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Review Article

# SECURITY IN CONTEMPORARY E-BANKING IN THE REPUBLIC OF NORTH MACEDONIAN

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**Abstract**
Over the past few decades, technological development has significantly changed the banking industry, which has become a major sector in the use of new technologies. All these developments and changes and in particular the advantages of the internet have contributed to the establishment of a new revolution in the banking industry for the way of working and providing services in the financial industry by enabling financial institutions new models of work and new ways of providing services to their customers.
The paper aims to provide an analysis of the impact of E-banking on improving banking services, as E-banking enables the provision of banking services "anywhere, in any place and at any time" and on the other hand maintaining the security of the bank's customer data. Since these are two essential elements for achieving a higher level of customer satisfaction from the electronic service provided by banks and also, it affects the client's conception to use this service correctly and increase his trust in banks in the security of their data.
**Keywords: Information technology; E-business; Risks of electronic operation; Data security; Customer trust.**

## 1. Introduction

Electronic banking is a type of banking in which computer networks, web technology, the Internet and telecommunications media are intensively used. Their implementation means hardware-software platform, precisely defined component of networks, certain organizational structure, standardization, etc. Electronic banking means electronic work between banks on the one hand and the client on the other, respectively performing electronic payment operations which depending on the categorization of customers themselves can be electronic banking for individuals and electronic banking for legal entities. The existing legislation and the solutions that are offered currently enable the rapid development of electronic services and represent a certain prohibition of further development, because the areas from the complete field of electronic work which would enable rapid development are not legally defined and dynamic e-services in the directions in which it should be developed.[53]

With the development of information technologies, there is a situation where data on business transactions can be found in the databases of computer systems, respectively in magnetic media, while paperwork (documents) is presented only as a by-product. For this way of working in practice, the definition of electronic banking has started to be used.[54]

[53] Radojevic, T., Celarevic, B., Primena elektronsog bankarstva u Srbiji, Beograd, (2010)
[54]Gracanac, A., Globalno bankarstvo, Fabus, Novi Sad, (2007),pp. 131.

**Introduction and development of electronic banking**

The introduction of electronic banking has established a completely new banking philosophy which is based on the electronic exchange of data and tools (EFT - Electronic Funds Transfer), and which is defined as electronic banking.[55]

Electronic data exchange is a fundamental direction of work and development of banks. With the development of electronic means of exchange, financial instruments and work technologies change significantly. Financial transactions can, without the traditional preparation of payment slips and other documentation, be transferred over an indefinite distance for a short time through existing communication networks at home and abroad. EFT enables the transfer of funds at the moment when the payment is made from the debtor's account to the beneficiary's account. This way of payment eliminates the payment with checks and other forms without cash.

Recently, there has been a demand from users for better control and management of finances. The Internet has enabled a large flow of information and has forced more and more banks to deal with the quality and access to information.[56]

With the development of information and telecommunication technologies, new conditions for globalization of work have been created. The main goal is to connect customers and information flows as quickly and efficiently as possible, regardless of geographical distance.

In conditions where competition is remarkably high and the differences between banks, investment banks, brokerage firms and insurance companies are gradually being lost, financial organizations are working under constant pressure to keep their customers, to reduce costs and risk.

In parallel, new technologies are being used as sources of competitive value. According to this, strong competition and work as a global organization requires a new concept for banks' access to their work. All this speaks of investment and connection of a new technology at work which is oriented and specialized according to customers. The Internet is one of those technologies.

In the early stages of e-banking development, online banks have only introduced information on how to work. It has been a form of unilateral communication of banks with potential, new or existing customers.However, this type of communication had only one advertising character.

Further expansion of e-banking also developed two-way communication with customers (natural and legal persons), in which customers have contacted the bank via e-mail (e-mail) or interactive access to any service. The highest level of bank communication with customers, are banking transactions carried out via the Internet.[57]

Thus, e-banking users can be natural persons, bank employees or legal entities, respectively corporations. Individuals use the network of services such as home banks, online banks, or telephone banks. Bank employees mainly use the internal network for daily work assignments, while legal entities or corporations use electronic services to manage money in hand, notifications of changes in their accounts, etc.[58]

With the introduction of the Internet, new conditions for quality banking services have been created. The basic feature of new banking services is that operating costs are significantly lower. The Internet has enabled the home bank to become a simpler and cheaper form of banking,

[55]Kovacevic, D., Elektronski novac u Srbiji, Mikro, Beograd, (2005), faqe.17.
[56]Mitrovic, N., E-banking, Link group, Beograd, (2004), pp. 182.
[57]Milojevic, D., Leksikon bankarstva, Beograd, (2003), pp. 189.
[58]Hadzic, M., Bankarstvo, Beograd, (2007), pp. 51.

