

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Information technologies**



**Bachelor Thesis**

**Customer satisfaction with Internet banking in  
Kyrgyzstan**

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## BACHELOR THESIS ASSIGNMENT

Bermet Almazbek Kyzy

Economics and Management

Economics and Management

Thesis title

**Customer satisfaction with internet banking in Kyrgyzstan**

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### Objectives of thesis

The main objective of the thesis is to identify impacts of internet banking on customer satisfaction.

Partial objectives are:

- to assess the current state of internet banking in Kyrgyzstan.
- to examine the relationship between the dimensions of internet banking service quality and customer satisfaction.
- to conduct a survey among the internet banking users, interpret findings and formulate conclusions.

### Methodology

Methodology of the thesis is based on study, analysis of information resources. A survey will be conducted among internet banking users in Kyrgyzstan and the survey results will be statistically evaluated and interpreted. Based on the theoretical findings and results of the practical part, final conclusion will be formulated.

**The proposed extent of the thesis**

30-40 pages

**Keywords**

Customer satisfaction, internet banking, service quality, reliability, user-friendliness.

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**Recommended information sources**

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## **Declaration**

I declare that I have worked on my bachelor thesis titled "Customer satisfaction with Internet banking in Kyrgyzstan" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any person.

In Prague on 15.03.2021

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### **Acknowledgement**

I would like to thank Ing. Miloš Ulman, PhD for all the support and advice during my work on thesis.

# **Customer satisfaction with Internet banking in Kyrgyzstan**

## **Abstract**

The main purpose of the thesis is to determine the customer satisfaction with Internet banking in Kyrgyzstan. The thesis consists of two parts: theoretical and practical part. In the theoretical part, the author presented an overview of topics such as customer satisfaction and customer loyalty, Internet banking services and analysis of banking services in Kyrgyzstan. This part of the thesis describes the factors affecting the customer satisfaction and evaluates the state of Kyrgyz banking services. Therefore, it provides knowledge for the practical part. The practical part of the thesis consists of a survey among Internet banking users in Kyrgyzstan. The survey was created based on factors affecting the customer satisfaction from the literature review. Then author put forward the hypotheses and tested them by Normality and Kruskal-Wallis statistical tests. At the end with the help of practical and theoretical part conclusion has been formulated.

**Keywords:** Customer satisfaction, customer loyalty, service quality, banking services, Internet banking, mobile-banking, web-banking.

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# 1. Introduction

In 2010, The Group of Twenty, major advanced and emerging economies of 20 countries established the Global Partnership for Financial Inclusion (the “GPFI”) platform, and the G20 leaders recognized that one of the most important factors in the country's economic sustainable development is the access of population to financial services.

In the Kyrgyz Republic, financial services are mainly provided by commercial banks and non-bank financial credit institutions, while in developed countries they are provided by stock markets. The banking sector is a key element of the financial system in Kyrgyzstan.

In developed countries, the largest banks provide the richest set of Internet services. In Kyrgyzstan the use of Internet banking is gaining momentum in developing, the quality of offered Internet banking services is improving, and the level of banking services penetration is increasing. Kyrgyz banks are successfully exploring the Internet space. In the future, Internet banking in Kyrgyzstan will take a worthy place in the transaction settlements, as account management via Internet is very convenient, saves time and allows to perform the necessary operations without leaving home or office.

Internet as a global network has a huge impact on all spheres of human activity, including the economy and business. Since the mid-1990s, an increasing number of financial institutions have been exploiting the Internet to provide their services. Banks were the first to introduce their services on the Internet. In 1995, Western banking organizations provided their customers with direct access to their accounts, allowing them to manage them from anywhere in the world where there is an Internet connection. Such access to the account via the network is called Internet banking. Almost all banks in modern conditions offer their customers remote services via Internet banking. Hundreds of thousands of customers are served through Internet banking and their number continues to grow. Banks regularly work to improve both services and security of such services. The main objective of the thesis is to identify the customer satisfaction with Internet banking in Kyrgyzstan as the number of Internet users in the country is significantly soaring.

## 2. Objectives and Methodology

### 2.1 Objectives

The main objective of thesis is to identify impacts of Internet banking on customer satisfaction. To assess the current state of Internet banking in Kyrgyzstan, examine the relationship between the dimensions of Internet banking service quality and customer satisfaction by conducting a survey among the Internet banking users and interpreting the findings.

This thesis investigates the current state of the art of quality of e-banking services in Kyrgyzstan, as there is an intensive Internet user's growth.

### 2.2 Methodology

Methodology of thesis is based on study and analysis of information resources. The survey results will be statistically evaluated and interpreted. Based on the theoretical findings and results of the practical part, final conclusion will be formulated.

### 3. Literature Review

In this part, the author will focus on the literature related to the topic, which is being investigated. Literature review part provides an overview of sources, with a focus on customer satisfaction, customer loyalty, Internet banking and banking services in Kyrgyzstan.

#### **3.1 Customer satisfaction**

Customer satisfaction in the modern banking system is one of the bank's priorities, because there is a positive relationship between customer satisfaction and the reputation of banks in the market. In addition, the attitude of employees in the bank affects customer satisfaction and loyalty, because the employee works face-to-face with customers, as explained by Munari, et al. (2013)

Customer satisfaction is defined as an "evaluation of the perceived discrepancy between prior expectations and the actual performance of the product". (Tse and Wilton, 1988, Oliver, 1999) Each customer has certain expectations and desired results, that must be satisfied. It does not mean only satisfaction of needs, but also emotional assessment of the components of a product or service. By offering a product or service, the company sells not only a physical item or help in solving a problem, it provides a huge number of "components", aspects, that affect emotions of a consumer. Through these emotions, the company affects consumer's subconscious and his/her further behavior in relation to the products of the company. If the product or service fully met expectations of the consumer or even exceeded them, he/she unknowingly wants to buy them again when a need arises, and sometimes even when it is absent. Moreover, such a client will recommend the company to his/her friends, acquaintances, and relatives, thereby increasing the brand image and attracting for companies' new potential consumers. (Samuel, Disrael, & K.Amoako, 2018).

Thus, customer satisfaction is explained as a measurement of banks and firms that provide products and services to meet customer expectations. And this is one of the important things in business because customer satisfaction will explain the market position in the future, several factors affect customer satisfaction, such as product quality, service quality, location, and service price.

According to Ozatac, et al. (2016), the higher the quality of services provided by banks offering Internet banking services, the higher the customer satisfaction, as well as increasing

customer satisfaction contributes to their loyalty. If bank gets customer loyalty, it gets more benefits from customers. Customer satisfaction is one of the most important factors in the modern world that encourage banks to compete. Despite the fact that all the banks want customers to be happy, and customers are happy with banks because they agree with the services they provide. Therefore, if customers are satisfied with Internet banking services, the probability that they will use it again in the future, and perhaps the level of satisfaction, will allow them to recommend another person to use the service of this Bank, as Adams, et al. say in their work. (Adams, et al., 2016)

Ticharwa (2017) says that customer expectations for a product or service must match the service provided by banks, when customer expectations and the service provided do not match, customers will be dissatisfied, customer satisfaction is the position that the customer takes after using a particular service.

## **3.2 Factors affecting customer satisfaction**

According to SERVQUAL model of service quality that was developed in the research by Parasurman , et al. (1988), were developed and identified seven dimensions of service quality, and they are – customer expectation, customer loyalty, reliability, guarantee, risk, trust, and security.

### **3.2.1 Customer expectation**

Customer expectation means a perception of customer about the product and service before it is delivered. Turunen (2011) studied the difference between customer perception and the expected outcome that will lead to failure in service delivery, and they should recognize the possible differences between perception and expectation in service delivery.

