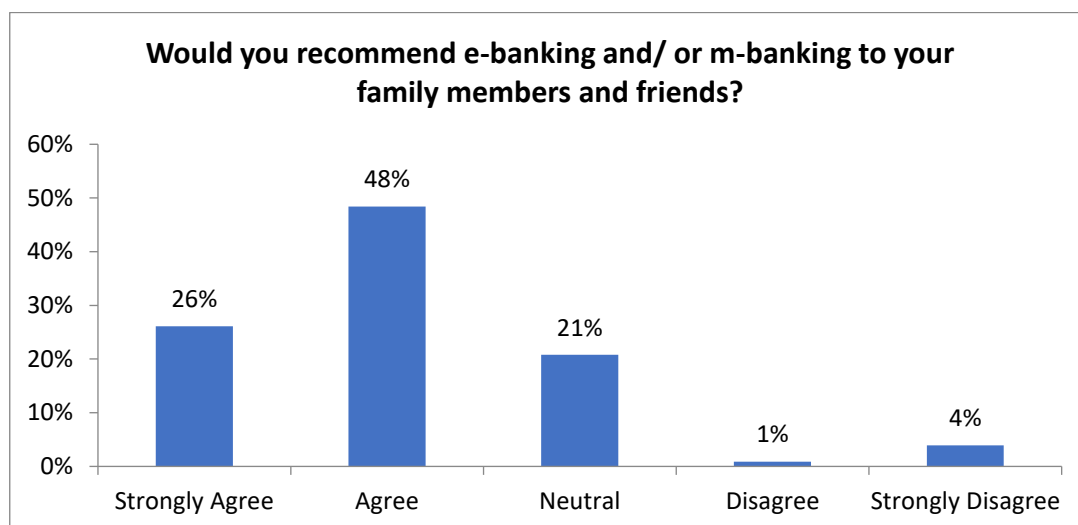
Figure 41: How satisfied are you with the level of data and information security provided by Bank? (N=337)



Source: Own work.

Whereas three-quarters of the bank clients would suggest e-banking and m- banking services (74% of them declared that they agree (strongly agree and agree with the statement), and only 5% disagreed with the statement (Figure 42).

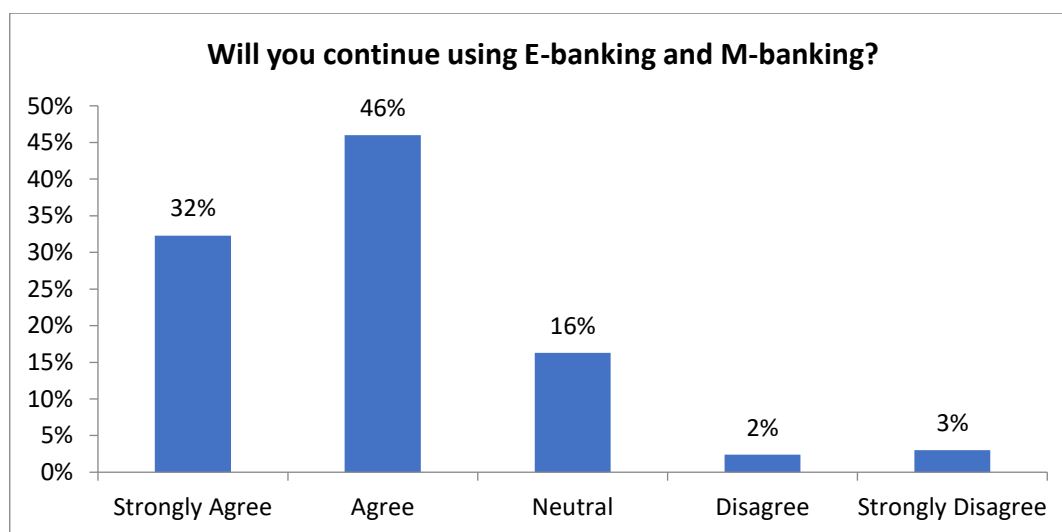
Figure 42: Would you recommend e-banking and/ or m-banking to your family members and friends? (N=337)



Source: Own work.

More than three-quarters 78% of bank clients also agreed with the statement that they would continue using e-banking and m-banking services (Figure 43).

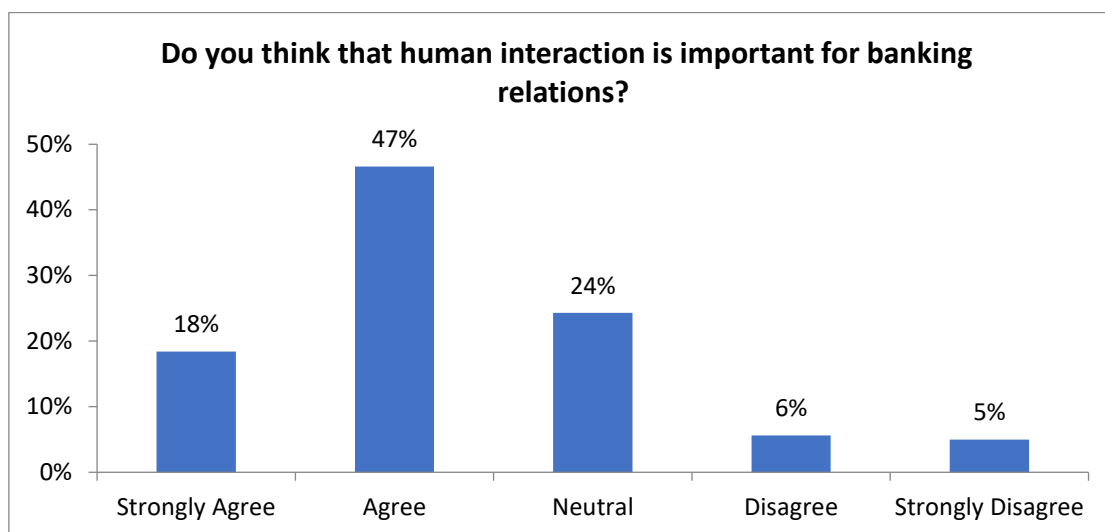
Figure 43: Will you continue using e-banking and e-banking? (N=337)



Source: Own work.