given that investment in equipment is minimal while the customer is already more connected to the Internet.[59]

Electronic banking was developed when the development of information technologies began, i.e. when the process of processing and transferring data and information through the electronic network has begun. There have been no major changes in banking history, and one of the biggest changes is the introduction of e-banking. For many years, banks have carried out their work according to the traditional model and so the connection of modern equipment has been a shock to them, but banks have very quickly accepted all these changes and adapted to them.[60] Electronic banking is an attempt to bring together more different technologies, each of which has developed in a different way.[61]

**Reasons for existence of electronic bank**

The reasons why banks appear on the Internet are many, we will mention some of them: Creating an image of an innovative company, which is able to offer its customers the latest technology solutions.

**Better and bigger interactive opportunities.** For the bank which fights for each of its customers and communication with them is important. In classic conditions, the bank can communicate only if the working hours have been extended or through an information counter which would work without interruption. This way of working has created limitations in communication.

**Opportunity to rationalize the bank's potential.** By transferring certain services to the Internet, the bank reduces costs from operations because in order to increase the number of customers, it does not have to open new business premises to equip them and hire new employees. This is especially interesting for those geographical regions where the bank does not have an exhibition network or has a small number of customers. Through the Internet, the bank can cover a significantly large geographical area without opening new exhibitions. A large amount of information that the bank can make available to its customers is in principle not available to the wider circle of its customers. This has to do with the possibilities for placement and lending on more favorable terms, payments abroad, advisory functions, etc.

**Self-service banking** which is equally useful for both the bank and the client, because the client has services 24/7 while the bank without increasing the number of employees works 24/7.

**With its online presence, the bank proves its competitive opportunities and its development as a solid and technologically advanced technology company.** The experiences of advanced countries show that banks without an underdeveloped electronic banking system will no longer be able to exist. The reason for this is the competitive offer, respectively the need for quality financial service**.**

According to bank customer service claims, lower bank expenditures are expected to result in higher deposit interest rates, lower utility provisions and special opportunities for online payments. It is not at all insignificant that they do not have to wait in line, spend time and all this only during the working hours of the bank.

[59]Ibid, pp. 52-53.
[60] Kovacevic, M. D., Dzurovic, M. S., Elektronsko bankarstvo, Pravo: teorija I praksa, vol. 31, br, 1-3, (2014), pp. 31.
[61] Bjelica, V., Bankarstvo, Savremena administracija, Beograd, (2000), pp.92.

## Advantages and disadvantages of electronic banking

**Advantages of e-banking.** The advantages of electronic banking are many and all participants in electronic operations have advantages. For the bank, electronic banking is synonymous with increasing the reputation and image as well as better bank positioning in the banking market. For customers, the advantages are perceived using banking services at any time and in any place, from any computer, laptop, mobile device or smart device which has the ability to provide electronic banking services. Customers have the opportunity not to wait in line, to make transactions without provision, to make payments for a short time and to save time. Every day, customers receive new offers from the bank via e-mail, as well as notifications that they have traditionally received (mail, phone calls, etc.).[62]

**Disadvantages of e-banking.** The development of the Internet has also enabled the development of various computer viruses which unauthorized users use to obtain certain data, commit criminal acts, and manipulate the Internet. However, in addition to the fact that the Internet has led to the greater use of crime, large companies have come up with the idea to form programs that will protect their computers and all the data and information contained in them, without considering whether it is about data and information he has received from the internet. It is important to protect against unwanted attacks and viruses from the internet, or attacks on social networks by individuals, cooperatives, or companies. Today there are various tools and methods for detecting fraud, manipulation and unauthorized attacks on computer systems or electronic networks. However, there are certain jobs that cannot be fully protected, and what is once placed on the network always remains on the network.

Thus, the lack of security, the lack of laws that would regulate unauthorized attacks, the lack of risk, criminal cases and the misuse of the Internet pose great risks that threaten today's e-banking. Users of payment operations will be protected through the definition of new legal legislation. For electronic banking, data protection and protection systems are especially important. Banks must use closed networks to ensure the protection of transaction data and protection from unwanted attacks on the banking system. In open networks there are many attacks and hackers who illegally attack users' computer systems and have access to users' financial information. It is emphasized that cryptographic methods are especially important for data protection.[63]

## Influence of the security of the data of electronic banking service clients

### Protective mechanisms - elements of defense systems

Security is a major concern of banks that provide e-banking services and is often defined as a combination of technology, measures, and procedures to protect information from unauthorized use. There are four basic security services:

- **Data confidentiality**, which is achieved through encryption, respectively with the use of cryptographic algorithms**.**
- **Self-identification** or identity control with which the user is introduced. This is done in a variety of ways: PIN / Personnel Identification Number / Password, biometric methods / fingerprint thirst, as well as smart cards.