For example Yoo, et al. (2001) in their study use seven dimensions of e-service quality to measure customer perception in financial e-business, such as trust, service delivery speed, reliability, easiness, communication, website, and functionality.

### **3.2.2 Customer loyalty**

Positive experience gained in the process of using the product or service leads to the customer loyalty. (Akinin, Akinina, & Alimova, 2016). According to Ozatac, et al. (2016), the higher the quality of services provided by banks offering Internet banking services, the

higher the customer satisfaction, as well as increasing customer satisfaction contributes to their loyalty. If the Bank gets customer loyalty, it gets more benefits from customers. Positive experience gained in the process of using the product or service leads to the consumer loyalty. Also, communication between customers and bank employees is very important. Customer service is an integral factor, that includes number of private indicators (customer service culture, speed of service, range of services provided to consumers, etc.). Most scientists evaluate the quality of service in terms of the time spent by customers for the acquisition of services.

### **3.2.3 Reliability**

This factor is assessed prior to client's choice of a bank, insurance or investment company. According to Turunen (2011), the reliability of the product and service was provided by the banks, the value of reliability is the service that was provided by the banks was delivered at a certain time with full authority and flawlessly, and the other important thing is to provide the service without error and customer fraud.

### **3.2.4 Guarantee**

Based on Turunen (2011), guarantee is the relationship between a Bank employee and customers that an employee can transform into an assurance of trust and confidence after being made public; guarantee is related to the employee's courtesy to customers and knowledge. Guarantee dimensions include customer respect, customer communication effectiveness, the overall attitude that customer service provides, and service efficiency.

### **3.2.5 Risk**

According to Anesti (2004) risks in Internet banking are related to increased competition, to risk of obsolescence of technology, with reliability, the use and exploration of new technologies and website updates and with customer's trust issues with personal information safety.

### **3.2.6 Trust**

According to Raza et al. (2015) aspects of trust related to accessible information and employee courtesy to customers, as well as protecting customer information and building

trust. However, the size of the guarantee is a reliable response to customer requirements and faithful services. It is about constantly protecting client's account security, as well as maintaining error records.

### **3.2.7 Client security**

Confidentiality of negotiations and transactions, personal data, information about his accounts, financial opportunities. This component is implemented through a set of technical means (in the field of informational technologies), well-trained personnel who can work with confidential data. The criteria for assessing the level of customer security in a bank - the precedents in this area, is the real reputation of the bank.

Hoehle et al. (2012) found that customers' expectation of purchasing a product and service from banks is associated with many factors, and one of them is security, so security may be the reason for the customer's decision, since security is one of the main factors affecting customers' expectations of Internet use.

### 3.3 Customer loyalty dependence on customer satisfaction

Irfan et al. (2016) mentioned that customer loyalty is felt when a customer uses a product and service by a particular firm for a long period of time. And banks should take care to find new customers and save the customers that they already have.

Customer satisfaction is the best indicator for determining the likelihood of a customer's repeated purchase. The customers' repeated purchase is the main factor affecting the customer loyalty. According to Samuel Famiyeh, Disraeli Asante-Darko and Amoako Kwarteng (2018) study, customer satisfaction has a direct positive relationship with customer loyalty.

The term "brand loyalty" is a marketing term that is used in the marketing literature since 1923. Loyalty has its special importance in marketing. "Loyalty cannot be bought; it can only be earned." So Reichheld (2011) examined consumer loyalty as an indicator of company performance. His studies show that an increase in loyal consumers by 5% leads to an increase in profits by 25-100%. At the same time, a low loyalty indicator reduces the effectiveness of economic company activities by 25-50%. Moreover, he proved that customer retention costs organizations several times cheaper than attracting new. (Reichheld, Teal, & Thomas, 2001).

From the foregoing, it can be concluded that customer satisfaction directly affects his loyalty to the company. This hypothesis has been confirmed by many researchers who have studied the impact of customer satisfaction on brand loyalty. Albert Caruana and Mohammad Suhainy Abdull Rahim in their works proved that customer satisfaction has a direct impact on their loyalty. (Young , 1998), (Herrmann, Andreas, Lean Xia, Kent, & Frank Huber, 2007) (Table 1)

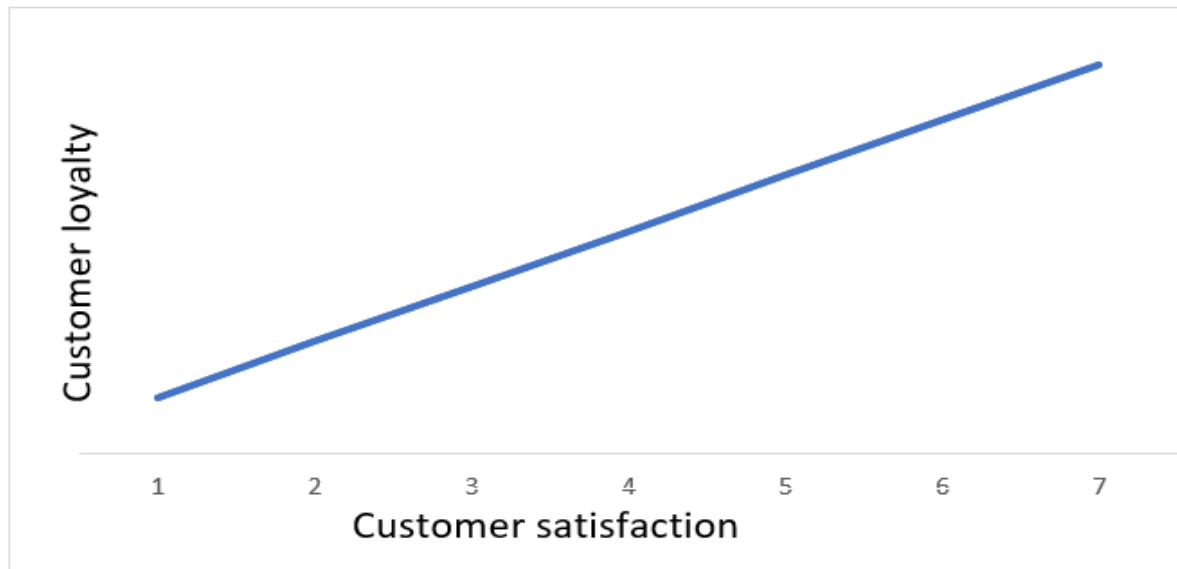
Customer satisfaction → customer loyalty	t-value
Albert Caruna	8,44
Mohhammad Suhainy Abdull Rahim	10,466

**Table 1 The level of significance of customer satisfaction on their loyalty**

**Source: (Herrmann, et al., 2007)**

T-values denotes a coefficient that displays significance variable. Both results show a strong effect of customer satisfaction on its loyalty.

