The Role of Telecommunication in Banking Industry of North Cyprus

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ABSTRACT

This thesis examines how information technology became one of most important factors that affect bank's client's lives these days. The research was focused on all twenty two banks including public, private and also foreign banks performing in North Cyprus. The data collection based on both primary and secondary surveys consist of questionnaire, journals and articles were used to measure the factors that influence the bank's clients for choosing electronic banking in North Cyprus.

The study shows that the followıng factors, (i) perceived usefulness (PU), (ii) perceived ease of use (PEOU), (iii) attitude toward behavior (ATB), (iv) subjective norms (SN), (v) perceived benefit (PB) and (vi) perceived risks (PR) affects clients' intention to accept and adopt all kinds of electronic banking. ATM machines as well as other similar channels such as internet banking, mobile-banking and pc-banking are known as electronic banking systems that provide almost all banking services to the clients via electronic devices.

The hypotheses were investigated for the total sample of 320 respondents. However, only 263 respondents were acceptable. The finding indicates that factors such as PU, PB, PBC, SN and ATB have a constructive impact on intention and acceptance related to usage of electronic banking in TRNC.

Keywords: TRNC, Electronic banking, Perceived usefulness, Perceived ease of use, Perceived benefit, Perceived risk, Attitude toward behavior, Subjective norm.

ÖZ

Bu tez, bilişim teknolojilerinin günümüzde banka müşterileri için çok önemli faktör ve unsurlardan biri olduğunu araştırır. Bu araştırma, Kuzey Kıbrıs'daki devlet, özel ve yabancı olmak üzere 22 banka üzerinde yapılmıştır. Toplanan tüm ana ve yan veriler anket, dergi ve makalelerin birleşiminden oluşmuştur. Bu veriler banka müşterilerinin Kuzey Kıbrıs'taki elektronik banka seçimindeki etkenleri ölçmek için kullanılmıştır.

Araştırma gösterir ki, (i) kullanışlı olma algısı, (ii) kolay kullanılma algısı, (iii) davranışlara karşı alınan tavırlar, (iv) subjektif ilkeler, (v) yararlanma algısı ve (vi) risk algısı müşterilerin ATM, internet bankacılığı, mobil bankacılık, pc-bankacılık gibi bankacılık sistemlerinde, elektronik bankacılığı kabullenip adapte etmekte etkilemektedir.

Hipotez sonucunda 320 kişi üzerinde araştırma yapılmıştır. Ama, sadece 263 kişinin cevapları kabul edilir idi. Bulgular gösterir ki, kullanışlı olma algısı, kolay kullanılma algısı, davranışlara karşı alınan tavırlar, subjektif ilkeler, yararlanma algısı ve risk algısı gibi faktörler KKTC'deki elektronik bankacılık üzerinde olumlu etkilidir.

Anahtar Kelimeler: KKTC, Elektronik bankacılık, Kullanışlı olma algısı, Kolay kullanılma algısı, Kolay kullanılma algısı, Davranışlara karşı alınan tavırlar, Subjektik ilkeler

To my Family

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PREFACE

ATB	Attitude Toward Behavior
ATM	Automated Teller Machine
E-Banking	Electronic Banking
EFTPOS	Electronic Funds Transfer at Point of Sale
FR	Financial Risk
M-Banking	Mobile Banking
MMS	Multimedia Message Service
PB	Perceived Benefit
PBC	Perceived Behavioral Control
PC-Banking	Personal Computer Banking
PEOU	Perceived Ease of Use
PerR	Performance Risk
PR	Perceived Risk
SeR	Security Risk
SMS	Short Message Service
SoR	Social Risk
SN	Subjective Norm
TAM	Technology Acceptance Model
TR	Time Risk
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action

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INTRODUCTION

1.1 Introduction

Bank's clients always had been choosing their bank regarding to the facilities that they may get form that bank; this is the reason why banks want to differentiate themselves from their competitors. Due to the bank's client's taste some of the banks just offer their customers a traditional banking delivery channel; this is what we know as physical branches. In the physical branches clients have the right to do their transactions such as opening account, transfer money to or from their accounts, get their account balances and transactions summary, etc. but on the other hand there are plenty of customers who wish to have a chance to do their transactions without a physical presentation in the banks. Therefore, the other banks try to satisfy their clients by improving their distribution channels; this is the reason why these banks try to come along with unique ideas for better communication with their clients. Communication is a process that allows meaningful information to pass from one location to the second location and between a sender and one or more receivers.

Electronic distribution channels are the newest form of communication systems between banks and their customers; hence, with the rise of client's attention to these newly delivery channels, most of the banks all over the world have been start to offer them during last decades.

As the recent rapid improvements of these technological channels landscape of the telecommunication had been dramatically changed in modern age where the old and traditional communication tools have faded out or even replaced with the electronic channels in some banks.