[62]Marinkovic, V., Senic, V., Analiza elemenata kvaliteta usluga u korporativnom bankarstvu, Ekonomski horizonti, Vol. 14, Br. 1, Beograd, (2012),pp. 15.
[63]Vaskovic, V., Sistemi placanja u elektronskom poslovanu, Fakultet organizacionih nauka, Beograd, (2007), pp. 304.

- **Data integrity.** Ensuring the exchange of financial data and other data between banks and users in such a way that no unauthorized person will be able to use or change the data. Data integrity can be ensured with protection technologies (SSL - Secure Socket Layer, S-HTTP - Secure Hypertext Transfer Protocol, etc.).
- **Denial of messages**, service which prevents the sender from denying the sending and content of the message, respectively the recipient denying the acceptance and content of the message.

**Ensuring the security of transactions in electronic banking**

**Hardware integrity.** In addition to the usual possibilities for protection of electronic devices, such as home security devices, electrical and time security, it is necessary to mention the protection measures related to their access, respectively control of access to the spaces where they are located. In that aspect, the identification cards are of special importance, which enable access to the spaces or alarm devices which are activated in case of entry into violent spaces. The integrity of the hardware is of importance and it is necessary that the coding procedure be present in the module and in them. For these components which must be secured from theft and reading completely hybrid technology is used as a physical protection measure**.**

**Software integrity.** For software protection that is in use from manipulations, there are integrated control steps that stop free work and manipulations with programs and parts of programs. That way, the program runs smoothly and smoothly. The integrated control process is based on coding with the help of physical protection measures and ensures the confidentiality of the codes used. In addition to the operating system, the software can be protected by special software segments that, for example, should not be stopped, as well as other possibilities for protection of the software program.[64]

**Data integrity.** Data are more important in their integral processing. Protecting access to data as well as insufficient manipulation with them, deleting them is certainly the most important and basic task. Data security and control is also based on coding. When using the electronic system, the largest number of users is required to perform greater work control. Management of electronic data processing systems should be entrusted only to professional and educated staff. For self-service systems, money-issuing vending machines, account-issuing vending machines, and other information vending machines must place written instructions on how to use them in a conspicuous place. Upon entering the electronic centers, identification devices must be installed and thus unauthorized visits with all consequences must be prevented. For self-service electronic devices, identification of the user with a personal identification card, etc. is required. All preventive measures as well as tools against misuse should prevent access to spaces, work with systems, and access to supervising the business changes of clients as well as eventual attempts to delete data.[65]

**The modern concept of organization is a condition for security and efficiency.** Organizational measures are a prerequisite for developing and incorporating comprehensive protection and security concepts. These organizational measures accurately determine the responsibility, tasks, and control of the implementation of strategies given for safety and efficiency. In this way the classification of the software is done, the user data according to the functions. Based on this approach, a detailed scheme of data processing and work in general is elaborated**.**

[64]Cronin, M., Banking and Finance on the Internet, SCN Education, London, (2001).
[65] Ibid 12.

In the banks, first, the problem of security and discretion in carrying out the affairs related to the client is posed. Only if there is no possibility of misuse of customer data, if new electronic devices and systems are made in such a way that their use is very easy, the prices and operating costs are affordable then these technological innovations will be able to apply to commercial banks for a wide range of clients.[66]

Technological innovations in the payment system pose complex demands on bank employees, savings houses because they require great effort in terms of their education and their permanent education. These changes have a big impact on clients because they must get used to new forms or new computer expressions, to overcome the current difficulties when implementing new devices, automata, or applications. Technological innovations have brought great advantages in terms of speed and security in the realization of banking services in relation to the classic way of conducting financial transactions.[67]

**Risks and managing them in e-banking.** Operational risk refers to the possibility of adverse effects on the financial result and capital of the bank that are the result of layoffs by employees, inappropriate internal procedures and processes, inadequate management of information and other systems and events. Unpredictable exteriors**.**[68]

Reputation risk is the risk of negative public opinion which as a result can result in large losses of funds or the departure of customers from the bank. Its negative effect on the image of the bank can be permanent.

For the bank to be protected from the risk of reputation, it is necessary to provide e-banking services continuously and to be in line with high customer expectations. The bank should be able to provide electronic banking services to all users and in all situations. It is important to create mechanisms for emergencies, so that the risk of reputation that may arise because of unexpected events is reduced to a minimum, including external and internal penetrations into the system. Customer support services should regularly monitor and analyze customer complaints because that way they can gain important information about system malfunctions and future work that needs to be done for the system to function properly.