Soderlund (1998) in his studies concluded that the relationship between customer satisfaction and loyalty is almost linear. He used a seven-point satisfaction scale, where 1 is very dissatisfied, and 7 is completely satisfied: (Figure 1)



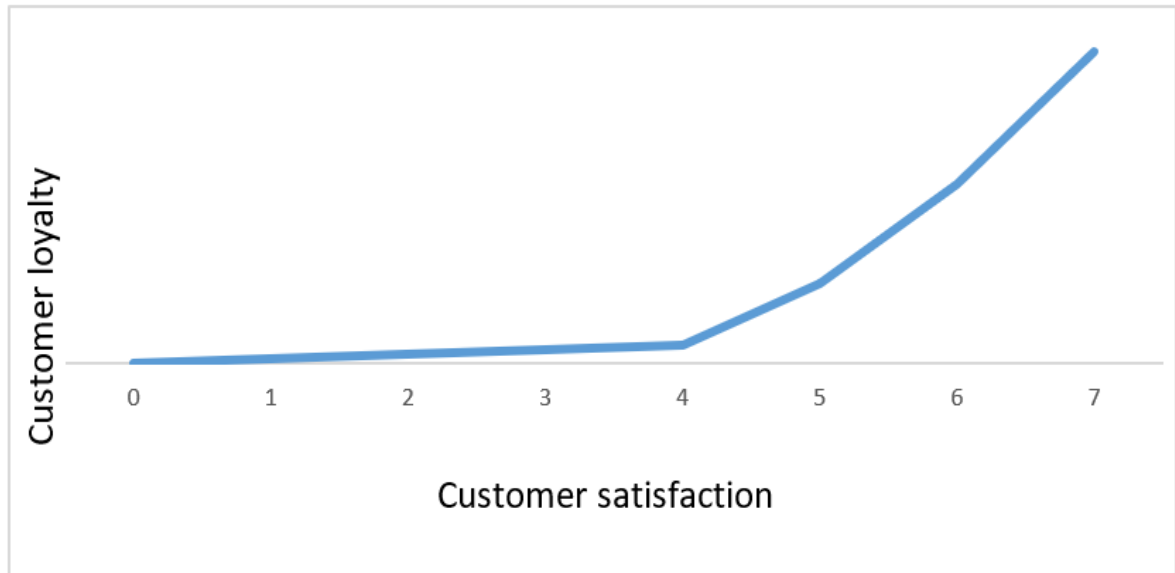
**Figure 1 Linear dependence of customer loyalty on their satisfaction.**

**Source: (Soderlund, 1998)**

On the other hand, Coyne (1989) put forward another hypothesis and showed that the customer satisfaction is not always depends on its loyalty. He divided customer satisfaction into three levels - low, medium and high. The results showed that the relationship between satisfaction and loyalty is strong only in two cases out of three - when customers are not satisfied and when they are satisfied. In the case of average satisfaction, its effect on loyalty is weakening. The reason is that dissatisfaction and satisfaction encourage the client to take an action - change of supplier or deepening relations with him accordingly. In turn, the average satisfaction does not specify his preferences and is not an incentive to any activity. In this case, his behavior is difficult to predict - he can both continue to use services of the company, and prefer the services of competitors. (Coyne, 1989)



Bowen and Chen (2014), in turn, also constituted a model of influence customer satisfaction on loyalty. In their study, they used the same seven-point scale as Albert Caruana and Mohammad Suhainy Abdull Rahim, but their results showed a non-linear relationship between satisfaction and loyalty: (Figure 2)



**Figure 2 Non- linear dependence of customer loyalty on their satisfaction**

**Source: (Bowen, T, & Chen, 2001)**

As we can see on the graph, a decrease in satisfaction by 1 point (from 7 to 6) may lead to a catastrophic drop in loyalty (about 50%). Based on this, it can be argued that the company needs to have not just satisfied customers, but also those whose expectations were less than the emotional benefits provided.

Thus, despite the differences in determining the nature of dependence loyalty from satisfaction, all researchers agreed on one thing - it has place to be. Moreover, all studies show that achieving loyalty is not possible without achieving customer satisfaction.

### **3.4 Internet banking services**

Internet banking services is a type of remote customer service with providing them access to their own accounts and bank services via the Internet. As a rule, such access is granted to each owner of a credit or debit card, as well as to legal entities that have bank accounts in one of the banks. This system is intended for independent financial transactions without visiting bank branches through a personal computer or mobile phone like transfer of funds to make payments, saving of money, ability to make deposits or withdrawals, ability to access loans and accessing one's personal account information. (Bidzhieva & Abitova, 2019)

#### **3.4.1 E-banking**

Internet banking, also known as e-banking, has changed the traditional banking industry to a technologically advanced one. According to Choudary (2013), electronic banking is known as electronic money transfer, it is also used to transfer money between customer accounts, and this process is easier than transferring money manually or visiting branches. E-banking helps to implement the system and earn more customers.

With the development of Internet and communications around the world, technology has played a significant role in increasing e-banking services for customers. Due to this service and the development of banks around the world, most banks are starting to adopt e-banking system. Since the cost of e-banking is a cheap way to make different account operations, it allows customers to avoid visiting branches for each transaction, and they can monitor money flow and check their balances 24/7. Another alternative is to use the app on smartphones or using the banks' websites. Today, most of them are implementing online banking services. Using Internet banking services allows the bank to save money by reducing the number of employees and reducing other costs related to office space rent. (Choudary, 2013).

Online banking, which can be defined as the provision of information or services by a bank to its customers over the Internet, has been one of the major developments in the financial service sector. (Floh & Treiblmaier, 2006). Electronic banking technology represents a variety of different services, ranging from the common automatic teller machine services and direct deposit to automatic bill payment, electronic transfer of funds, and computer banking. Internet banking enables speedy transactions, 24/7 access, time and money saving through providing free paper, and complete and up-to-date transactions, where Internet

banking is no longer a competitive advantage but a competitive necessity for banks. (Kolodinsky, 2004).

Based on Anesti (2004), her master's thesis explains that the cost of operations in traditional banks is higher than in online banks. This means that providing services over the Internet is cheaper than in a traditional branches. According to Baraghni (2007), Internet banking has a significant impact on the Bank's share in the financial market, and in terms of technological time, it will allow the Bank to maintain its competitive advantages with the same banks that operate in the same area.

#### **3.4.1.1 Advantages of e-banking**

##### **Advantages of e-banking for customers according to Renu and Singh (2019)**

- E- banking has twenty-four-hour access and delivers services to customers. It's a very convenient way for those people who can't reach the bank branches during the bank's work hours because of their work schedule, ill-health etc.
- People no longer have to go to the bank branches, lose their time staying in the long queues to pay off the bills and make transactions.
- Easy access to accounts information from anywhere in a quick time.
- User-friendly, simple to get, open and operate.
- The customer can obtain funds at any time from ATM counters.
- The funds can be transferred easily from one account to another, any payments can be made online, users can check the account balances, apply for loans, make purchases fast and efficiently.
- Bank customer has an access to see every transaction on his/her account.
- User can manage several bank accounts easily through Internet banking.
- Customer can easily monitor an account at any time, know about any fraudulent activity or threat to the account before it poses severe damage.

(Renu and Singh 2019)

### **Advantages of e-banking for banks according to Baby (2017)**

- E-banking helps to reduce the cost of bank services by offering a lot of personalized services to their customers, which helps to create a better customer relation.
- It gives banks the advantage among their competitors.
- The use of e-banking helps to reduce the amount of paper money that leads to the less printing of them.
- The ability for banks to serve the large customer base.
- There is very low level of incidents or errors, but if they happen, they can be noted and resolved quicker.
- Implementing of e-banking minimizes business overhead and banking expenses.
- E-banking provides the bank with an almost paperless system.
- All payments are made on time.
- Through websites, banks can earn revenue by promotional activities.
- There is less work that has to be done by bank employees since customers can make a lot of basic operation themselves.

(Baby 2017)

### **3.4.1.2 Disadvantages of e-banking**

- The use of electronic banking has placed additional responsibilities on the customers to transact with the service.
- Understanding the usage of Internet banking might be difficult for a beginner at the first go.
- One cannot use it, in case; the bank's server is down.
- Any major problems or disastrous management in e-banking can destroy the banks reputation quickly and easily.
- People wishes to have a bank receipt.
- There are even people who wishes to hold cash liquidly which makes them more satisfied than that of online transactions.

(Ms. Jasdeep Kaur 2017)

### **3.4.2 Web-banking**

Web banking is another channel that helps clients provide financial or non-financial services that provide banks, based on Hoehle et al. (2012).