Most popular electronic channels that is using by banks are listed as:

- Automated teller machine or ATM
- Internet banking
- Telephone banking
- Mobile banking
- Electronic funds transfer at point of sale

1.2 Aim of the study

Despite the importance of electronic banking adoption for the banking industry of countries we can see the large difference between adoption of these technologies by developed and developing countries because of their cultural differences. In the developed countries there is much more attention to the electronic banking. Moreover the developed countries seem to adopt internet banking easier and faster compared to the developing countries.

However, as we know Cyprus is a developing country and the older generations don’t concentrate on electronic banking too much. But the new generation shows much more attention to these information technology services offered by banks. These differences have become a cause of a conflict between banking industry and ways of distributing the information to their clients.

This thesis will investigate all aspects that somehow will encourage customers' compliance to accept the newly offered distribution channels and to understand whether distributing information to customers via electronic technology and telecommunication tools affect the banking industry in order to gain more clients.

1.3 Objectives of study

The purpose of this thesis is to assess the current electronic banking situation in North Cyprus. It also focuses on ease of using these telecommunication devices as a client of a bank in the banking industry of North Cyprus. As it is known, the ease of use as a factor is not the only reason for adopting to new technology but at the same time the customers has to find these electronic technologies useful. Other objectives of this thesis are to establish a viewpoint about the security of these electronically distributed services for the customers.

1.4 Outline of study

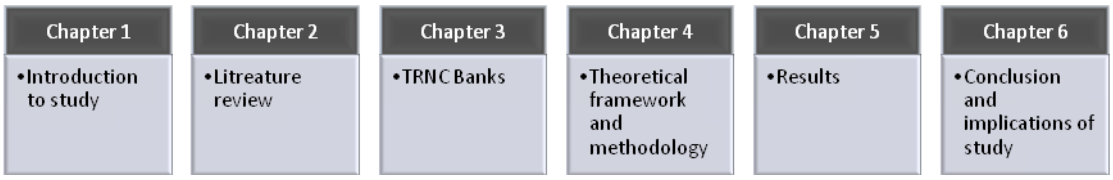

Figure 1: Outline of the study

The first chapter represents the introduction to electronic banking and telecommunication services. In this chapter the objectives and aim of the study will be discussed. Quick review of methodology of the study and hypothesis questions of this thesis will take place on this chapter. The second chapter will present the literature review of the thesis; it will illustrate the components and also the mechanism of the electronic banking system. In the third chapter I will describe the

North Cyprus banking industry and clarify the status of each bank operating in North Cyprus. The forth chapter presents the research methodology used for the research work and then it will show the data analysis as well as the discussion of the sample of the study and methods for the data collections. Fifth chapter will present the data analysis and findings of this study related to those analyzed data. The last chapter will discuss the thesis in general and get the conclusion of the major findings of the whole study. In chapter six there will be some recommendations and policy implications for the banking industry of North Cyprus.

1.5 Background of study

The internet technology (IT) had a rapid grow during past decades that these days it became one of the most important factor in human lives. IT services are providing human beings a better and easier way to live and to communicate with each other at any place and any time with the minimum cost. These technologies have also become an important factor for businesses and institutions to communicate with their customers and clients easier so this internet technology is used as the main competitive weapon in the financial market. On the other hand, electronic technologies have affected human being's lives in order to accomplish their tasks faster. Therefore, it is understandable that banking industry has relied on electronic services and devices to mainstream channel of communication since internet technology we as introduced in 1969 (Nehmzow, 1997).

In developed countries and also developing countries each bank always has played an important role related to adopting electronic technologies to compete with their competitors and to offer better quality services to their customers. Indeed banks truly

want to perform better to satisfy their clients and get new customers loyalty to build a long-run relationship (Kimball & Gregor, 1995; Thornton & White, 2001) rather than just increasing market share protection and gaining much more profit.

Despite the fact that using internet services offered by banks are assuming to increase banks' power through offering better services to their clients and perform better in the banking industry, on the other hand adopting these internet technologies has increased the distance between banks and the customers where the physical contact and interaction has been rarely perceived (Eriksson & Nilsson, 2007).

In this study we will get the idea of how banks' clients respond to electronic and internet banking and also focus on other aspects that affect acceptance of these electrically channels by the banks' clients in North Cyprus.

1.6 Methodology of study

The study was applied to clients of the banks operating in North Cyprus. The sample was selected randomly from clients located either in Famagusta, Kyrenia, Lapta, Lefke and Lefkosa; which are the five major cities of the TRNC. For the collection of the first hand data 320 questionnaire were designed and distributed to the people.

To reduce the possibility of inaccuracies during the study, banks' websites were visited and banks' offices were also interviewed.

1.7 Research questions and Hypotheses

This study is mainly questioned for measuring factors that affect bank's clients to use electronic banking in TRNC. Therefore, three main theories of TRA, TAM &TPB

with the additional factors related to risks and benefits were used. Hence, the following eighteen hypotheses were proposed and tested in banking industry of North Cyprus:

H1: Perceived usefulness is expected to influence positively on the acceptance to use electronic banking.

H2: The easy usage of electronic banking has a positive affect on the electronic banking usage.

H3: The intention of customers to use electronic banking is also based on their attitudes.

H4: Intention to use electronic banking is positively shaped with subjectrive norms as well.