Legal risk occurs in connection with violations or non-compliance with laws, regulations, and regulations. The two most common forms of legal risk are:

**Money laundering.**[69]In this case, legal sanctions are possible for banks that do not comply with the law. The bank should develop mechanisms for customer identification as well as procedures that will enable visibility in dubious transactions. In addition, it is necessary to develop plans in case unforeseen situations occur and continuous training of employees is done.

**Violation of customer privacy.** If the bank published information about the client's financial transactions without his prior consent, he could be sued for breach of privacy and bear the costs of the lawsuit. The bank should re-examine the procedures for privacy protection and re-conduct periodic inspections of the same as well as train employees to implement the approved procedures. Customer protection as well as regulations and laws relating to customer privacy vary from country to country. Banks are the ones who have the obligation to provide their clients with a certain level of legal security.

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[66] Djordjevic, B., Djordjevic, M., Zastita podatakata na intranetu i ekstranetu posredstvom digitalnog potpisa, Bankarstvo, Bograd, (2010), pp, 134.

[67] Ibid.

[68]Rrezik operativ: www.kamatica.com

[69]Term which determines the concealment of the real origin of Money in circulation. This is a financial operation by which a certain amount of Money is sent through a number of depositors (and multiple accounts) to different banks in order to prevent official state agencies from pursuing that Money

International risk e-banking means the use of technologies that do not recognize geographical boundaries. As it is known, the application of these technologies with them carries a lot of facilities, but at the same time certain shortcomings.[70]
In international operations, credit risk is also increased in relation to the difficult assessment of the creditworthiness of credit applicants. Banks that decide to provide services to customers in different national markets must learn the legal regulations of those countries and understand the national differences in the expectations and recognition of products and services by the client. On the other hand, the bank must assess the country's risk and develop action plans in case of economic or political problems in the national market.

**Data security and protection threats**

Data protection measures were taken according to the level of risk which presents the possibility that a certain threat to data security will be realized. Once it is necessary to do a risk analysis. The risk analysis first assesses the value of the data and the network equipment that is protected, then assesses the possibility that the threat will be realized and finally implements the costs of protection with the costs of injury. Based on this analysis, control measures are taken to prevent threats and plans are made; m; further policy.[71]
There are six sets of incidents that can seriously jeopardize data security on an e-banking user's computer: The effect of force majeure; Hardware and software errors; Human negligence; Intentional injuries; criminal; Attacks on confidentiality.
The protection program is designed to protect the installation even through major events that rarely occur, such as fire or any major fraud, as well as minor damage to individual syllables that can occur more than once a week.
There are three directions of action:
1. Minimize the likelihood that the threat may occur, through preventive action.
2. Minimize the damage, if the threat occurs.
3. Design of methods for rehabilitation of damage caused by the realization of any threat, regardless of how serious it has been, with which it is assumed that the vital grip (account balance) must in no case be destroyed.
It is useful for each installation to make an evaluation table of the probabilities of individual threats.[72]
Internet users must ensure normal control of the calculation of bank and credit cards from unauthorized transactions. In addition, the user may from time to time check creditors through an accredited credit agency to see if there have been unauthorized uses of his name and personal data for obtaining credit from any financial institution.[73]
If the user has discovered any financial misuse, he will have to immediately inform the financial institution and prove it in writing. It will also need to record the fact that his identity has been compromised with CIFAS or any of the accepted credit agencies to prevent further unauthorized use of his personal data.

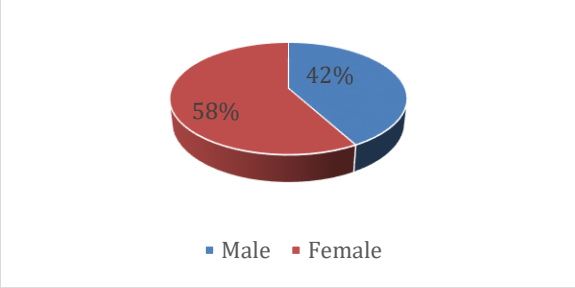
[70]Jovanovic, N., Racunarske mreze: edukacioni system za racunarske mreze zasnovan Na web-u, Visa poslovna skola, Beograd, (2011), pp. 43.
[71]Spasic, D., Postnet racunarska mreza i Internet servisi, Zaduzbina Andrejevic, Beograd, (2012), pp. 111
[72]Djordjevic, B., Djordjevic, M., Zastita podatakata Na intranetu i ekstranetu posredstvom digitalnog potpisa, Bankarstvo, Beograd, (2010), pp. 129.
[73]Stojcev, M. K., Racunarske mreze i prenos podataka, Elektronski fakultet, Nis, (2012),pp. 153.