Whereas at last, more than half of the bank clients, namely 65% of them, mentioned that human interaction is important for banking relations, which might explain why e-banking and m-banking services are not solely but are combined with visits to the bank once and so often (Figure 44).

Figure 44: Do you think that human interaction is important for banking relations?  
(N=337)



Source: Own work.

### 5.3 Discussion

The research aimed to provide a more in-depth understanding of the current situation and trends in the e-banking and m-banking industry expected to drive the dynamics of the banking ecosystem in the economy.

The qualitative data analyses of two semi-structured interviews with Central Bank representatives and senior Bank managers and structured interviews with the bank's sales staff helped to understand their experiences and perspectives regarding e-banking and m-banking services. Unfortunately, due to the COVID-19 pandemic, the interviews were conducted online, which might have caused participants to have shorter responses and elaborations.

The interview with the Central Bank representatives aimed to explore the Central Bank of Kosovo's perspective regarding IT-driven services. The results reveal a positive response regarding the alignment between Central Bank's plans (especially regarding rules and regulations), Commercial Bank's objectives, technological developments, changes in customer behavior, and the time frames regarding e-banking and m-banking services.

The positive positioning of CBK for additional digital services means more complimentary services for clients. However, there is also a need for support from the Central government. The Central government is needed, especially in terms of implementing a law on digital signature, which will enable banks to provide more products and services through e-banking and m-banking and perform "end-to-end" services through these two platforms. These findings align with the study of Mohammadi (2015), who said that clients want all services to be completed online. CBK representative sees e-banking and m-banking as a service that

will increase efficiency and enable clients to perform banking services anytime and from anywhere. Similar to the study in Tunisia (Nasri, 2011), CBK believes that the customers' technical knowledge is one of the challenges for adopting e-banking and m-banking. In this regard, they think banks should keep branches since customer segment groups are still not ready to embrace digital services.

Additionally, CBK representative emphasized that offering banking services through digital channels increases efficiency and enables customers to do banking services more conveniently. They have also reduced several risks, especially those related to safety and security, which aligns with the results of the study by Sumra, Manzoor, Sumra, and Abass (2011). CBK representative also stated that the digital channels have proven to significantly reduce the informal economy, which is an additional benefit for the country.

The semi-structured interview with the senior bank management aimed to understand the main drive for adopting Kosovo banks' e-banking and m-banking platforms. This study revealed that efficiency, customer segment, customer education, and willingness to be on the trend with technological developments are key factors influencing the adoption of e-banking and m-banking in Kosovo. Contrary to the study of Kallanmarthodi and Viathiyanathan (2012), most (60%) of the Kosovo Bank's senior management believes that e-banking and m-banking are related to particular customer segments. However, there are opinions (10%) that this is more related to customer awareness than a particular segment.

According to the bank's senior management, the main challenges for the nonsuccess of these two services are related to security reasons (clients are afraid that it is too risky to do banking through digital channels) and the level of education primarily associated with technology. These findings are in line with the studies of Rameook-Munhurrin and Naidoo (2011) and Nasri (2011). The main objectives that banks aim to achieve by introducing these two services are increasing efficiency, improving customer service, and being competitive. These findings are aligned with the results of the studies done by Driga and Isac (2014) and Chaimaa, Najib, & Rachid (2021), Yang, Jun, and Peterson (2004), Mahfooz (2014), Kurnia, Peng, & Liu, 2010; and Driga & Isac (2010), and Najib and Rachid (2021). In addition, by the introduction of e-banking and m-banking services, one bank aimed to increase access to finance, which was also reported similarly on the study of Okibo and Wario (2014). Even though most banks are investing less than 25% of the marketing budget promoting these two services, almost all are planning to increase investments in promoting digital channels, similar to the study of Mohammadi (2015).

Customer complaints are mainly related to technical issues, which is aligned with the study of Marimon, Petnji Yaya, & Casadesus Fa (2012). The results reveal that staff perception regarding the bank's launch of these two services was quite mixed. Some of them, especially tellers, expressed the fear that they might be replaced by digital channels, while others were more positive because they saw this as an opportunity to work more efficiently. Still, bank clients must visit the branches due to a lack of legislation regarding digital signatures. Such

findings align with CBK representatives, which revealed a need for the Central Government's involvement, especially in implementing a law on the digital signature. Digital Signature will enable banks to provide more products and services through e-banking and m-banking and perform “end-to-end” services through these two platforms. All Senior Managers consider the launch of these two services successful. Only around 20% of them declared that more than 80% of their clients use these two services.

According to Senior Management, an increase in usage of e-banking and m-banking is one of their three years objectives, which is similar to the study of Klynveld Peat Marwick Goerdeler (KPMG) international (2017). Banks are planning to provide additional services through e-banking and m-banking since most do not think other digital services will cannibalize these two services.

By discussing with the bank's sales staff, we understood the perspective of bank staff who directly interact with customers regarding these two services. Through this research, we tried to reveal the main drivers and challenges for the success or unsuccess of e-banking and m-banking from the perspective of the bank's sales staff. The research found that bank sales staff have targets related to e-banking and m-banking service, and they see targets as very important for the success of these two services. Similar to the results of Marimon, Petnji Yaya and Csadesus Fa study (2012), bank's sales staff thinks that one of the main reasons for the non-success of these two services is customers do not feel comfortable with digital services. This study revealed that clients need to be more aware of e-banking and m-banking services, which aligns with the Mohammadi study's results (2015). In addition, they see customer trust as another important factor for the success or non-success of these two services, which result is the same as those from the study of Lu, Yang, Chau, and Cao (2011) and Hanafizadeh, Behboudi, Koshksaray, and Tabar (2014). Similarly to the study of Rauibah, Ramayah and May (2011), the client's comfort with digital services is another important factor in the bank's sale staff perspective.