H5: The behavioral control of customers to use e-banking is another constructive effect.

H6: On the other hand, performance risk adversely stimulates the attitude toward usage of electronic banking.

H7: Risk of performance additionally affects the use of e- banking.

H8 & 9: Financial risk is another factor which negatively affects the use of electronic banking as well as the intention to use these services by customers.

H10 & 11: The use of electronic banking is at the same time badly affected by time and social risks.

H12: Moreover, social risk and subjective norm are negatively correlated with one another.

H13 & 14: Intentions and attitudes of customers to use e-banking are again negatively influenced by security and privacy risks.

H15 & 16: On the contrary, intentions and attitudes to use e-banking increases amongst customers with the perception of benefits of online banking.

H17 & 18: Perception of electronic or online banking being easy to use and beneficial makes a direct positive impact on its use.

Chapter 2

LITERATURE REVIEW

2.1 Electronic banking

Electronic banking or banking via electronic devices (E-banking) can be described as a bank that is using electrical and electronically technologies to distribute and share information through broad electronic channels; most of the people mistakenly think that electronic banking is just about internet, but internet is just one of the vehicle that is used by banks to do their transactions but it is not the only one. E-banking regards to using an electronic devices and machines by banks to communicate with their clients without their physical presentation in the banks' branches; so, the introduction of the electronic banking has allowed banks to use the new generation of banking services and activities without investing money in expensive physical branches. Burr (1996) describes the electronic banking as the connection between banks and their customers via electronic devices to plan, manage and administer their financial transactions. These media devices used by banks are computers, televisions, telephones or mobile phones (Danniel, 1999).

Gopalakrishnan et al. (2003) mentioned that in the electronic banking area there is no need for physical present of neither clients or banks for transact the services or even goods; in this case the main focus is on electronic machines and distribution systems to handle and carry the specific task through customers; therefore,

customers who like to use electronic devices or have a bit knowledge about that, can easily use these electronic banking distribution channels to access to their bank's account .

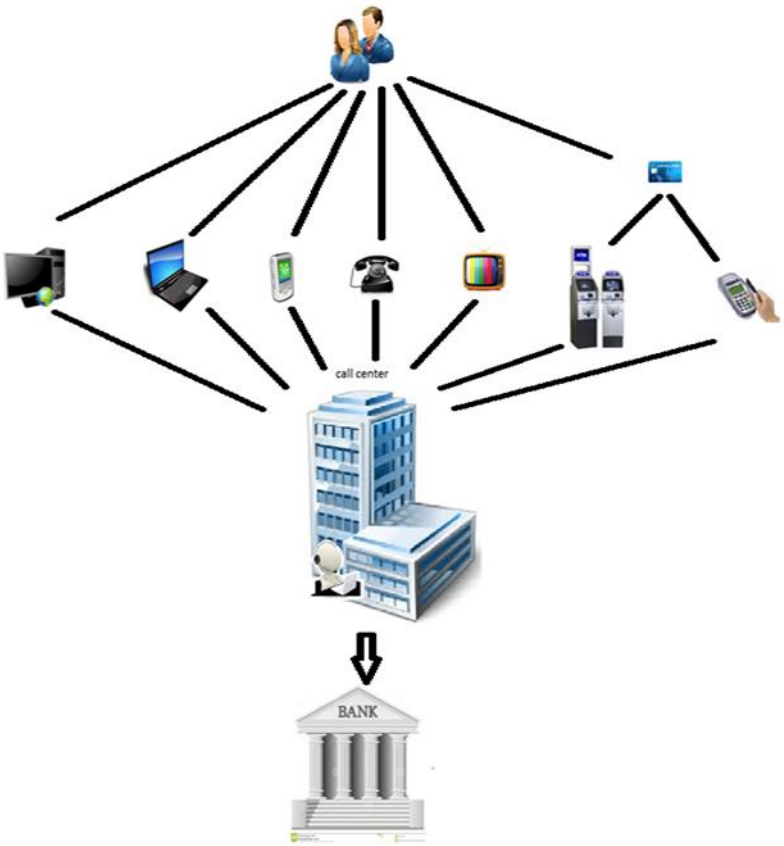

Figure 2: Banking distribution channels

Electronic banking and traditional banking are working in the same way to offer the services and provide the products to the consumers of a bank; the only difference between traditional banking systems and the electronic devices is that clients will access their account for making payments, reconcile their statements and get their account information by using the electronic devices such as computer, cell phone and etc. rather than paper works.

2.1.1 Internet banking

The electronic banking is related to the banks that are using electronic devices such as computer, telephone or mobile phones to communicate with their clients; these electronic devices mostly work with the help of internet connection. . In addition, all new kinds of businesses such as software, internet and telephone companies became interested to provide the electronic banking services to their clients. As the study by Hagel and Eisenmann, (1994) states, providing electronic banking services by such businesses have been entered them into the banking industry. Another study by Hagel and Lansing, (1994) agrees on this opinion.