## 2. Description of study

The overall purpose of this research is to show the need and interest of e-banking with a wide range of products and services offered to increase the quality and comfort that the bank provides with its electronic services. Customer satisfaction and data security regarding their importance for this purpose are equated.
The paper is based on the following hypotheses:
H0:We assume that the use of electronic banking, greatly expand the quantity and quality of banking services, but at the same time increasing the security of customer data
H1: Ensuring electronic banking transactions reduces bank risks and misuse of data by a third party.
H2: Electronic banking is very suitable for people who work and do not have time to visit the banks.

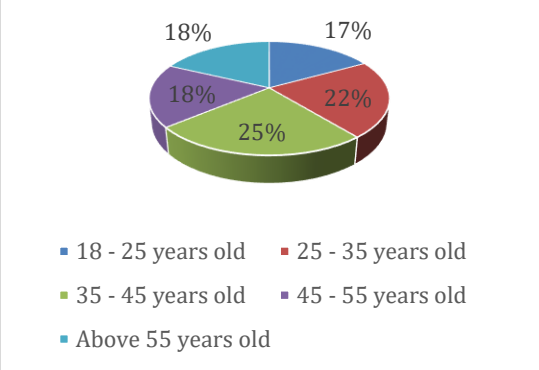
## 3. Results

The survey included 100 respondents to obtain full numbers in percentage, while the survey questionnaire was in two languages because the respondents belonged to two nationalities: Albanian and Macedonian



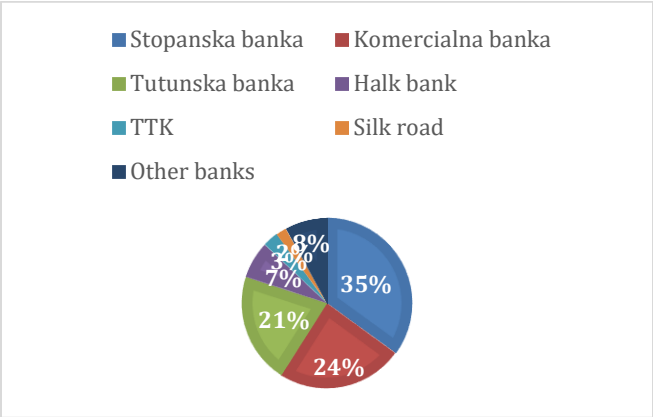

**Graph. 1** Gender structure of the respondents

The sample as can be seen from the data presented in the above graph is dominated by female respondents. In fact, only 42% of the total number of respondents is male.



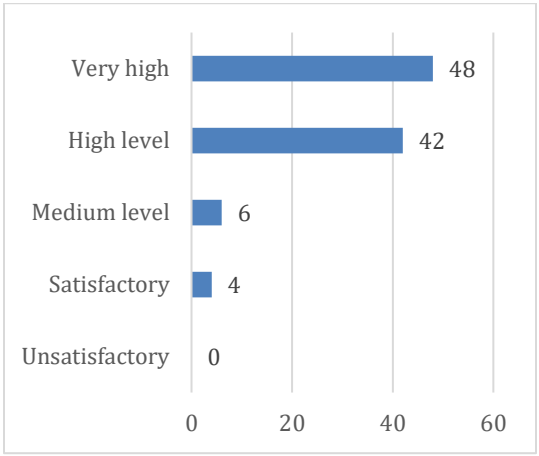

**Graph. 2** The structure of the respondents by age

As can be seen from the data presented in the graph above, within the sample are included individuals of different age groups, most of 25% of the total number of respondents belong to the age of 35-45 years, then 22% are aged 25–35 years, the age groups 18–25 and 45–55 years were equally represented with 18% and finally the group with more than 55 years was represented by only 17%.



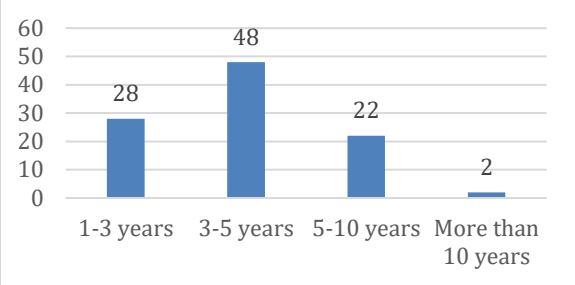

**Graph. 3** Banks in whichrespondentsuseelectronicbanking

According to the results we can conclude that Stopanska Banka is mostly represented by customers who use e-banking (35%), Commercial Bank (24%), Tutunska Banka (21%), TTK Bank with 8%, Halk Bank with 7%, Silk Road as a small bank with 3% and other banks which were part of this list with 2%.