Another element of e-banking is web banking, by which the customer can access their bank account via the bank's web site using the user name and password, and another thing in web banking to get the level of customer satisfaction is the design of the website, since it has a positive effect on to the client was it is convenient to work it, explained by Lin, et al. (2015). In addition, the main factor for the bank's marketing activities is a website, and its content has a great importance, since it affects customer satisfaction. Web design and layout, high-quality graphics and color are the main characteristics of a competitive website, as mentioned by Ahmad, et al.(2011)

### **3.4.3 Mobile banking**

Reddy & Babu (2018) explained in their research that mobile technologies are revolutionizing the banking industry's global electronic payment system, because by creating a large number of opportunities for banks, it makes them more convenient for customers in developed countries, and this technology can reach many people in the emerging market, however, many banks that face the technology system face serious problems as the new customers are changing the economic system of these industries.

Mobile banking is a way for the customer to perform banking actions on his or her cell phone or other mobile device. These payments may involve person-to-person, person-to-business, or business-to-business payments and rely on wireless Internet technology and on a downloaded application in order to execute the payment. Commerce is the trading of something of value between two entities. That something 'may be goods, services, information, money, or anything else the two entities consider to have value. (Rout, 2019)

Baptista and Oliveira (2015) has determined that mobile banking is one of the types of execution of financial services. The client's device is almost connected to the mobile bank and the communication network, and it is impossible to get access without it. Device establishes a connection between the banking application, which the client can download and connect to the network to send and receive data and information through the banks.

Gomachab and Maseke (2018) in their research identified these mobile banking factors that affect customer satisfaction, as well as factors such as trust, security, ease of use, transaction

cost, convenience, and response. Determine the level of satisfaction comes after the customer's decision-making process.

### **3.5 Analysis of banking services in Kyrgyzstan**

The banking system of the Kyrgyz Republic consists of National Bank of the Kyrgyz Republic and commercial banks. Currently Banking system is regulated by the Law of the Kyrgyz Republic “On National Bank” and the Law “On Banks and Banking”.

On August 31, 1991, an extraordinary session of the Supreme Council of the Republic of Kyrgyzstan adopted a resolution on the "Declaration of state independence of the Republic of Kyrgyzstan". According to this historical event, the Republic of Kyrgyzstan was declared an independent, sovereign, democratic state. Since the state's independence, the Kyrgyz Republic has begun to conduct policy on the transition to market relations through the implementation of economic changes that directly affected the banking system. The government of the Kyrgyz Republic has started negotiations with Central banks of foreign countries and other international financial organizations on the participation of the Republic in various integration unions, which has affected the development of the banking system. (NBKR, Development trends of the banking system, 2006)

The first law adopted in the field of banking regulation, after acquiring the status of an independent state, was the law of the Kyrgyz Republic “on the State Bank of the Republic of Kyrgyzstan” of June 27, 1991, based on which was established by the State Bank of the Republic of Kyrgyzstan, which received functions of the sole regulator of monetary policy and currency policy of the country, functions for issuing banknotes and supervision of commercial banks. On March 6, 1992, the State Bank of the Kyrgyz Republic was transformed into the National Bank of the Kyrgyz Republic. (Brown et al. 2009)

On May 3, 1993, the Kyrgyz Republic introduced the national currency resolution “on the introduction of the national currency”. On May 10, Russian rubles began to be exchanged for the national currency at the rate of 1 Kyrgyz Som to 200 Russian rubles, and on May 14, the Kyrgyz Som became the official national currency in order to reduce inflation and stabilize commodity prices. (NBKR, Banking Gazette of the Kyrgyz Republic, 2007)

Nowadays in the banking system of the Kyrgyz Republic is dominated by traditional services (lending, deposit taking, cash services, currency exchange, receipt/payments, etc.). Banking services provided by banks and non-Bank financial institutions (microfinance company, micro-credit company, micro-credit agency), credit unions, specialized financial and credit organizations, exchange offices, payment institutions and payment system operators.

The coverage of the population with financial services in the Kyrgyz Republic is estimated mainly by the volume of loans and deposit insurance, as well as by the number of bank branches.

The concentration of representative offices of commercial banks falls on the city of Bishkek (70) and Osh region (60), which shows the weak economic activity of the country's regions and the lack of need for commercial banks to open and maintain their representative offices in the regions.

At the same time, the development of information technologies can solve the problem of covering all regions of the country with the services of financial organizations. For example, through remote identification, citizens can open bank accounts, get loans and use banking services without leaving their region. (Brown et al. 2009)

According to statistical information for 2018 the total assets of the banking system increased by 12.1% and amounted to 222.0 billion Kyrgyz Soms by the end of the year. The main part of the bank's assets was accounted by loans, the share of which increased by 2.9 percentage points compared to 2017 and amounted to 57.6%. The total volume of the Deposit base of commercial bank's clients amounted to 133.1 billion Kyrgyz Soms, an increase of 9.5% since the beginning of 2018. (NBKR, 2019)

Even though financial services coverage is considered one of the main factors in the development of the modern economy, this area is not sufficiently developed in the Kyrgyz Republic.

Today, technologies that facilitate access to banking services that do not require the physical presence (participation) of individuals in the banking and payment sphere include:

- 1) remote access to banking services (Internet banking, mobile banking);
- 2) Bank cards and Internet acquiring;
- 3) a full range of e-money products (prepaid cards, e-wallets, etc.).

Nevertheless, despite all these measures, cash turnover remains high: cash withdrawals account for 90% of bank card transactions. Currently, measures to increase the volume of non-cash payments are aimed by introducing mandatory acceptance of non-cash payments in retail businesses. The development of Internet banking began in 2012. The cost of implementing Internet banking was significant, and the population did not know about this service. As of the end of 2017, almost every Bank had its own Internet banking or mobile banking service (Internet access to the Bank via a mobile app).



Currently, there are 25 commercial banks in the banking system of the Kyrgyz Republic (including the Bishkek branch of the National Bank of Pakistan) and 328 branches of commercial banks.

The main banks in the country offering services are:

- RSK Bank
- Demir Bank
- Optima Bank
- Commercial bank Kyrgyzstan
- KICB

(NBKR, Annual report of the National Bank of the Republic of Kyrgyzstan for 2019, 2019)

E-banking in Kyrgyzstan is a remote customer service system that allows them to independently perform various financial operations through such functionality. This includes managing your own current account and transfer of funds. SSL (Secure Sockets Layer) client technology is used to authenticate the client; due to this technology it is possible to prevent unauthorized access and seizure of the account by hackers. Using this service, customers can:

1. Receive complete banking information;
2. Receive data on existing services, whether it is an open account or deposit, cards, loan repayment periods, etc.;
3. Block and unblock cards in the event of their loss or theft;
4. Find out all about your money transfers, payments made within the service;
5. Change the cipher to enter the banking service;
6. Create, edit and delete templates for automatic payment for some payments.

In most cases, all banks offer the same or relatively equal conditions that may be suitable for certain categories of citizens. For example, if we are talking about a more favorable rate for the exchange of currencies or for obtaining loans. Due to this, all groups of clients can choose for themselves the financial institution that suits them best. A rather popular Internet service is still money transfer from and to Russia, since close cooperation is maintained between the countries. Equally popular is currency exchange and micro-lending, which can be done in a very short time by filling in the necessary forms on the website. As e-banking is constantly evolving, customers every year get more functionality, bonuses and a more flexible and thoughtful service system. (Financial portal, 2019)

### 3.5.1 Evaluation of financial access in Kyrgyzstan

In the Kyrgyz Republic, financial services are mainly provided by commercial banks and non-bank financial credit institutions, while in developed countries they are provided by stock markets. The banking sector is a key element of the financial system in Kyrgyzstan.