Internet banking is the cheapest, the most popular and the most important delivery channel which is adopted by the banking industry for banking services and products. Thus, research by Sathye (1999) & Pikkarainen (2004) proves that internet banking is the cheapest delivery system for delivering all banking services. However, it requires users to have a minimum level of internet skills, so customers who like to use computers and technology feel comfortable to get services online from internet banking; therefore most banks allow their customers to contact with them via World Wide Web (WWW) at any time and in any place that Web access is available. However, we cannot always say that a bank provides internet banking when it has the website; banks should provide a portal to their clients through a transactional website. The customers mostly use the bank's transactional website to check their account balances and review their bank's statements (Weir et al. 2006) as well as bill payment and wire transfer of funds.

2.1.2 Personal computer banking

The study by Karjaluoto et al. (2002) reveals personal computer contact to the internet is the greatest electronic distribution channels in the banking sector.

The personal computer banking (PC banking) gives clients the chance to do their banking transactions via their personal computers 24 hours and seven days a week. This service gives clients the opportunity to handle most of their banking account transactions if they have been installed the assigned software distributed by the bank to their personal computer. PC banking required customers to have a PC, a dial-up modem and skills related to PC so they can access to a bank server through the phone line. The connection of PC banking is expected to be in the home. However, this connection may be in an office, restaurants or even in the shopping malls; so in general the clients are able to use them at any time and in any place that Web access and their personal computer is available. ; This means that the clients are not be able to connect to their bank if they don't have access to their personal computers that is connected to bank directly with special modem.

2.1.3 Mobile banking

Mobile banking is involved with the access to the activities that are in the range of banking products by using a smart cellphone. This source of electronic banking system allows bank's client to easily review their account information, money transfer, bill payment and all other products related to saving or credits (Birch, 1999). The mobile banking allows the customers to access to their personal account with short message service (SMS), multimedia message service (MMS) and/or 3rd generation mobile network connection.

2.1.3.1 Short message services

All available mobile phones in the market support Short Message Service. This service is phone to phone text message with the maximum length of 160 characters. Short message service (SMS) technology allows its users to exchange messages with other users by sending and receiving text messages to each other's mobile phones.

2.1.3.2 Multimedia message services

Multimedia message service also is another messaging service that allows its users to exchange messages with the other mobile subscribers; MMS is known as upgraded form of SMS; which it allows the users to send and receive text message as well as additional types of messages such as pictures, videos, audio or the combination of all. This texting service that is supported by the majority of modern cell phones, it also allows the users to send messages from the mobile phone to e-mail.

2.1.3.3 Third generation mobile network connection

A third generation mobile network connection (3G) is the name of the third generation wireless of mobile telecommunication technology. The 3G wireless network allows its users to have voice telephony, internet access for mobile phone, video calls, mobile TV and etc.

2.1.4 Telephone banking

Telephone banking is also one of electronic banking sources which the clients can get the information related to their bank accounts with a single call virtually without any time or place boundaries over their telephone. Telephone banking is one of the most convenient, fastest and easiest distribution channels for accessing to bank to get account balance information, paying bills electronically or transfer the funds between

a client's account at any time and any location, through this service customers are not able to make cash withdrawals or cash deposits.

In telephone banking system two types of services are operating; first one is automated service which used to handle the normal and simple tasks but the second one is operator-attended service which used to take more complicated situations where the automated service is not able to operate. For security reason of using the telephone banking system the clients are required to have a personal identification and a verbal password given by the bank.

2.1.5 Television banking

Television based or simply TV-based banking is another banking delivery platform of the electronic banking where the customers with the use of a satellite or cable can access to their banks and get their account information on their television screens (Daniel, 1999).

Wah (1999) suggests that the computer screen is not the only place that we can see electronic banking services.

2.1.6 Automated teller machines

Among the electronic banking innovations Automated Teller Machines (ATM) is one of distribution channel that can be considered as one of the crucial components of E-banking.

ATM machines are required a card and four digit specific personal identification number (PIN) or a password to allow users to withdraw money and access an account. On the other hand ATMs are known as self-service terminals that allow the

customers do their transactions faster and more convenient (Rasiah,2010) rather than wasting their time to wait in the bank or even wait till the banks get open next day.

ATM cardholders can easily get the financial services such as cash withdrawals, bill payment, funds transfer or non-financial services such as checking their account and even change their PIN code from these Automated Teller Machines. Most banks charge a fee for the customers who wish to use the ATM's services while they don't have an account with them; this fee can be seen on the Automated Teller Machines' screen before the transactions are completed.

2.1.7 Electronic funds transfer at point of sale

The point of sale terminals are small computerized machines that allows the customers to easily pay for their purchases electronically by the use of a card and a PIN number.

EFTPOS machines are known as a very fast, easy, secure and convenient electronic banking distribution channels where they provide 24 hour-service, seven days a week that work even after banking hours. The cardholders can directly go to stores and purchase what they need without carrying cheques and cash in their wallet.