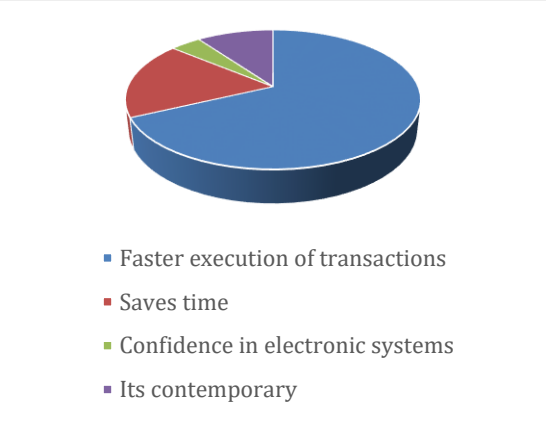

**Graph. 4** Quality of electronic services in Macedonian banks

The data presented in the graph above show an incredibly positive approach of customers to the quality of electronic services in the Banks of the Republic of Northern Macedonia. According to the results, we can see that the users of electronic banking services are satisfied at a very high level with the representation of 48% and with high of 42% that together make 90%, while those who are on average satisfied 6% and sufficiently satisfied 4%.



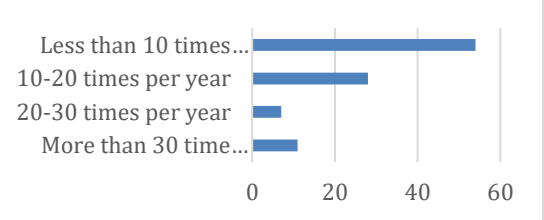

**Graph. 5** Period of use of electronic banking

From the results of the above graph we can conclude that the time period of the electronic bank is 3-5 years, about 48%, then 1 to 3 years about 28%, 5 to 10 years with 22% representation and more than 10 years with a representation of 2%.



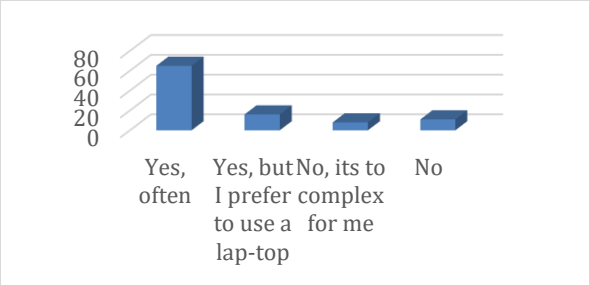

**Graph. 6** Reason for access to electronic banking services

According to the results presented in the graph above, we can conclude that the biggest reason for access to electronic banking services is the highest speed of transactions, 68%, then comes the saving of waiting time in front of bank counters by 18%, the largest trust has a lower percentage of 4%, while because it is modern it is represented by only 10%.



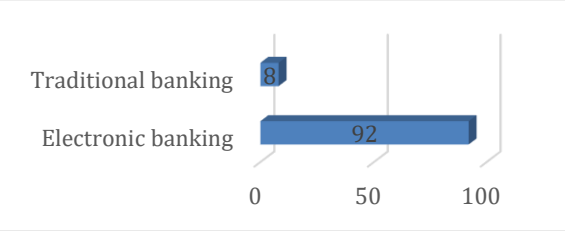

**Graph. 7** Annual use of electronic payment operations

As can be seen from the results presented in the graph above, we can conclude that the annual use of electronic payment operations is not at such a high level, more than 30 times a year, only 11% are used by bank customers, from 20-30 times a year they use only 7%, from 10-20 times a year it is used by 28%, and in the end with more than 30 times a year it is used only by 11% of the respondents.



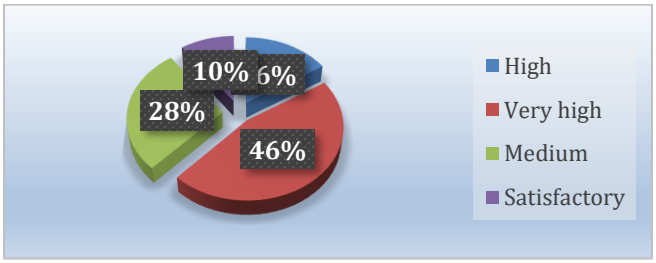

**Graph. 8** Usability of mobile banking

As can be seen from the data presented in the graph above, customers who use mobile banking have a high percentage of usage, 65%. Most people use mobile banking, but they prefer a laptop with about 16% of them, with difficulty declaring 8%, while 11% of them do not use mobile banking at all.