In 2019, the Kyrgyz Republic began to develop a National Strategy for Financial Inclusion as part of the project to improve financial inclusion in Central Asia. This should have a positive impact on the country's economy, as the financial sector will promote inclusive growth and promote a competitive and export-oriented economy.

There were conducted three waves of evaluation surveys in 2011, 2014, 2017 by National State Bank of Kyrgyz Republic, where every time took part 1000 different respondents at the age of 15 and older. (National Bank of Kyrgyz Republic, 2020)

Age 15+	2011	2014	2017
Account in the financial institutions	3.8	18.5	38.3
Male	3.6	17.9	38.7
Female	3.9	18.9	38.0
In rural areas	2.6	16.1	37.7

**Table 2 The percentage of respondents who have an account in financial institutions**

**Source: (Global Findex)**

According to the results of 2017 38.3% of population has an account in financial institutions, male – 39%, Female – 38%. Comparing to 2011 the users' number has increased almost 10 times (Table 2).

In 2017, in the Kyrgyz Republic, about 40 percent of respondents did not have accounts with financial institutions due to lack of funds. Approximately 19 percent of the population still distrust financial institutions. (National Bank of Kyrgyz Republic, 2020)

### **3.5.1.1 Payment operations**

- **Government payments to the public**

Government transfers include any social benefits, such as subsidies, unemployment benefits, or payments for education, or medical expenses.

In countries with high income, the share of the population receiving government payments is approximately 43%, while in developing countries it is 19%.

In the Kyrgyz Republic, according to a survey of respondents, the largest percentage of state payments are made for pensions, about 29%.

- **Payments of private sectors to the public**

Overall, about 28% of the world's population reported receiving at least one private-sector salary payment from an employer. However, in high-income countries, this figure is approximately 46%, and in developing countries – 24%.

In the Kyrgyz Republic, 23 percent of the population received a salary in the private sector from an employer via banks.

- **Internal money transfers**

In developing countries, an average of 27% of adults reported using domestic money transfers in the past 12 months, either sending money or receiving it from a relative or friend living elsewhere.

In the Kyrgyz Republic in 2017, about 25% of the respondents surveyed said that they used money transfers. The most popular among the population is sending / receiving money transfers through financial institutions, approximately 17%.

- **Use of the account**

In the Kyrgyz Republic, in 2017, only 27% of the respondents surveyed made an online payment and 23% received an online payment.

According to the National Bank statistics, at the end of 2018, there were 25 commercial banks, including 321 branches, 885 savings banks and 154 exit cash desks. In 2018, the number of issued bank cards amounted to 2,432,6 thousand units, the main share of issued cards falls on the capital city of Bishkek – 40.4 percent. For example, ATMs and POS terminals are used as tools for accessing bank account management, making non-cash payments, and cashing out funds. Thus, the total number of ATMs in the country is 1,583 units, and the number of ATMs per 100 thousand people of working-age is 43.2 units, the main share of which is in Bishkek (44.0 percent).

By the 2018, the number of POS-terminals amounted to 10,946 units, 274.1 POS-terminals per 100 thousand people of the working population, which are mainly concentrated in Bishkek. (NBKR, 2019)

Based on the data above, it can be noted that all indicators show a constant positive growth. The most popular financial product among the Kyrgyz people are debit cards. In recent years, thanks to the “Increase in the share of non-cash payments and settlements in the Kyrgyz Republic” State program, the number of transactions made using debit cards has been steadily growing.

In 2018, the total volume of transactions using debit cards amounted to 192.2 billion Soms, which is 33.6 percent more than in 2017. In the country there is a lack of a culture of paying by debit card for goods and services. Thus, 94.5 percent of all transactions accounted for cash withdrawal.

The largest share of bank cards circulation is in Bishkek due to the concentration of population in the capital, inter-regional migration, business activity, financial resources, commercial bank branches, etc., which led to the relative development of the payment services market. (NBKR, 2019)

In the Kyrgyz Republic, the rural population counts for 66.0 percent of the total population. This part of the population has limited access to banking services. There are several reasons for this, the main ones are the high cost of servicing bank branches in rural areas and the low level of infrastructure development. Therefore, the National Bank is taking a set of measures to develop access to banking and non-banking services in rural areas through the widespread introduction of innovative payment technologies, including mobile banking, electronic money and electronic wallets.

Financial accessibility indicators in the Kyrgyz Republic show a positive growth trend. This is due to the fact that the Republic has adopted a special state program to improve financial accessibility and literacy of the population. (National Bank of Kyrgyz Republic, 2020)

## 4. Practical Part

The practical part is based on a survey, data analysis, Kolmogorov-Smirnov and Shapiro-Wilk normality test, and Kruskal-Wallis non-parametric statistical test for hypotheses testing based on data collected by survey.

### 4.1 Research questions

RQ1: The adoption of e-banking among Kyrgyz customers is affected by the factors identified in the literature.

RQ2: Internet banking has a positive impact among users in Kyrgyzstan

### 4.2 Research design

The survey was conducted among the users of Internet banking in capital city of Kyrgyzstan – Bishkek. It is important to analyze and determine the level of relationship between Internet banking and customer satisfaction. All the findings from the survey will help us to provide answers to our objectives.

The survey analyzes the impact of seven factors identified in the literature review. The factors are represented as SERVQUAL model dimensions:

Incorporated factors are the following:

1. Customer expectation
2. Customer loyalty
3. Reliability
4. Guarantee
5. Risk
6. Trust
7. Security

The researcher puts forward preliminary hypothesis, that respondents have a good level of satisfaction.

- Null Hypothesis:  $\mu = \mu_0$ ,  $\mu_0 = 3$ . There is no statistically significant difference between expected and real level of satisfaction from using Internet banking.

- Alternative Hypothesis:  $\mu > 3$ . There is statistically significant difference between expected and real level of satisfaction from using Internet banking.

To get the necessary information, was created a survey, in which took part 247 respondents. Questions for the survey were selected after carefully analyzing the literature and understanding the main differences that were mentioned in the literature review of this thesis. To check if there is a relationship between the responses of users regarding the satisfaction with Internet banking, a statistical analysis was conducted.

### **4.3 Data collection**

Questions for the survey were formulated based on the literature. The author focused on the survey and used it to collect specific data from respondents. In this study, the survey was divided into two sections, so the first section includes demographic questions that inquire about the respondent's gender, age, qualifications, the researcher asks a question about how long customers use Internet banking, as well as a question about the respondent's profession, and in the last question of the first section, about the bank where the respondent is served. The second section covers part of online banking and customer satisfaction. The independent variables in the study include 17 general questions. The researcher used a 5-point Likert scale in this section, ranging from 1 as strongly disagree to 5 as strongly agree, which the researcher focused on, and used seven dimensions of the SERVQUAL model, such as customer expectation, customer loyalty, reliability, guarantee, risk, trust, and security. However, the terms used in the questionnaire are simple so that respondents can easily understand them when trying to answer questions. In addition, the survey was conducted in Kyrgyz and Russian, since both languages are official in Kyrgyz Republic and not all respondents know both languages. The survey was created in the Google Forms file and sent to Internet-banking users via email and What's App messenger, as well as to Instagram users. The survey lasted from 17 of November 2020 till 22 of November 2020. It was conducted completely anonymously so that the respondents could fill out all the questions with complete confidence. Also, all questions in the second part were optional, so the respondent could skip the question if they didn't want to or couldn't answer, or didn't understand the question. The last 18th question was an open question, where respondents if they still do not use Internet banking were giving their reasons why.