2.2 Benefits of electronic banking

In recent years, banks have recognized the importance of electronic banking; because with the use of these e-banking channels they can differentiate themselves from their competitors and to attract more new customers as well as to retain the existing ones. This is conforming to the studies by Kimball and Gregor (1995) and Thornton and White (2001). Using distribution systems via electronic channels lead banks to

reduce costs and increase revenue (Simpson, 2002). However, cost reduction for the banks is only reliable when consumer adoption increases (Bradley and Stewart, 2003).

2.2.1 Benefits for banks

Internet banking as a delivery channel has provided many benefits to the banks, this benefits include cost saving, reducing lead time, increasing business opportunities, efficiency, reaching new customers as well as improving the banks' reputation and bring customers satisfaction (Brodgon, 1999; Jayawardhena & Foley , 2000; Seth et al. , 2004; Turban et al. , 2008) .

Dawes & Rowley (1998) state that internet banking as the main component of electronic banking has enhanced banks' services in the banking industry. The usage of electronic banking by banks has improved their market image and clients perceive them as leader in accepting the new technological services. Sheshunoff (2000) in his study states that there is a need to build dominant barriers for the current customers and he also adds that this is the most important reason for banks to adopt internet banking. In this case if the banks' clients accept and adapt to internet banking the chance of replacing their bank with another bank is expressively reduced. As Tan and Teo, (2000) state in their study, this also means that electronic banking services are known as the essential factor for the long-lasting survival of banking in the electronic banking world.

Furthermore offering internet banking services as a browser-based delivery channel has an important advantage such as fewer physical branches (Cheng et al. 2006) that decreases the number of stuff and therefore it led the bank to have much less

operating costs (Frost, 2011) and so increase cost-effectiveness (Centeno, 2004). According to Robinson (2000) the cost of doing transactions electronically are much less compare to the cost of these transaction done at banks' branches. Moreover, reducing external costs allow banking industry to save money and help the banks to become more profitable and that's the reason why internet banking known as the most profitable distribution channels.

2.1.2 Benefits for customers

Electronic banking is known as the extremely beneficial channel to banks clients because of costs saving, and savings in terms of space and time. (Turban et al. 2000). Furthermore, electronic banking has a rapid and fast reply to complaints and to improvement of their services; this is known as another benefit of electronic banking.

The greatest benefit of electronic banking is related to its cost, because it is cheap or even in some cases it is free to clients who want to do their transactions electronically. A study by Hwang et al. (2003) confirms that electronic banking channels provide all kind of services to the banks' clients in a faster and cheaper way. Therefore, the number of electronic banking websites all around the world has increase to more that thousands (Gurau, 2000).

Abdul Hamid et al. (2007) approve that customers can accessing their accounts directly without hassle of physically visiting banks. Furthermore, banks provide comfort to their clients (Gerrard and Cunningham, 2003), their customers can easily access to their accounts 24/7 days a week (Bursetin et al., 2008; Maenpaa et al., 2008), whereas in the traditional banking, people have to accept couple of days of delay in funds transfer, but with the help of electronic banking this has come down to

a real time. Therefore in the electronic banking industry there is no need for the customers to wait till the next day when the banks get open, they easily can use electronic banking devices to assess their account and do their banking transactions. In this situation, the electronic banking saves time (Gerrard and Cunningham, 2003), as well as money, it also provides convenience and accessibility that leads to increasing the customers' satisfaction (Wang et al., 2003).

Additionally, in some banks' branches, people who have the banks' card can easily get the line number which is different from the numbers that are taken normally and without any card; these line numbers give the customers the chance of not waiting in a bank branch as long as the people without card wait.

Chapter 3

TRNC BANKS

3.1 TRNC

Cyprus island with the area size of 9,251 square km that is the third largest island located in the Mediterranean Sea; the total population of Cyprus was last reported 1,116,564 in 2011 according to World Bank after the civil war in 1974 the island divided to two parts of North and South with a border that is called “the green line” and is controlled by the United Nations (UN); the South side of the island with a size of 5,895 square km is holding more than 878,000 people and the North side, with total area of 3,355 square km has a population of approximately 294,396 (2012 census).

The south part of the island or the Greek speaking side has been continued as the internationally recognized state after the division of the island; with the respect of EU politics the south state is known as more economically developed country (MEDC) where the Turkish Republic of North Cyprus (TRNC) is not recognized by the rest of the world except Turkey. As we know Turkey is a developed country that has a currency of Turkish Lira (TL); TRNC also has the same currency.

As mentioned before TRNC is only recognized by Turkey so managing and controlling the economy of TRNC has been done by Turkey; Less-economically

developing country of North Cyprus that is heavily affected by the monitory situation in Turkey where Gunsel (2007) states that the attack on Turkish currency in 1994 and 2001 heavily affected the monitory policies in banking sector of TRNC, this dependency was not just related to currency fluctuations but also on the offered services by the Turkish banks. When Turkish banks started to come up with newly distribution channels, Cypriot banks also started to expand their information distribution criteria in the island.