The quantitative data analyses reveal that e-banking (88% of the sample) usage and m-banking (60%) use is high amongst bank clients in Kosovo (E-banking usage is considerably higher). Nevertheless, banks are still visited by 10% of the sample in person at the bank, and 49% combined in-person and online. Banks are seen mainly for specific tasks like signing documents, 47%, completing sensitive transactions, 31% to get better informed regarding their products, terms, and condition, and 9% mentioned other reasons like exchanging money and others. That is also because doing some of these tasks via e-banking or m-banking is still impossible. Kosovo bank clients also value human contact. 65% of them mentioned that human interaction is important for banking relations, which might explain why e-banking and m-banking services are not solely but are combined with visits to the bank once and so often.

Clients were mainly informed by bank staff to use e-banking and m banking. As a result, from the 88% of the sample using e-banking and 60% using m-banking, e-banking, 85% or

m-banking, 84% are used to save time and 60% and 64%, respectively, because it is easy to use. E-banking and m-banking are mainly utilized by smartphones, 89%, and 98%, respectively. Whereas, those that do not use e-banking and/ or m-banking could be because they are afraid that their data will be misused 49% and 35% respectively and would need more information to start using them 74% and 60%, respectively. This is in line with the statement of the Bank's senior management, declaring that one of the main challenges for the nonsuccess of these two services is related to security reasons. Similarly, findings align with the research results of the bank's sales staff, which revealed that clients need to be more aware of e-banking and m-banking services. Satisfaction with the bank generally, but also with e-banking and m-banking, is relatively high amongst the sample.

Clients use e-banking and m-banking mainly for checking account balances, 89%, and 90%, respectively, paying utility bills, 85% and 81%, respectively, and making transfer payments, 85% and 83%, respectively. It is much less used for loan applications, 10% respectively.

Most clients are positive regarding continuing the usage of these two services, 74% and 78%, respectively.

The usage of e-banking and m-banking is highly correlated with the geographical distribution of clients. For example, the usage rate of e-banking is 91% in urban areas while 76% in rural areas. Also, the preference to perform banking services by visiting the branch is higher in rural areas, 16.7%, compared with urban areas, 8.5%. This is also highly correlated with income level, where 40.7% of the clients with a monthly income visit bank branches to perform their banking services, while only 1.9% of the clients with a monthly income over 2,000 EUR do so.

The research has shown that usage of m-banking is related to gender as well, where 63.8% of males and 36.2% of females use m-banking while regarding e-banking, the results are very balanced, 89.1% and 88.1%, respectively. The usage of e-banking and m-banking is also correlated with clients' income level, where the use of e-banking and m-banking to customers with a monthly income of up to 400 euros is 55.6% and 22.2%, respectively. While the usage of these two services from customers with a monthly income over 2000EUR is 88.4% and 59.6%, respectively.

The main reason why clients do not use e-banking and m-banking is related to the concern that their data will be misused, 49% and 35%, respectively, followed by not using banks for financial activities, 38%, and 23%, respectively, not very comfortable with technology, 26% and 15% respectively, are afraid of losing money, 18% and 12% respectively, do not possess proper electronic equipment, 13%, and 24%, do not trust technology, 8% 12% respectively, and have problem with internet access, 5%, and 22% respectively.

Risk of external fraud is the main concern for using e-banking and m-banking, 45% and 44%, respectively, followed by reliability/trust, 23% for both services, problems with internet access, 23%, and 20%, respectively, risk of internal fraud/misuse of data (19% and

17% respectively) and usage costs, 10% and 8% respectively. Clients would use e-banking and m-banking if they had more information regarding these two services, 74% and 60%, respectively, assurance that there is no risk of losing money, 31% and 35%, respectively, assurance that there is no risk of misusing data, 41%, and 29% respectively, and user-friendly/simple to use, 33% and 29% respectively. Clients are also willing to use e-banking and m-banking to perform more sensitive transactions, 54% and 44%, respectively, placing deposits, 49% and 30%, and completing a loan process, 31% and 35%, respectively. This goes in line with the results of the research with CBK representatives, who revealed that performing banking services through digital channels is more efficient and less costly for the client and mitigates several risks. This aligns with the study results of Mohammadi (2015), who stated that in Iran, m-banking should enable customers to perform all the transactions they want through digital channels and increase the performance of the m-banking applications.

## **CONCLUSION**

In conclusion, considering the growth of information communication technology in recent years in banking services, e-banking services, even in developing countries such as Kosovo, has been widely spread and are a critical need for bank staff and consumers. With the extensive usage of e-banking and m-banking in Kosovo, the future development of digitalization is dependent on the Central Bank, the Central government, and the bank's strategy. It was evident that the urge for new advancement was present among the interviewers and the participants in the questionnaire. Therefore, the future of e-banking and m-banking should be tailored to bank staff' and customers' readiness for rapid adoption and adaption of digital products. Furthermore, the banks must keep up with the competition, regardless of client structure or the bank's concentration on a specific customer base. They must invest more in upgrading the various electronic platforms to provide clients quick access to the bank's products and services. Even though the trend of growth for e-banking accounts was very positive, we still think there is more potential for that, considering that only 23% of the bank accounts are attached to e-banking accounts. Adding the fact that the projection for Kosovo's GDP growth is optimistic, and the performance of Kosovo's banking sector is one of the bests in the region, increases the optimism for the success of these two products as well.

Banks should be more ambitious regarding these two services keeping in mind that Kosovo's population is very young, the internet penetration is relatively high, the number of smartphones is very high, and clients are willing to use digital channels. To do so, banks should invest more in marketing to promote these two services.



One area where banks should focus is increasing clients' awareness regarding the security aspect of these two services, especially regarding the misuse of data and money. Banks also should have a clear internal communication strategy trying to have the support of all staff regarding these two services since success is mainly dependent on the bank's staff. The introduction of a bonus scheme linked with these two services will positively impact the success of e-banking and m-banking.

CBK and Bank's management should advocate and push the law's implementation on the digital signature since this will significantly impact the providing additional banking products and services through e-banking and m-banking, increase the bank's efficiency, reduces client costs, and improve customer service.