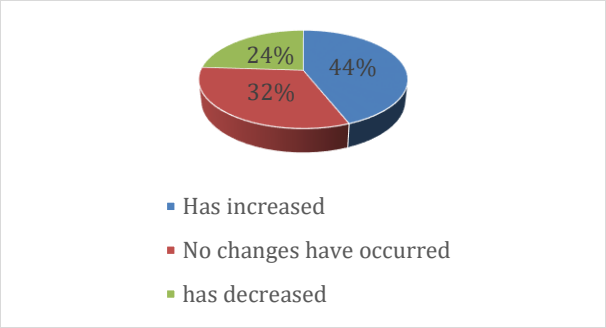

**Graph. 9** Preferring traditional or electronic banking

In the Republic of North Macedonia, Bank customers have stated that they prefer e-banking by about 92%, while only 8% prefer traditional banking.



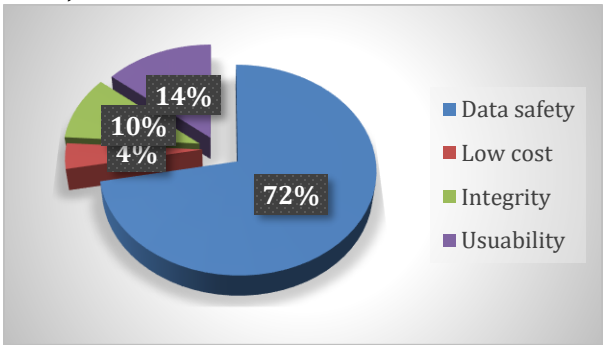

**Graph. 10** Data security confidence level

From the data presented in the graph above, it is clear that the level of trust in terms of data security by customers is very high, the very high level is 46% and the high level is 16%, while the average level is about 28%, while only 10% of customers are dissatisfied, as far as the level of dissatisfaction is not expressed.



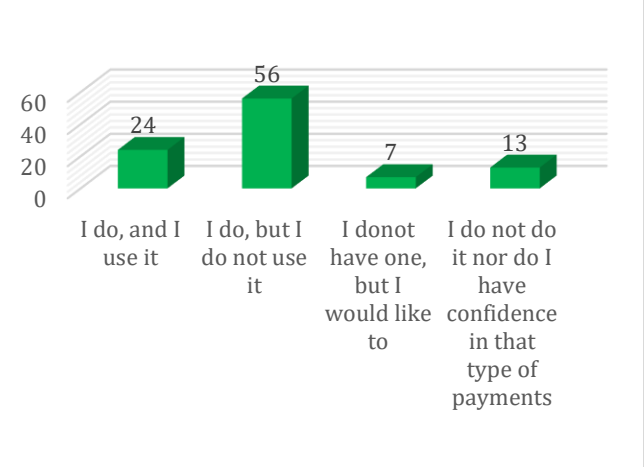

**Graph. 11**Quality of banking services with the connection of electronic banking

As can be seen from the data presented in the graph above, in terms of the quality of banking services with the connection of electronic banking we can conclude that the quality of banking services has increased by 44%, while 32% has remained the same courses. 24% has been reduced.




**Graph. 12** The most important feature of electronic banking

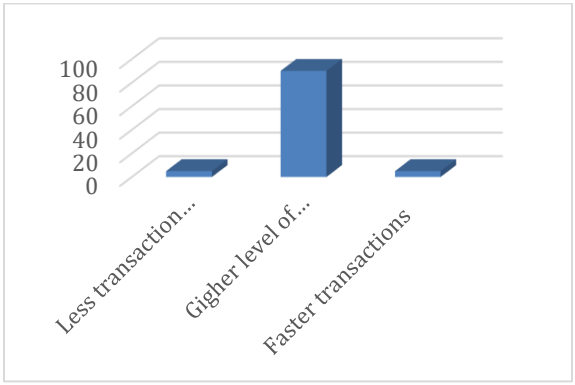
As can be seen from the data presented in the graph for the characteristics of electronic banking, we can conclude that the customers of the Banks of the Republic of Northern Macedonia have a high confidence in the security of their data with 72%, then continues ease of use with 14%, integrity with 10% while in the end is the low cost with 4% representation




**Graph. 13** PayPal usage level

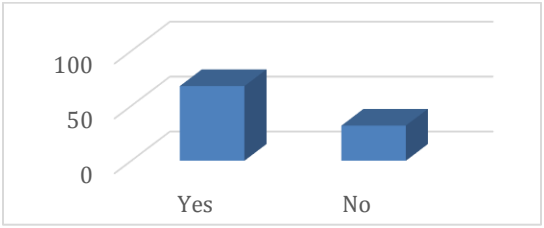
As can be seen from the data presented in the graph above, for the usability of PayPal as a way to pay customers of the Banks of the Republic of North Macedonia have stated: they own and use

24%, they own but do not use 56%, do not own it but wish to have 7% do not own it as they do not have confidence in this way of payment 13%.