3.2 TRNC banks

In last decades, developing countries have been faced to enormous growth as the economy liberalized in early 1980s. Thus, TRNC was also affected by the liberalization in those years. The new liberalization policies in 1990s have been influenced North Cyprus' economy, where the number of TRNC's lawful banks has been increased from 13 to 29 during 1997 to 1980s. Increase in total number of banks in TRNC made the banking industry of this island more competitive (Bektas, 2006). Table below shows the changes of banks number during last 6 years:

Table 1: Changes of banks of TRNC

	2008	**2009**	**2010**	**2011**	**2012 March**	**2012 June**	**2013**
Government banks	2	2	4	3	3	1	1
private banks	15	15	12	12	12	13	14
foreign banks	7	7	7	7	7	7	7
Total	24	24	23	22	22	22	22

Source: Central bank of TRNC

In second quarter of 2013 number of bank branches in TRNC has been increased to 218; this number was last reported as 209 in the previous quarter. As TRNC central bank announced, 66.01 % of this changes was from private sector banks, 21.56 percent was belong to foreign banks and the rest (17.43%) was due to changes in public banks.

As central bank of TRNC states from March 2013 to June 2013 number of banks personnel increased from 2753 to 2766; that 1677 personnel were working in private banks,564 personnel in government banks and the rest 525 were personnel of foreign banks. The central bank of TRNC announce that total number of personnel performing in banking industry increased by 176 and became 2766 during one year from March 2012.

Table below shows the lawful licensed banks operating in TRNC with their transactional websites:

Table 2: Lawful banks of TRNC

Banks	Websites
Kibris Vakiflar bank Ltd.	www.vakiflarbankasi.com
Kibris Iktisat bank Ltd.	www.iktisatbank.com
Kibris Turk Kooperatif Merkez bank	www.Koopbank.com
Limasol Turk Kooperatif bank Ltd.	www.limasolbank.com
Credit West bank Ltd.	www.credirwestbank.com
Asbank Ltd.	www.asbank.com.tr
Turk bank Ltd.	www.turkishbank.net
Universal bank Ltd.	www.universalbank.com.tr
Akfinans bank Ltd.	www.akfinansbank.com
Near East bank Ltd.	www.yakindogubank.com
Nova bank Ltd.	www.novabank.com.tr
Seker bank Ltd.	www.sekerbankkibris.com
Viya bank Ltd.	www.viyabank.com
kibris Kapital bank Ltd.	www.capitalbank.com.tr
Kibris Faisal Islam bank Ltd.	www.faisalislambank.com
HSBC bank A.S	www.hsbs.com.tr
Turkiye Garanti bank A.S	www.garanti.com.tr
Turkiye Halk bank A.S	www.halkbank.com.tr
Turkiye IS bank A.S	www.isbank.com.tr
Turkiye Ziraat Bank A.S	www.ziraatbankasi.com.tr
ING bank A.S	www.ingbank.com.tr
Turkiye Ekonomi bank A.S	www.teb.com.tr

Source: Central bank of TRNC

3.3 Internet banking in TRNC

Even though, electronic banking is common in most of the developed countries and for many developing countries, such as TRNC that is still building up its internet technology infrastructure; the e-banking is still less developed.

Adoption of electronic banking distribution channels as the newest delivery service and a communication tool have been increasing rapidly by local banks to differentiate their products and services among their competitors. These competitors mostly were foreign banks that were operating in TRNC and have been started to offer electronic banking years ago. This was a big disadvantage for the local banks which were offering just the traditional banking services to their customers; so they could easily lose their clients due to lack of not offering new technologies. Yet, majority of local banks were assuming that low percentage of their clients would use e-banking services. However, local banks felt that this assumption might or might not be true, but still they didn't want to create a negative image about their quality and diversity of their financial services through their customers. Whether the customers would accept these electronic banking services or not, the banks were pushed to adopt the electronic banking services at that time. Thus, domestic banks start to adopt the earliest form of electronic and technological devices such as ATMs due to strong competition in the banking sector. However TRNC banks where not an innovated banks but still they were so good for adopting these electronically technologies ideas transformed from other countries.

In 2004, North Cyprus with 85,000 potential internet users and total twenty three banks, the potential market for the internet banking was tiny (Abeido, 2004). However, the diffusion of internet banking services increased remarkably from 8.7% in 2004 to 30% of total banks in 2006. However, none of the domestic banks were offering electronic banking services in first quarter of 2004. Furthermore, after two years, local banks started to view the internet banking advantages from other sight.

Table 3: List of establishment of TRNC banks transactional website

BANK	Informational website	Transactional website
Iktisat bank	2003	2004
Vakiflar bank	1997	2006
Turk bank	2004	2006
As bank	2003	2007
Near East bank	2007	2007
Credit West bank	2004	2008
Universal bank	2008	2008
Akfinans bank	2002	2009
Limasol Turk Kooperative bank	2001	2010
Kooperative bank	2003	2010
Faisal Islam bank	2003	2013
Capital bank	2013	2014
Nova bank	2012	NTA
Viya bank	2009	NTA
Seker bank	2002	NONE

* (NTA) = Not Totally Active

Kibris Iktisat bank was the first domestic bank that introduced electronic banking and launched its website in 2003, but still it was the first local bank that introduces its electronic banking services in 2004 and the first local bank of TRNC that offered credit cards to its customers. Table 3 shows the establishment informational website as well as transactional website for each local bank of TRNC.