### Limitations

The study adds to the empirical data concerning the banking sector, e-banking and m-banking services, and user perception and attempts to explain these phenomena in the local context of Kosovo society. The study does, however, contain some limitations when analysing the data. The study only used a larger sample of urban area participants. Therefore, the results may not be generalizable. Furthermore, the convenience sampling strategy was adopted for this study. For example, the google form was used to collect the data, which has several limitations, excluding most of the population that might not have seen the questionnaire or do not have access daily to devices and the internet. Therefore, the results of such sampling may not be representative of the intended population. Another limitation is related to the lack of official data regarding m-banking, which limited the possibility of evaluating trends of this service. All of this creates a new research agenda for the future. Any future researcher investigating a comparable issue must explore these characteristics and attempt to perform a large-scale survey to ensure that the results are representative and generalizable. The conclusions of this study will assist banks in increasing their sales through e-banking and m-banking services. However, the findings of this study may not be thorough, and further research is required to validate the results. Future studies should also include the central government, especially the agency for data protection, to see their view on providing banking services through digital channels, especially regarding data protection and misuse of data.

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## **APPENDICES**



## **Appendix 1: Povzetek (Summary in Slovene language)**

### **POVZETEK**

V zadnjih desetletjih so se zahteve in potrebe strank po storitvah korenito spremenile, predvsem zaradi tehnoloških sprememb. Da bi se banke odzvale na te spremembe, so prilagodile način poslovanja in ponudile bančne storitve, ki temeljijo na tehnologiji. Zagotavljanje bančnih storitev, ki temeljijo na tehnologiji, je poleg tega, da je zelo pomembno za zadovoljevanje potreb in povpraševanja strank, tudi takojšnja potreba bank za preživetje na zelo konkurenčnem trgu. To je bankam pomagalo povečati učinkovitost, povečati širi tržni doseg in povečati svoje dobičke. Prav tako so stranke s temi storitvami prihranile svoj čas in svoje bančne storitve opravljale na veliko udobnejši način. E-bančništvo in m-bančništvo sta dve glavni bančni storitvi, ki temeljita na tehnologiji.

Namen magistrskega dela je bil bolje razumeti učinke e-bančništva in m-bančništva v bankah na Kosovu, izzive, s katerimi se soočajo banke in komitenti, ki uporabljajo ti dve storitvi, kot tudi uskladitev tehnološko usmerjenih storitev, predvsem e-bančništvo in m-bančništvo z bančnimi strategijami. Drugi cilj raziskave je bil identificirati kritične izzive, ki jih je treba premagati, in bistvene dejavnike, ki vplivajo na uspeh teh dveh storitev. Nadalje razumevanje, ali imajo struktura banke, vrsta in segmenti strank odločilno vlogo pri uspehu in možnostih teh dveh storitev.

V tej študiji je bila uporabljena mešana raziskovalna metodologija z zasnovo "exploratory sequential mixed method", ki se je začela z zbiranjem in analizo kvalitativnih podatkov, ki ji je sledilo zbiranje in analiza kvantitativnih podatkov. Polstrukturirani intervjuji so bili opravljeni s predstavniki Centralne banke Kosova (n=1), višjim vodstvom banke (n=10) in s komercialisti banke (n=20) so bili opravljeni strukturirani intervjuji. Ugotovitve kvalitativne analize podatkov so bile uporabljene za oblikovanje vprašalnika za zbiranje kvantitativnih podatkov (n=337). Za analizo kvalitativnih podatkov je bila uporabljena tematska analiza, za kvantitativne podatke pa statistični paket SPSS za družboslovje.

Na podlagi rezultatov te raziskave lahko sklepamo, da smo pridobili jasnejši pregled ne le nad izzivi, skozi katere so šle tako banke kot stranke pri uporabi e-bančništva in m-bančništva na Kosovu, ampak tudi o možnostih za nadalje razvijali e-bančništvo in m-bančništvo. S to raziskavo so bila identificirana področja, na katerih morajo delati vsi zainteresirani, tako da te storitve uporablja veliko strank kosovskih bank.

Ključne besede: banking system, e-banking, m-banking, technology, client, customer service.

## **Appendix 2: Semi-Structured Interview Questions for Central Bank Representatives.**

1. Name of the interviewee: \_\_\_\_\_
2. Position of the interviewee: \_\_\_\_\_
3. Is there any legal obstruction for Financial Institutions to adopt e-banking and m-banking?
4. Do you think digital channels should become the leading Financial Institution's channel for delivering their financial services?
5. Why do you think digital channels should become the leading Financial Institution's channel for delivering their financial services?
6. Why do you think digital channels should not become the leading Financial Institution's channel for delivering their financial services?
7. What would be Central Bank's approach if Financial Institutions provide additional products and services through m-banking, i.e., loans?

### **Appendix 3: Semi-Structured Interview Questions for Bank's Senior Management.**

1. Name of the bank: \_\_\_\_\_
2. Position of the interviewee:
3. Bank Type (please highlight):
  - a. Retail
  - b. Corporate
  - c. Mixed
4. Bank's Market Place/rank in terms of assets (please highlight):
  - a. 1st place
  - b. 2nd place
  - c. 3rd place
  - d. 4th place
  - e. + 4th place

(Questions 5 to 25 requests a text entry, please feel free to write as much as you want in all of the questions below)

5. Are E-banking and M-banking essential services for your bank?
6. Which banking services/transactions can customers do through E-banking and M-Banking?
7. Do you consider the launch of these two services as successful?
8. How many of your customers are using E-banking and M-Banking?
  - a) Up to 20%
  - b) 21%-50%
  - c) 51%-80%
  - d) Over 80%
9. What were the main reasons/challenges for the success/nonsuccess of these two services?
10. Do you think the usage of these two services is related to the customer segment? Can you please elaborate?
11. What was the objective you wanted to achieve by introducing these two services?