The entire questionnaire of this study was used and accepted by several authors in previous studies in a different fields, and they Worku, et al. (2016), Nimako, et al. (2013), Wu, et al. (2014), Chingoka (2015), Alalawan, et al. (2016), Alalwan, et al. (2017), Yu, et al. (2015).

## 4.4 Normality test

The normality test is a statistical test that is used to find out if variables are normally distributed or are not normally distributed. It can be indicated by two tests: the Shapiro-Wilk test and Kolmogorov-Smirnov test.

Compare with the P-value of the hypotheses:

- Null hypothesis: the data is normally distributed
- Alternative hypothesis: data is not normally distributed

If the P-value is less than significant level of 0.05, that means that null hypothesis is rejected, and data is not normally distributed.

If the p-value is more than significant level of 0.05, that means that null hypothesis is not rejected and data is normally distributed.

### 4.4.1 Normality testing result

Tests for Normality							
	Test	df	Statistic		p Value		Result
<b>Hypothesis 1</b>	Shapiro-Wilk	246	W	0.80005	Pr < W	<0.0001	Reject H0
	Kolmogorov-Smirnov	246	D	0.306767	Pr > D	<0.0100	Reject H0

**Table 3 Normality test result of the collected data**

**(Source: table made by author)**



## 4.5 Kruskal-Wallis Non-Parametric test

Statistical analyses were performed by using the Kruskal-Wallis non-parametric test, applying a significance level of 5%. The Kruskal-Wallis Test is a version of the independent measures (one-way) ANOVA that can be performed on ordinal (ranked) data.

Kruskal Wallis test has 7 steps:

1. Define Null and Alternative Hypotheses
2. State the Alpha
3. Calculate Degrees of Freedom
4. State Decision Rule (Critical Value)
5. Calculate Test Statistics
6. State Results
7. State Conclusion

If the Chi-Square is greater than Critical Value, the null hypothesis is rejected.

If the Chi-Square is not greater than Critical Value, do not reject the null hypothesis.

(Elliott and Hynan 2011)

All the statistical calculations were performed by SAS Studio.

## **4.6 Hypotheses testing**

### **4.6.1 Hypothesis 1**

Is there a difference between expected and real level of satisfaction from using Internet banking?

Null Hypothesis:  $\mu = \mu_0$ ,  $\mu_0 = 3$ . There is no statistically significant difference between expected and real level of satisfaction from using Internet banking.

Alternative Hypothesis:  $\mu > 3$ . There is statistically significant difference between expected and real level of satisfaction from using Internet banking.

In the first hypothesis there is used Normality test to determine if there is a difference between expected and real level of satisfaction from using Internet banking. From the table 3 above we can see results of test statistics by Kolmogorov - Smirnov test, p-value =  $<0.01$  and Shapiro-Wilk test p-value =  $<0.0001$ . Since the values less than 0.05, the null hypothesis is rejected.  $\mu > 3$ . It means that, there is statistically significant difference between expected and real level of satisfaction from using Internet banking.

### **4.6.2 Hypothesis 2**

Is there a significant difference in total level of satisfaction among male and female users?

Null Hypothesis:  $\mu_1 = \mu_2$ . There is no statistically significant difference in total level of satisfaction among male and female users.

Alternative Hypothesis:  $\mu_1 \neq \mu_2$ . There is statistically significant difference in total level of satisfaction among male and female users.

In the hypothesis 2 there is used Kruskal-Wallis non-parametric statistical test to determine if there is a significant difference in total level of satisfaction among male and female users. From the table 4 below we can see the Chi-Square results and critical value from the Chi-Square distribution table. Since the Chi-Square 1.0418  $<$  3.841 Critical value, we do not

reject the null hypothesis, this means that there is no statistically significant difference in total level of satisfaction among male and female users.

### **4.6.3 Hypothesis 3**

Is there a significant difference in total level of satisfaction among people of different “age” groups?

Null hypothesis:  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$ . There is no statistically significant difference in level of satisfaction among people of different “age” groups.

Alternative hypothesis:  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$ . At least one “age” group has different level of satisfaction from using online banking.

From the results provided in table 4,  $\chi^2$  is more than our critical value, which means that we reject the null hypothesis and accept the alternative one. At least one age group has different level of satisfaction from using online banking.

### **4.6.4 Hypothesis 4**

Is there a significant difference in total level of satisfaction among people of different “education degree” groups?

Null hypothesis:  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$ . There is no statistically significant difference in level of satisfaction among people of different “education degree” groups.

Alternative hypothesis:  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$ . At least one education degree group has different level of satisfaction from using online banking.

We do not reject the null hypothesis since our statistical value from the table 4 is less than the critical value. There is no statistically significant difference in total level of satisfaction among different “education degree” groups.

#### 4.6.5 Hypothesis 5

Is there a significant difference in total level of satisfaction among people of different “professional status” groups?

Null hypothesis:  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6$ . There is no statistically significant difference in level of satisfaction among people of different “professional status” groups.

Alternative hypothesis:  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 = \mu_6$ . At least one group has different level of satisfaction from using online banking.

We do not reject the null hypothesis and accept the alternative one, since the test statistics result 9.4470 is less than critical value 11.070. It means that here is no statistically significant difference in total level of satisfaction among different “professional status” groups.

#### 4.6.6 Hypothesis 6

Is there a significant difference in total level of satisfaction among people of different “time period of use of Internet banking” groups?

Null hypothesis:  $\mu_1 = \mu_2 = \mu_3 = \mu_4$ . There is no statistically significant difference in level of satisfaction among people of different “time period of use of Internet banking” groups.

Alternative hypothesis:  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$ . At least one group has different level of satisfaction from using online banking.

The null hypothesis is not rejected according to results provided in the table 4. There is no statistically significant difference in total level of satisfaction among people of different “time period of use of Internet banking” groups.

#### 4.6.7 Hypothesis 7

Is there a significant difference in total level of satisfaction among people of different “bank of use” groups?

Null hypothesis:  $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = \mu_7$ . There is no statistically significant difference in level of satisfaction among people of different “bank of use” groups.

Alternative hypothesis:  $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 = \mu_6 = \mu_7$ . At least one group has different level of satisfaction from using online banking.

As shown in the table 4, the Chi-Square result is less than the critical value. That means that we do not reject the null hypothesis. There is no statistically significant difference in total level of satisfaction among different “bank of use” of Internet banking groups.

#### 4.7 Kruskal-Wallis Test results

	Kruskal-Wallis Test Chi-Square $\chi^2$	Critical value at 0.05 sig level ( $\chi^2$ distribution)	df	Results
<b>Hypothesis 2</b>	1.0418	3.841	1	1.048<3.841 Do not reject H0
<b>Hypothesis 3</b>	11.2757	9.488	4	11.2757>9.488 Reject H0
<b>Hypothesis 4</b>	2.7501	9.488	4	2.7501<9.488 Do not reject H0
<b>Hypothesis 5</b>	9.4470	11.070	5	9.4470<11.070 Do not reject H0
<b>Hypothesis 6</b>	2.1599	7.815	3	2.1599<7.815 Do not reject H0
<b>Hypothesis 7</b>	9.0018	11.070	5	9.0018<11.070 Do not reject H0

**Table 4 Results of the Kruskal-Wallis non-parametric statistical test**

(Source: table made by the author)

## 5. Results and Discussion

In this section, the author interprets results of the two-part survey and results of Kruskal-Wallis non-parametric statistical test, Kolmogorov-Smirnov, Shapiro-Wilk normality statistical test of hypotheses.

### 5.1 Survey results

Overall, in the survey took part 247 respondents, 46.3% (n=114) off them are male and female – 53.7% (n=133)

The majority of the respondents are 18-23 years old – 40.9% (n=101), then the respondents older than 43 years old - 25.1% (n=62), then other age groups.