Chapter 4

THEORETICAL FRAMEWORK AND METHODOLOGY

4.1 Theoretical framework

The theoretical frameworks constructed in this thesis deals with seven core principles, (1) perceived usefulness (PU), (2) perceived ease of use (PEOU), (3) attitude toward behavior (ATB), (4) subjective norms (SN), (5) perceived behavioral control (PBC), (6) Perceived benefit (PB) and (7) perceived risk (PR), where it divides to five parts of: (i) performance risk (PerR), (ii) financial risk (FR), (iii) time risk (TR), (iv) social risk (SoR) and (v) security risk (SeR). These principles are the outcome of three model of TAM, TRA, TPB plus PR and PB that will be discussed in follow:

4.1.1 Technology Acceptance Model

Adoption means choosing, accepting and continuously using of a product, service or even an idea. Base on the study by Davis (1989), people adopt an application base on two factors, firstly because of the functions it performs and secondly because of the ease or difficulty associated with making the systems that performs these functions. Technology Acceptance Model (TAM) is known as a multi-attribute model that was presented by Davis (1989) and Davis et. Al. (1989). This model was established to clarify and forecast user's intention to embrace a technology based on their perception. A study by Jeyaraj et al. (2006) conducted that TAM is used as one of the

most important and widely used technological tool. However, in many researches stated that TAM itself is not sufficient to explain user's decision for adoption of technology. Therefore, many researchers such as Lederer et al., (2000) and Liaw, (2002) use TAM as a basis model and combine with additional variables. TAM itself has concerns about two variables, perceived usefulness and perceived ease of use.

4.1.1.1 Perceived usefulness

Perceived usefulness (PU) is mentioned as the likelihood of easiness and improvement the ways to finish a task when the technology takes place in an individual's life (Laforet and Li, 2005 and Eriksson et al., 2005).

Previous studies on adopting the electronic banking have been showed that PU and user's ITU electronic banking have a positive correlation. For example a study done by Jeyaraj et al. (2006) from 1992-2003 found that PU in adopting the technology was found to be significant on 26 of the studies out of 29. In the study by Hernandez and Mazzon (2007) it has been shown that PU may encourage non-adopters to adopt internet banking.

Moreover, Celik (2008) used a survey among Turkish users to analyze the importance of PU on individual's intention to use electronic technologies and his findings were proven that PU has an important impact on Turkish user's acceptance of electronic banking. Similar to the previews studies, Gounaris and Koritos (2008) have also found that PU is one of the significant factors that influence an individual's ITU an electronic banking. Furthermore, study by Chen et al. (2003) states that PU has a direct and positive influence on the usage of intention of electronic banking.

A design of a bank's website is expected to be an important factor that impacts a customer's acceptance and usage of internet and banks should take design preferences into a consideration. However, it is stated that even if the available web is designed well and it is good-looking and easy to use electronic bank; clients may not intent to use it unless they perceive it as useful (Eriksson et al. 2004). In the same study they have shown a significant factor PU on acceptance of internet banking in Estonia. Accordingly, the first hypothesis is:

Hypotheses 1: Perceived usefulness is expected to influence individual's opinion to use e-banking in a positive way.

4.1.1.2 Perceived ease of use

Perceived ease of use is defined as the extension of belief in a person about using a specific system without spending much effort. This factor has been defined by studies of by Davis (1989) and Taylor and Todd (1995).

Perceived ease of use has an indirect effect on behavioral intention and opinion of an individual (Agarwal and Karahanna, 2000). This statement has been agreed in the study by Venkatesh and Davis,(2000). This is in line with finding of Szajna (1996) who states that perceived ease of use affects intention to use, but this impact is indirectly and through perceived usefulness. It is therefore hypothesized that:

Hypotheses 2: Perceived usefulness has been positively affected by ease of use perception.

4.1.2 Theory of Reasoned Action

TRA or the theory of reasoned action is used to explain and describe the human behaviors (Venkatesh, et al., 2003). This theory is developed by Fishbein and Ajzen

(1975), where it states that the behavioral intention can be explained by two main factors, which the first one is a personal factor known as attitude toward behavior (ATB) and second one is known as subjective norms (SN) or simply the person's perception of social pressures.

Simply attitude is determines by the person's opinions about their concerns of performing the behavior that is weighted by his/her evaluation on those consequences. Subjective norms are known as the observation that significant others who really matters in terms of thinking that they should or should not achieve the behavior. The significant others for instance could be close friends, colleagues and family members. Theory of reasoned action has two major variables known as Attitude toward behavior and subjective norms.

4.1.2.1 Attitude toward behavior

Attitude toward behavior is about a person's significant beliefs that lead to perform a behavior to the certain consequence and also it evaluate those outcomes (Ajzen and Fishbein,1980). For instance Fisher (2000), O'Cass and Fenech (2003) point out that attitude toward behavior of each individual has a significant impact on their adoption of computer technology. Thus, it is hypothesized that:

Hypotheses3: Attitude toward behavior positively influence on intention to use electronic banking.