12. Have you ever done market research with customers regarding these two services, and what were the outcomes?
13. Do you have complaints from customers regarding these two services? What are the main reasons?
14. How was perceived the launch of these two services by bank staff? Do they fear that technology-driven banking products and services will replace them?
15. Was the launching of these two services linked with any social objective?
16. Who is your target (which client segment), and why?
17. Are clients obliged to come to your branches to complete different services physically, and why?
18. Is current Kosovo's legal environment supportive/appropriate for banking financial services?
19. What would be your suggestion for changes in laws, rules, and regulations?
20. Is the increase in the usage of these two services one of the banks' three-year objectives, and why?
21. Do you invest in marketing and promotion activities for e-banking and m-banking? How much of your marketing budget is spent on these two services?
22. Do you plan to increase investments in marketing and promotion activities regarding these two services, and by how much (in %)?
23. Do you plan to provide additional services through e-banking and m-banking?
24. Do you think these services are at risk of being cannibalized by other digital services, and why?
25. Do you think that electronic commerce is a threat to E-banking and M-banking?

## Appendix 4: Structured Interview Questions for the Bank Sale Staff

**Note:** The scale 1 to 5 is used by the interviewer to scale the interviewee's opinions by 1- indicating **strongly disagree** and 5- **strongly agree**. (Please highlight the question whenever possible)

1. Do you have targets on the number of **e-banking** sold per period (month/quarter/semi-annually or annually)?

Yes

- If the answers in question 1. is **NO**, then ask: Do you think that bank should introduce targets for this service?

Yes

- If the answers in question 1 are YES, ask, Do you meet targets for e-banking?

\_\_\_\_% (of target achievements)

2. Is it difficult to meet targets for e-banking?

Yes

3. Why do you think that it is challenging to sell e-banking service to customers? (Ask if the interviewee in scale 1-5 their answer – 1- indicating **strongly disagree** and 5- **strongly Agree**). (Please use the ✓ sign to complete your answers). Is it because of:

- a. Costumers do not have trust in digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

- b. Costumers do not feel comfortable with digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

- c. Costumers do not have appropriate devices for digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

- d. Costumers think that digital services are very expensive

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

e. Clients are not aware enough about this service

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. Do you have bonuses linked with the targets on **e-banking**?

Yes

a. If the answer in question 2) is NO, do you think that bank should apply bonuses for meeting e-banking targets. (Ask if the interviewee in scale 1-5 their answer - 1 indicating **strongly disagree** and 5 **strongly Agree**)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. Do you think that e-banking is very convenient for customers? (Ask if the interviewee in scale 1-5 their answer - 1 indicating **strongly disagree** and 5 **strongly Agree**)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Do you have targets on the number of **m-banking** sold per period (month/quarter/semi-annually or annually)?

Yes

- If the answer in question 6. is **NO**, then ask: Do you think that bank should introduce targets for this service

Yes

- If the answers in question 1 is **YES**, then ask: Do you meet targets for m-banking?

\_\_\_\_% (of target achievements)

7. Is it difficult to meet targets for m-banking?

Yes

8. Why do you think that it is challenging to sell m-banking services to customers? (Ask if the interviewer in a scale 1-5 their answer - 1 indicating **strongly disagree** and 5 **strongly Agree**). Is it because of:

a. Costumers do not have trust in digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

b. Costumers do not feel comfortable with digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

c. Costumers do not have appropriate devices for digital services

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

d. Costumers think that digital services are very expensive

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

e. Clients are not aware enough about this service

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. Do you have bonuses linked with the targets on **m-banking**?

Yes  No

10. If the answer to question 9 is NO, do you think that bank should apply bonuses for meeting m-banking targets? (Ask if the interviewee in scale 1-5 their response - 1 indicating **strongly disagree** and 5 **strongly Agree**)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. Do you think that **m-banking** is very convenient for customers? (Ask if the interviewee in scale 1-5 their answer - 1 indicating **strongly disagree** and 5 **strongly Agree**)

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

## **Appendix 5: Questionnaire for the Bank Clients**

Dear Participant,

I invite you to participate in a study entitled: E-banking and M-banking in Kosovo: Effects, challenges, and opportunities. I am currently enrolled in the master's program at the University of Ljubljana School of Economics and Business and am writing my Master's Thesis. The research aims to determine the effects, challenges, and opportunities of e-banking and M-banking in Kosovo. The enclosed questionnaire has been designed to collect information on what are the current challenges that you face regarding sales of these two services.

Your participation in this research project is entirely voluntary. You may decline altogether or leave blank any questions you don't wish to answer. Your responses will remain confidential and anonymous. No one other than the researchers will know your answers to this questionnaire. If you agree to participate in this project, please answer the questionnaire's questions as best you can. It should take approximately 20 minutes to complete.

If you have any questions about this project, please contact Hashim Sejdiu at 049 946 364 or email [hsejdiu@yahoo.com](mailto:hsejdiu@yahoo.com), [hashasejdiu@gmail.com](mailto:hashasejdiu@gmail.com)

Thank you for your assistance in this important endeavor.

Sincerely yours,

Hashim Sejdiu



1. Age

- a) 18-25 years
- b) 26-35 years
- c) 36-45 years
- d) 56-65 years
- e) +65 years

2. Gender

- Male       Female

3. Education

- a) Primary school
- b) Secondary school
- c) Bachelor degree
- d) Master
- e) PhD

4. Occupation/sources of income from

- a) Salary earner
- b) Micro Business
- c) SME (Small and Medium Enterprise)
- d) Corporate business
- e) Agro Business/farming
- f) Remittances/from diaspora

5. How do you receive the money?

- a) In cash       b) Through bank accounts

6. Where do you live

- a) In rural area       b) In urban area

7. Monthly income (in EUR)

- a) Up to 400€
- b) 401-800€
- c) 801-1200€
- d) 1201-1600€
- e) 1601-2000€
- f) Over 2000€

8. How do you perform your banking services?

- a) By visiting bank branches
- b) Online
- c) Combined (branch visit and through online channels)

9. Why do you visit the branches of the bank?

- a) To sign documents
- b) To get better informed regarding their products, terms, and conditions
- c) To complete sensitive transactions
- d) Other services

10. How often do you visit a branch of the bank?

- a) Once a year
- b) Few times in a year
- c) Once a month
- d) Few times a month
- e) Once a week
- f) Almost daily

11. Are you satisfied with the services of your bank?

- Yes     No

If your answer in question 11 is **YES** on scale 1-5, with 1 indicating **strongly disagree** and 5 **strongly agree**, how much you are satisfied?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. Do you use e-banking?