**Graph. 14.** Attitude of users for future changes in electronic banking

According to the results, e-banking users represented by 90% say that the level of electronic services should be increased, while 5% are represented by the reduction of transaction costs and the increase of transaction speed.

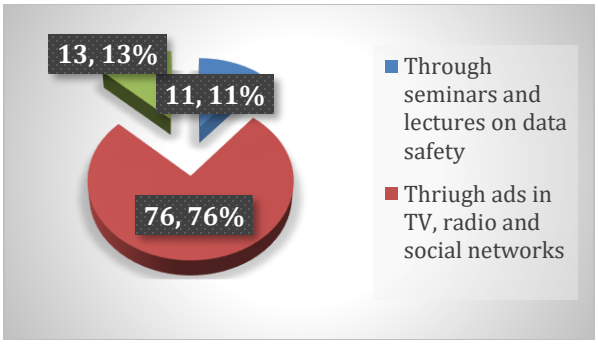



**Graph. 15** Reliability of electronic banking transactions in relation to data security

Customer data security is much higher at 68% compared to uncertainty which is only 32%.


**Graph. 16.** Level of misuse of data by a third party

As can be seen from the data presented in the chart above, the level of misuse of customer data by third parties is only 3%, while other customers have confidence in data protection and misuse of them by third parties.




**Graph. 17** How to increase the trust of e-banking users

From the data presented in the graph above, the way to increase the trust of e-banking is through ads in TV, radio and social networks that are represented by 76%, then with through platforms set up within the banks 13% and the organization of seminars and lectures on data security with 11%.

## 4. Conclusion

The paper aims to examine the validity of a key hypothesis and some auxiliary hypotheses.
The basic hypothesis of the paper is defined as follows: "We assume that the use of electronic banking, greatly expand the quantity and quality of banking services, but at the same time increasing the security of customer data"
A study conducted by commercial banks in the municipality of Tetova, Bank customers said that they prefer e-banking about 92%, while only 8% of them prefer traditional banking. In addition, the comfort of the study conducted in terms of the level of data security trust by customers is very high, the very high level is 46% and the high level is 16%, while the average level is about 28%., while only 10% of customers are dissatisfied, as far as the level of dissatisfaction is not expressed. Therefore, taking into account the results provided through empirical research, the accuracy of the main hypothesis has been confirmed, the use of electronic banking affects the quality and quantity of banking services and at the same time increases the security of customer data.
The first auxiliary hypothesis of the paper is defined as follows: "Ensuring electronic banking transactions reduces bank risks and misuse of data by a third party." The data provided through empirical research have shown that the reliability of electronic banking transactions in relation to customer data security is much higher at 68% compared to uncertainty which is only 32%. As for the level of misuse of customer data by third parties by only 3%, while other customers have confidence in data protection and their misuse by third parties. Therefore, it can finally be concluded that through empirical research the first auxiliary hypothesis has been verified.
The second auxiliary hypothesis of the master's dissertation is defined as follows: "Electronic banking is very suitable for people who work and do not have time to visit the banks." From the data provided in the empirical research we can conclude that the biggest reason for access to electronic banking services is the highest speed of transactions even 68%, then comes the saving of waiting time in front of bank counters by 18%, the largest trust has a lower percentage of 4%, while because it is modern it is represented by only 10%. Therefore, we can conclude that the second auxiliary hypothesis has been verified exactly.
Nowadays, electronic banking has become an integral part of modern banking due to lower transaction costs, services twenty-four hours, increased control over transactions, higher transaction volume for less time, facilities of remote transactions, and a much wider set of banking

products and services. Through online services customers have greater choice and do not need to be connected to one financial or other system. Banks need to make greater efforts to promote e-banking services. Banks should try to expand their network, they can promote, subsidize costs, free training, multiple access facilities, incentive programs for users and for the entire population, e-banks should make efforts for marketing campaigns. Due to the rapid development of technology, banks can work closely together in the field of standards development to provide services to third parties.

- Bank managers need to consider the importance of overall customer satisfaction, they need to improve relationships with their customers, recognize the reasons that can cause dissatisfaction or withdrawal of products offered by bank competitors.
- Bank managers should appreciate the importance of E-service quality and service quality with all their components as important factors influencing customer trust, loyalty and image.
- Another important aspect in the development of electronic banking services is the quality of the legal framework. The adoption of laws on the signing and protection of personal data will significantly accelerate the development of electronic banking, helping to build customer trust.

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