The majority of the respondents have bachelor's degree – 50.6% (n=123), High school degree - 11.1% (n=30), Master's degree - 34.5% (n=85), PhD. Doctoral Degree - 3%(n=7) and Academical degree of professor have only 0.9% of respondents (n=2).

The most of respondents use Internet Banking for 1-4years – 51.9% (n=128), 34% (n=85) - respondents using Internet banking less than a year, 5-9 years – 10.8% (n=26) and more than 9 years – only 3.3 % (n=9).

Regarding the professional status of respondents: the majority are the state employees - 38.9% (n = 96), students - 35.6% (n =88), private workers -11.7% (n = 29), self-employed - 4.9% (n = 12).

The next question of the survey was about bank of customer's service: From the results, author can conclude that there are three banks with majority of users of their Internet banking system. The most of the respondents are served in the Demir Bank – 23% (n=58), then in the Optima Bank - 20.2%(n=50), then in the RSK Bank- 17.4%(n=43).

The second part of the questionnaire covered part of online banking and customer satisfaction. The author used a 5-point Likert scale in this section, ranging from 1 as strongly disagree, 2 as disagree, 3 as neutral, 4 as agree and 5 as strongly agree. From the survey results, the average level of satisfaction is 4 out of 5.

Most people know what Internet banking is ( $\bar{x}$ =4.424,  $sd$ =1.019), while more than half of users is satisfied with Internet banking provided by their banks ( $\bar{x}$ =3.9662,  $sd$ =1.182) and

with cost of servicing of their accounts ( $\bar{x}=3.963$ ,  $sd=1.288$ ). Most of the respondents prefer to use Internet banking instead of visiting the branches of their banks ( $\bar{x}=4.408$ ,  $sd=1.09$ ). Also, we can see that most of the Internet banking users trust and make most of their operations using Internet banking ( $\bar{x}=3.941$ ,  $sd=1.296$ ) and their control over their bank accounts has improved since they have been using Internet banking ( $\bar{x}=4.045$ ,  $sd=1.157$ ). Users consider that it is not complicated to learn how to use online banking ( $\bar{x}=4.316$ ,  $sd=1.049$ ), people are satisfied with the online services provided by banks ( $\bar{x}=3.983$ ,  $sd=1.119$ ).

By guarantee factors of customer satisfaction with Internet banking, we can see that users believe if an error occurs bank can quickly and effectively fix it ( $\bar{x}=3.764$ ,  $sd=1.214$ ), the behavior of the banks employees inspires confidence in the client ( $\bar{x}=4.137$ ,  $sd=1.061$ ), and they believe that bank's employees have the knowledge to answer customer questions ( $\bar{x}=4.26$ ,  $sd=0.856$ ). Most of users will recommend other people to use the Internet banking ( $\bar{x}=4.411$ ,  $sd=0.989$ ), but they see the risk of controlling accounts while using e-banking by hackers ( $\bar{x}=2.907$ ,  $sd=1.39$ ), but they still feel safe providing confidential information for online transactions ( $\bar{x}=3.75$ ,  $sd=1.163$ ) and do not expect the bank online service have a defect in the service ( $\bar{x}=3.75$ ,  $sd=1.163$ ). A tabular summary of results is provided in Table 7 in the appendix.

The last question of the survey was an open question, not obligatory, where respondents if they still do not use Internet banking were giving their reasons why. The author got 41 answers.

The most of the answers were about:

- respondents do not trust to the online services
- afraid for their confidentiality and savings
- do not know how to use Internet banking

## **5.2 Hypotheses testing results**

The expected level of satisfaction by the author was 3. From the survey results, we can see that the average customer satisfaction with Internet banking in Kyrgyzstan is equal to 4. According to the hypotheses testing results in the section 4.6, we can see that there is a statistically significant difference between expected and real level of satisfaction from Internet banking using.



From the Kruskal-Wallis statistical test we can state the result that there is no difference in total level of satisfaction among female and male users, among different educational degree and professional status groups, different time period of use of Internet banking groups and among different banks of use groups.

However, there is a difference between users of different age groups. Majority of the users are between 18-23 years old group (40%), then people older than 43 (20%), 24-30 years old (16.2%), 31-36year old (8.5%) and others.

### **5.3 Difference between studies results**

In this part author will discuss differences between this study and other similar studies conducted in different countries.

The first study of Nimako, et al. (2013) is about the customer satisfaction with Internet banking service quality in the Ghanaian banking industry. Authors also used the questionnaire to collect the data from customers. They have distributed 200 questionnaires to respondents of two banks in Ghana – Merchant bank and Ghanian commerce bank. Overall satisfaction with the Internet banking service quality was identified by asking respondents to rate their satisfaction with Internet banking service quality using a 5 point disconfirmation scale: Much worse than expected (1), worse than expected (2), equal to expectation (3), better than expected (4) and much better than expected (5). The questionnaire was conducted from 5 demographical questions (gender, age, education, income, marital status) and 17 questions based on the customer satisfaction dimensions.

There is a difference between the study of Nimako, et al. (2013) and this study. In their study 51.8% of the respondents were males and 48.2% were females. 12.9% of the respondents were under 25 years and 38.1% were between 25 and 35 years, and 30.2% between 36 and 45 years respectively, while 16.5% and 2.2% were between 46 and 55 years and 56 years and above respectively. While in this study 21.5 % of the respondents are above 43 years. And the majority of respondents are at the age of 18-23 - 40.9%

All respondents in their study were educated with majority of them, 79.1% having tertiary education, while 7.9% had Senior High School. In terms of monthly income, few of them, 2.9% earned below GH Cedis 100, 33.1% earned between GH Cedis 101 to Cedis 500, while 27.3% and 18.7% earned between GH Cedis 501 to GH Cedis 1000 and GH Cedis 1001 – 1500 respectively. 18% of them earned above GH Cedis 1500. 64.7% of the respondents

were married, 31.7% were single and 3.6% had other marital status. While in this study author did not include the questions about the marital status and income statement.

According to their results, customers are not satisfied with Internet banking in Ghanaian banking industry.

The reasons of unsatisfaction are:

- limited speed of response to customers requests in procedures
- low speed of the loading web-pages
- the ability of Internet banking system to guide customer to resolve problems, customers have many problems in accessing and utilising online banking portals
- the high cost of service of bank operations.

In the author's study there is a relationship between customer satisfaction and e-banking in Kyrgyzstan. Customers are satisfied with the speed of response to their requests in any procedure, with the speed of the loading web-pages, with the ability of e-banking system to help to solve the problems, and there is no complaints for the e-banking service cost as it is free of charge in every bank in Kyrgyzstan except the fee for some operations.

In another study of Worku, et al. (2016) of impact of e-banking on customer satisfaction in Ethiopian banking industry, the outcomes are slightly similar to the author's study. They also have used the questionnaire form, and they have distributed 420 questionnaires and received back 402 questionnaires from respondents in 12 commercial banks and 20 branches. In their study they have used also the 5 point Likert scale questions to identify the customer satisfaction with e-banking. The questionnaire consisted from 10 questions identifying the customer satisfaction and 5 demographical questions (gender, age, occupation, marital status, occupation status).

From the results 30.85% were female and the rest 69.15% were male. In terms of age as 94.53% of 402 were respondents whose age was between 18 and 35, there were no respondents whose age were 51 and above. Marital status of the respondents 73.88% single and 24.88% married and 1.24% separated and there were no divorced and widowed from the sample respondents participated. Educational status results shows that 86.56% of the respondents current educational status is university degree and above. Occupational results of the respondents showed that students were the majority users which account 94.28%, business men/women accounts 1.24% and there were no respondents from retired category in the sample respondents under consideration. (Worku, et al., 2016)

According to the obtained data from the 10 questions questionnaire about customer satisfaction and demographical questions, all the results are significant, and based on this data there is a positive relationship between customer satisfaction and demographic characteristics, e-banking has impact in improving customer satisfaction, impact in reducing waiting time for customers to get bank service and impact in improving customers to control their account movements. Customers are satisfied with e-banking industry in Ethiopia. From the studies we can see that there is no significant difference between results of Worku, et al. (2016) studies and the author's studies.