- Yes     No

**If your answer to question 12 is YES, answer the following questions**

13. How were you informed about e-banking?

- a) Media (TV, Radio, newspapers, etc)
- b) Printing Promotion Materials (Brochures, leaflets)
- c) Digital Media (Social media, web portals, etc.)
- d) Bank staff
- e) Friend

14. Why you use e-banking?

- a) To saves time
- b) To save money
- c) Do banking 24/7
- d) It is easy to use
- e) I like to be trendy

15. How do you access e-banking?

- a) Through smartphone
- b) Trough lap-top
- c) PC
- d) Tablets

16. What do you use e-banking for? Check all that apply

- a) Making transfer payments
- b) Paying bills/utility bills
- c) Checking account balance
- d) Applying for loans
- e) Other

17. On a scale of 1 to 5, with 1 indicating **strongly disagree** and 5 **strongly Agree** tell us your satisfaction with current **e-banking** features?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18. What is your concern most about using e-banking? Check all that apply

- a) Reliability/trust
- b) Risk of external fraud (hackers)
- c) Risk of internal fraud/misuse of date by bank staff
- d) Usage costs
- e) Problem with access (Internet)
- f) Other

**If your answer to question 12 is NO, answer the following questions**

19. Why you do not use e-banking Check all that apply

- a) I do not trust technology
- b) I rarely use banks for my financial activities
- c) I am afraid of losing money
- d) I am not very comfortable using technology
- e) I have a problem accessing Internet very often
- f) I do not possess proper electronic equipment
- g) I am afraid that my data will be misused

20. Would you be interested in the future to use e-banking for? Check all that apply

- a) Placing deposits
- b) Completing a loan process
- c) Performing more sensitive transactions
- d) Other, please specify

21. What would motivate you for using e-banking Check all that apply

- a) More information about the service
- b) Simpler to use
- c) Assurance that there is no risk for losing money
- d) Assurance that there is no risk for misusing my data
- e) Other, please specify

22. Do you use m-banking?

- Yes     No

**If your answer to question 22 is YES, answer the following items 23 – 28; otherwise, continue to question 32:**

23. How were you informed about m-banking?

- a) Media (TV, Radio, newspapers, etc)
- b) Printing Promotion Materials (Brochures, leaflets)
- c) Digital Media (Social media, web portals, etc.)
- d) Bank staff
- e) Friend

24. Why you use m-banking?

- a) To saves time
- b) To save money
- c) Do banking 24/7
- d) It is easy to use
- e) I like to be trendy

25. How do you access m-banking?

- a) Through smartphone
- b) Trough lap-top
- c) PC
- d) Tablets

26. What do you use m-banking for? Check all that apply

- a) Making transfer payments
- b) Paying bills/utility bills
- c) Checking account balance
- d) Applying for loans
- e) Other

27. On a scale of 1 to 5, with 1 indicating **strongly disagree** and 5 **strongly agree**, tell us your satisfaction with current m-banking features?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28. What are you concerned most about using m-banking? Check all that apply

- a) Reliability/trust
- b) Risk of external fraud (hackers)
- c) Risk of internal fraud/misuse of data by bank staff
- d) Usage costs
- e) Problem with access (Internet)
- f) other

**If your answer to question 22 is NO, answer the following questions 29 – 31, otherwise continue to question 32:**

29. Why you do not use m-banking? Check all that apply

- a) I do not trust technology
- b) I rarely use banks for my financial activities
- c) I am afraid of losing money
- d) I am not very comfortable using technology
- e) I have problem accessing Internet very often
- f) I do not possess proper electronic equipment
- g) I am afraid that my personal data will be misused

30. Would you be interested in the future to use m-banking for? Check all that apply

- a) Placing deposits
- b) Completing a loan process
- c) Performing more sensitive transactions
- d) Other, please specify

31. What would motivate you for using m-banking? Check all that apply

- a) More information about the service
- b) Simpler to use
- c) Assurance that there is no risk of losing money
- d) Assurance that there is no risk for misusing my personal data
- e) Other, please specify

32. On a scale of 1 to 5, with 1 being strongly disagree and 5 strongly agree, state how much you are satisfied with the level of data and information security provided by bank?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

33. On a scale of 1 to 5, with 1 being strongly no and 5 strongly yes, would you recommend e-banking and/ or m-banking to your family members and friends?

Strongly no	no	Neutral	yes	Strongly yes

34. On a scale of 1 to 5, with 1 being strongly no and 5 strongly yes, you will continue using E-banking and M-banking?

Strongly no	no	Neutral	yes	Strongly yes

35. On a scale of 1 to 5, with 1 being strongly disagree and 5 strongly agree, do you think that human interaction is important for banking relations?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

## Appendix 6: Statistical test – General

### Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
8. How do you perform your banking services? * 1. Age	337	100.0%	0	0.0%	337	100.0%
8. How do you perform your banking services? * 2. Gender	337	100.0%	0	0.0%	337	100.0%
8. How do you perform your banking services? * 3. Education	337	100.0%	0	0.0%	337	100.0%
8. How do you perform your banking services? * 4. Occupation/source of income from	337	100.0%	0	0.0%	337	100.0%
8. How do you perform your banking services? * 6. Where do you live?	337	100.0%	0	0.0%	337	100.0%
8. How do you perform your banking services? * 7. Monthly income (in Euro)	337	100.0%	0	0.0%	337	100.0%

### 8. How do you perform your banking services? \* 1. Age

#### Crosstab

Count

		1. Age						Total
		+65 years	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years	
8. How do you perform your banking services?	By visiting bank branches	2	6	4	10	9	2	33
	Combined (branch visit and through online channels)	0	11	57	56	34	9	167
	Online	1	3	29	58	41	5	137
Total		3	20	90	124	84	16	337

### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	36.245 <sup>a</sup>	10	.000	. <sup>b</sup>
Likelihood Ratio	30.660	10	.001	. <sup>b</sup>
Fisher's Exact Test	. <sup>b</sup>			. <sup>b</sup>
N of Valid Cases	337			

a. 5 cells (27.8%) have expected count less than 5. The minimum expected count is .29.

b. Cannot be computed because there is insufficient memory.



**8. How do you perform your banking services? \* 2. Gender**

**Crosstab**

Count

		2. Gender		Total
		Female	Male	
8. How do you perform your banking services?	By visiting bank branches	15	18	33
	Combined (branch visit and through online channels)	53	114	167
	Online	51	86	137
Total		119	218	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	2.641 <sup>a</sup>	2	.267	.275
Likelihood Ratio	2.603	2	.272	.275
Fisher's Exact Test	2.676			.267
N of Valid Cases	337			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.65.

**8. How do you perform your banking services? \* 3. Education**

**Crosstab**

Count

		3. Education			
		Bachelor degree	Master degree	PhD	Secondary School
8. How do you perform your banking services?	By visiting bank branches	15	11	2	5
	Combined (branch visit and through online channels)	80	63	16	8
	Online	65	56	6	10
Total		160	130	24	23

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	7.816 <sup>a</sup>	6	.252	.250
Likelihood Ratio	7.166	6	.306	.351
Fisher's Exact Test	7.385			.270
N of Valid Cases	337			

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 2.25.

**8. How do you perform your banking services? \* 4. Occupation/source of income from Crosstab**

Count

		4. Occupation/source of income from						Total
		Agro Business / Farming	Corporate Business	Micro Business	Remittances/ from diaspora	Salary earner	SME (Small and Medium Enterprise)	
8. How do you perform your banking services?	By visiting bank branches	1	2	2	0	26	2	33
	Combined (branch visit and through online channels)	1	3	3	0	148	12	167
	Online	0	2	9	1	112	13	137
Total		2	7	14	1	286	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	14.108 <sup>a</sup>	10	.168	.171
Likelihood Ratio	13.060	10	.220	.241
Fisher's Exact Test	14.290			.097
N of Valid Cases	337			

a. 11 cells (61.1%) have expected count less than 5. The minimum expected count is .10.

**8. How do you perform your banking services? \* 6. Where do you live?**

**Crosstab**

Count

		6. Where do you live?		Total
		In rural area	In urban area	
8. How do you perform your banking services?	By visiting bank branches	9	24	33
	Combined (branch visit and through online channels)	30	137	167
	Online	15	122	137
Total		54	283	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	6.193 <sup>a</sup>	2	.045	.042
Likelihood Ratio	6.014	2	.049	.062
Fisher's Exact Test	6.205			.040
N of Valid Cases	337			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.29.

**8. How do you perform your banking services? \* 7. Monthly income (in Euro)**

**Crosstab**

Count

		7. Monthly income (in Euro)						Total
		1201-1600€	1601-2000€	401-800€	801-1200€	Over 2000€	up to 400€	
8. How do you perform your banking services?	By visiting bank branches	1	2	13	5	1	11	33
	Combined (branch visit and through online channels)	18	10	51	58	17	13	167
	Online	19	15	30	35	35	3	137
Total		38	27	94	98	53	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2- sided)	Exact Sig. (2- sided)
Pearson Chi-Square	60.969 <sup>a</sup>	10	.000	. <sup>b</sup>
Likelihood Ratio	53.463	10	.000	. <sup>b</sup>
Fisher's Exact Test	. <sup>b</sup>			. <sup>b</sup>
N of Valid Cases	337			

a. 3 cells (16.7%) have expected count less than 5. The minimum expected count is 2.64.

b. Cannot be computed because there is insufficient memory.

## Appendix 7: Statistical test – E-banking

### Case Processing Summary

	Cases					
	Valid		Missing			Total
	N	Percent	N	Percent	N	Percent
12. Do you use e-banking? * 1. Age	337	100.0%	0	0.0%	337	100.0%
12. Do you use e-banking? * 2. Gender	337	100.0%	0	0.0%	337	100.0%
12. Do you use e-banking? * 3. Education	337	100.0%	0	0.0%	337	100.0%
12. Do you use e-banking? * 4. Occupation/source of income from	337	100.0%	0	0.0%	337	100.0%
12. Do you use e-banking? * 6. Where do you live?	337	100.0%	0	0.0%	337	100.0%
12. Do you use e-banking? * 7. Monthly income (in Euro)	337	100.0%	0	0.0%	337	100.0%

### 12. Do you use e-banking? \* 1. Age

#### Crosstab

Count

		1. Age						Total
		+65 years	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years	
12. Do you use e-banking?	No	2	4	9	13	9	2	39
	Yes	1	16	81	111	75	14	298
Total		3	20	90	124	84	16	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	10.721 <sup>a</sup>	5	.057	.067
Likelihood Ratio	6.674	5	.246	.286
Fisher's Exact Test	8.044			.125
N of Valid Cases	337			

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is .35.

**12. Do you use e-banking? \* 2. Gender**

**Crosstab**

Count

	2. Gender		Total
	Female	Male	
12. Do you use e-banking?			
No	13	26	39
Yes	106	192	298
Total	119	218	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.076 <sup>a</sup>	1	.783	.860	.467
Continuity Correction <sup>b</sup>	.009	1	.923		
Likelihood Ratio	.076	1	.783	.860	.467
Fisher's Exact Test				.860	.467
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.77.

b. Computed only for a 2x2 table

**12. Do you use e-banking? \* 3. Education**

**Crosstab**

Count

		3. Education				Total
		Bachelor degree	Master degree	PhD	Secondary School	
12. Do you use e-banking?	No	17	15	1	6	39
	Yes	143	115	23	17	298
Total		160	130	24	23	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	6.162 <sup>a</sup>	3	.104	.099
Likelihood Ratio	5.458	3	.141	.186
Fisher's Exact Test	5.283			.135
N of Valid Cases	337			

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.66.