## 6. Conclusion

In the conclusion part, the author will focus on each objective and the main findings that have been found in this study.

The main objective of thesis was to identify impacts of Internet banking on customer satisfaction in Kyrgyzstan. The author identified that the development of Internet banking ensures the progress of interaction between banks and customers: customers can check their balance, make transactions without visiting the bank's offices, while customers can be sure of security if the bank takes the appropriate precautions necessary when making online transactions. In total only 40% of people use Internet banking services in Kyrgyzstan. Almost 80% of all respondents are satisfied with Internet banking services.

The first partial objective was to assess the current state of Internet banking in Kyrgyzstan. It was done in the literature part of the thesis. After analyzing all the literature about the customer satisfaction and Internet banking, the author presents an overview of banking system of the Kyrgyz Republic. Describes the banking system formation, provides information about banking services and statistical evaluation of financial access in the Kyrgyz Republic provided by the National Bank of the Kyrgyz Republic.

The second partial objective was to examine the relationship between the dimensions of Internet banking service quality and customer satisfaction. It was done in the literature review part by analyzing the studies about customer satisfaction and Internet banking services. There were identified main factors affecting customer satisfaction by SERVQUAL seven dimensions model which were used in the third partial part to conduct the survey.

The third partial objective was to conduct a survey, interpret findings and formulate the conclusion.

Based on the demographical results of the survey among Internet banking users in can be concluded that most of the respondents are at the age of 18-23, there is no significant difference between gender of users, majority has university bachelor's degree, most of respondents have been using e-banking for 1-4 years, by professional status most of them are state employees and students.

From the second part of the questionnaire based on customer satisfaction author can conclude that there is a relationship between demographic characteristics and customer satisfaction of e-banking. Most of respondents are satisfied with online services provided by their banks, and make most of their transactions online which means that they trust to the online banking services. Respondents believe that e-banking is more convenient, makes their life more easier and saves their time which leads to their loyalty. Banks themselves can guarantee customers safety of their personal information, account history and guarantee the client security. Customers do not expect the bank online services to have any defects which says about reliability of the banks, but still afraid of the risks of personal information leakage. The control over their bank accounts has improved since customers started to use online banking services, they believe that it is not complicated to learn how to use online banking and people are satisfied with online services provided by their banks, which is appropriate for customer expectations.

Year by year the number of e-banking users is growing which positively affects the banks and the Kyrgyz economy in general. By the activities carried out by the state and the National Bank, the financial literacy of the population is growing, especially among the young generation, who are becoming active users of remote financial access channels as mobile banking, e-banking, electronic money and electronic wallets. This is facilitated by the increasing coverage of the country's regions with high-speed Internet access and the development of an e-commerce.

The Internet banking provides an opportunity for individuals, firms and communities that are engaged in entrepreneurial activities to solve economic and social problems more effectively. The Internet industry in general serves as a tool to equalize the difference in the development of the country's regions, makes a significant contribution to the country's GDP and the fight against unemployment.

### **Limitations of the research**

The key limitation of the thesis was a sampling of respondents. In the survey took part mainly internet banking users from the capital city of Kyrgyzstan, from Bishkek. The percentage of respondents from other cities and regions is significantly lower. The reason is that Internet banking services are only gaining momentum in developing in Kyrgyzstan and most of the users are located in the capital city and the number of users in other regions is low, it was challenging to reach those places and find current users of e-banking services. However, the author could find some and get filled questionnaires from them.

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## 8. Appendix

	CATEGORY	FREQUENCY	PERCENTAGE	PERCENTAGE SUM
Gender	Male	114	46.3%	46.3%
	Female	133	53.7%	100.0%
Age group	18-23	101	40.9%	40.9%
	24-30	40	16.2%	57.1%
	31-36	21	8.5%	65.6%
	37-42	23	9.3%	74.9%
	Older than 43	62	25.1%	100.0%
Degree	High school degree	30	11.1%	11.1%
	Bachelor's degree	123	50.6%	61.7%
	Master's degree	85	34.5%	96.1%
	Doctoral degree PhD.	7	3%	99.1%
	Academical degree of professor	2	0.9%	100.0%
Years of using e-banking	Less than a year	85	34%	34%
	1-4 years	128	51.9%	85.9%
	5-9 years	26	10.8%	96.7%
	More than 9 years	9	3.3%	100.0%
Professional status	State employee	96	38.9%	38.9%
	Private worker	29	11.7%	50.6%
	Business owner	16	6.5%	57.1%
	Self-employed	12	4.9%	62%
	Student	88	35.6%	97.6%
	Other	6	2.4%	100.0%

**Table 5 Calculations of demographical questions responses**

**(Source: table made by the author)**

BANK	FREQUENCY	PERCENTAGE	PERCENTAGE SUM
Bank Kyrgyzstan	26	14.2	14.2
KICB	38	15	29.2
Demir	54	23.5	52.7
RSK	39	17.4	70.1
Aiyl Bank	12	7.3	87.4
Optima	45	20.2	97.6
Other	33	2.4	100.0
Total	247	100.0	

**Table 6 Bank of service of respondents**

**(Source: table made by the author)**

Factor	Question	n	Mean $\bar{x}$	Median $\tilde{x}$	Standard Deviation	Standard Error	Min	Max
Customer satisfaction	I understand what Internet banking is	243	4.424	5	1.019	0.004	1	5
Customer expectation	I am satisfied with the online services provided by my Bank	239	3.962	4	1.182	0.005	1	5
Customer expectation	I am satisfied with the cost of servicing my Bank account	241	3.963	4	1.288	0.005	1	5
Reliability	I prefer to use online banking instead of visiting a branch of my Bank to make transactions	240	4.408	5	1.09	0.005	1	5
Customer expectation	Electronic banking facilitates the transfer of money between accounts	246	4.537	5	0.945	0.004	1	5
Trust	I do most of my banking operations using online banking.	241	3.941	5	1.296	0.004	1	5
Customer loyalty	Control over my Bank account has improved since I started using online banking	242	4.045	4	1.157	0.005	1	5

Customer expectation	Learning how to use online banking is easy	243	4.316	5	1.049	0.005	1	5
Customer loyalty	I am satisfied with the online services provided by my Bank	242	3.983	4	1.119	0.004	1	5
Guarantee	If an error occurs, Bank can quickly and effectively fix it	242	3.764	4	1.214	0.005	1	5
Guarantee	The behavior of the Bank's employees inspires confidence in the client	241	4.137	4	1.061	0.005	1	5
Guarantee	The Bank's employees have the knowledge to answer customer questions	242	4.26	5	0.856	0.004	1	5
Customer loyalty	I would recommend other people to use the online banking service	243	4.411	5	0.989	0.003	1	5
Risk	When I use online banking, hackers can control my Bank account	238	2.907	3	1.39	0.004	1	5
Client security	I feel safe providing confidential information (such as card details) for online transactions	240	3.62	4	1.274	0.006	1	5

Reliability	I don't expect the Bank's online service to have a defect in the service	236	3,75	4	1.163	0.005	1	5
Customer satisfaction	How satisfied are you with your online banking of your bank?	239	4.083	4	1.069	0.005	1	5

**Table 7 Customer Satisfaction with Internet banking**

**(Source: table made by the author)**