**12. Do you use e-banking? \* 4. Occupation/source of income from**

**Crosstab**

Count

		4. Occupation/source of income from						Total
		Agro Business / Farming	Corporate Business	Micro Business	Remittances/ from diaspora	Salary earner	SME (Small and Medium Enterprise)	
12. Do you use e-banking?	No	1	1	2	0	32	3	39
	Yes	1	6	12	1	254	24	298
Total		2	7	14	1	286	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	3.215 <sup>a</sup>	5	.667	.585
Likelihood Ratio	2.222	5	.818	.871
Fisher's Exact Test	4.400			.474
N of Valid Cases	337			

a. 7 cells (58.3%) have expected count less than 5. The minimum expected count is .12.

**Crosstab**

Count

		6. Where do you live?		Total
		In rural area	In urban area	
12. Do you use e-banking?	No	13	26	39
	Yes	41	257	298
Total		54	283	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.820 <sup>a</sup>	1	.002	.003	.003
Continuity Correction <sup>b</sup>	8.420	1	.004		
Likelihood Ratio	8.225	1	.004	.010	.003
Fisher's Exact Test				.004	.003
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.25.

b. Computed only for a 2x2 table

**12. Do you use e-banking? \* 7. Monthly income (in Euro)**

**Crosstab**

Count

		7. Monthly income (in Euro)						Total
		1201-1600€	1601-2000€	401-800€	801-1200€	Over 2000€	up to 400€	
12. Do you use e-banking?	No	1	1	17	6	2	12	39
	Yes	37	26	77	92	51	15	298
Total		38	27	94	98	53	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	43.002 <sup>a</sup>	5	.000	.000
Likelihood Ratio	35.572	5	.000	.000
Fisher's Exact Test	33.231			.000
N of Valid Cases	337			

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 3.12.



## Appendix 8: Statistical test – m-banking

### Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
22. Do you use m-banking? * 1. Age	337	100.0%	0	0.0%	337	100.0%
22. Do you use m-banking? * 2. Gender	337	100.0%	0	0.0%	337	100.0%
22. Do you use m-banking? * 3. Education	337	100.0%	0	0.0%	337	100.0%
22. Do you use m-banking? * 4. Occupation/source of income from	337	100.0%	0	0.0%	337	100.0%
22. Do you use m-banking? * 6. Where do you live?	337	100.0%	0	0.0%	337	100.0%
22. Do you use m-banking? * 7. Monthly income (in Euro)	337	100.0%	0	0.0%	337	100.0%

### 22. Do you use m-banking? \* 1. Age

#### Crosstab

Count

		1. Age						Total
		+65 years	18-25 years	26-35 years	36-45 years	46-55 years	56-65 years	
22. Do you use m-banking?	No	2	12	31	52	33	6	136
	Yes	1	8	59	72	51	10	201
Total		3	20	90	124	84	16	337

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	5.599 <sup>a</sup>	5	.347	.355
Likelihood Ratio	5.524	5	.355	.413
Fisher's Exact Test	5.619			.338
N of Valid Cases	337			

a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 1.21.

**22. Do you use m-banking? \* 2. Gender**

**Crosstab**

Count

		2. Gender		Total
		Female	Male	
22. Do you use m-banking?	No	57	79	136
	Yes	62	139	201
Total		119	218	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.349 <sup>a</sup>	1	.037	.048	.025
Continuity Correction <sup>b</sup>	3.878	1	.049		
Likelihood Ratio	4.323	1	.038	.048	.025
Fisher's Exact Test				.048	.025
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 48.02.

b. Computed only for a 2x2 table

**22. Do you use m-banking? \* 3. Education**

**Crosstab**

Count

		3. Education				Total
		Bachelor degree	Master degree	PhD	Secondary School	
22. Do you use m-banking?	No	53	59	13	11	136
	Yes	107	71	11	12	201
Total		160	130	24	23	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	7.276 <sup>a</sup>	3	.064	.062
Likelihood Ratio	7.291	3	.063	.066
Fisher's Exact Test	7.354			.059
N of Valid Cases	337			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.28.

**22. Do you use m-banking? \* 4. Occupation/source of income from**

**Crosstab**

Count

		4. Occupation/source of income from						Total
		Agro Business / Farming	Corporate Business	Micro Business	Remittances / from diaspora	Salary earner	SME (Small and Medium Enterprise)	
22. Do you use m-banking?	No	1	2	7	0	118	8	136
	Yes	1	5	7	1	168	19	201
Total		2	7	14	1	286	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	3.086 <sup>a</sup>	5	.687	.753
Likelihood Ratio	3.499	5	.623	.786
Fisher's Exact Test	3.253			.714
N of Valid Cases	337			

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .40.

**Crosstab**

Count

		6. Where do you live?		
		In rural area	In urban area	Total
22. Do you use m-banking?	No	21	115	136
	Yes	33	168	201
Total		54	283	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.058 <sup>a</sup>	1	.810	.880	.467
Continuity Correction <sup>b</sup>	.008	1	.930		
Likelihood Ratio	.058	1	.810	.880	.467
Fisher's Exact Test				.880	.467
N of Valid Cases	337				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 21.79.

b. Computed only for a 2x2 table

**22. Do you use m-banking? \* 7. Monthly income (in Euro)**

**Crosstab**

Count

		7. Monthly income (in Euro)						Total
		1201-1600€	1601-2000€	401-800€	801-1200€	Over 2000€	up to 400€	
22. Do you use m-banking?	No	8	12	42	33	20	21	136
	Yes	30	15	52	65	33	6	201
Total		38	27	94	98	53	27	337

**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	24.479 <sup>a</sup>	5	.000	.000
Likelihood Ratio	25.040	5	.000	.000
Fisher's Exact Test	24.382			.000
N of Valid Cases	337			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.90.