4.1.2.2 Subjective norm

Subjective norm is related to an individual's insight and opinion of performing in a task. Furthermore, Venkatesh and Davis (2000) have added the subjective norm to the model of TAM. The combination of original TAM and SN is called as TAM2.

Researches by Taylor and Todd (1995) and Vijayasarathy (2000) show that there is a positive significant impact of SN on intention to use electronic technologies. However, studies by Tan and Teo (2000) argue that subjective norm doesn't influence internet banking, the same results had been found in the study by and Shih and Fang (2004). Therefore, it is hypothesized as:

Hypotheses 4: SN positively influences the ITU electronic banking.

4.1.3 Theory of Planned Behavior

The theory of planned behavior (TPB) was suggested by Ajzen (1985). This theory is an additional theory of motive action. (Fishbein and Ajzen, 1975; Ajzen, 1991). The TPB recommended the influence which is related to attitudes. As the theory of reasoned action is not able to perform all factors related to intention to use electronic banking individually, Ajzen (1985) extended this theory by adding another construct, a third anticipatory to this theory known as perceived behavioral control. PBC influences the intention of the behavior and real behavior; PBC also reflects the amount of people's feeling that performance or non-performance of the behavior is under his or her willing control.

4.1.3.1 Perceived behavioral control

Perceived behavioral control is defined as people's perceptions of their capability to perform a certain behavior, it also has a positive effect on a behavior as well as an indirect effect on behavior through the intention. A study by Bandura (1977) shows the indirect effect of PBC on the actual behavior. This study makes evident that confidence has a great effect on the behavior of the individual. This is due to their ability of performing the behavior. Additionally, study from Tan and Teo (2000) proved that the role of the PBC in applying internet banking is an inevitable

influence and it is much higher than social influence. Hence the following hypothesis is proposed:

Hypotheses 5: The behavioral control of clients to use electronic banking is positive effect.

4.1.4 Perceived risk

Many studies suggest that banks which are offering electronic banking services should first prove to their clients that their electronic banking is secure. Even though electronic banking has many benefits for the bank's customers, they continue to resist the use of electronic banking services which is highly based on their doubts about security and certainty. (Jarvenpaa et al., 1999; Pavlou, 2001; Littler and Melanthiou, 2006; Kuisma et al., 2007).

Various studies has been examined the perceived risk theory to explain customers' intention to adopt the electronic banking since electronic banking was introduced in 1960s.Perceived risk (PR) has been defined as the kind of individual expected loss when pursuing a desired result (Peter and Ryan, 1976; Featherman and Pavalou, 2003). Those studies have been carried out to show customer's perception of the risk of adoption online banking. Sathye (1999) in his study found that security distresses and lack of awareness about certainty of E-banking have a negative impact on adoption of internet banking by Australian consumers. Although, the study by Li and Laforet (2005) confirms that perception of risks are the main barriers for acceptance of online banking. Furthermore, study by Liao et al. (1999) and further studies by Tan and Teo (2000), Yousafzai et al., (2003) and Fang, et al. (2007) have been taking risk factor in an account. However, in those studies PR has been used as a single

modeled construct which it fails to give definite answer about characteristics of PR and its impact on adopting the electronic banking. Following Jacoby and Kaplan (1972) divided PR into five categories in their research for clarification of which risk facets are more influential, those categories are:

4.1.4.1 Performance risk

Performance risk (PerR) is known as the potential loss due to failure of performing well and incorrect payment processes. Most of the time customers feel anxious that server's breakdown or its disconnection from the internet may happen and in such a situation customers may worry about unexpected data losses that may occur (Kuisma et al., 2007). So, the hypotheses are:

Hypotheses 6: Performance risk adversely stimulates the attitude toward usage of electronic banking.

Hypotheses 7: PerR effects the PU of using electronic banking and this affect is negative.

4.1.4.2 Financial risk

Financial services are correlated with the level of the risk being high. Financial risk is described as a possible financial loss appears in financial transactions. Many clients are afraid to lose their money while they are executing the dealings or transmitting the cash over the internet (Kuisma et al., 2007). Therefore, these hypotheses are proposed:

Hypotheses 8: Negative impact of FR on attitude toward usage of E-banking is expected to be significant.

Hypotheses 9: Furthermore, it is expected to find a negative effect of FR on PU in E-banking.

4.1.4.3 Time risk

Time risk is known as the wasted time that experienced due to the delays of executing of transactions, or even when they waste their time by making a bad purchasing decision. Furthermore, this risk may occur when clients see a confusing website and the pages cannot be downloaded due to its speed (Forsythe and Shi, 2003). They also point out that time risk is a significant factor of ATB. These results are also related with Steven et al. (1999) who is a crucial analyst of online buying performance and mentions time as a risk. Hence, it is hypothesized that:

Hypotheses 10: Time risk is another factor that affects the attitude toward usage of electronic banking in a negative way.

4.1.4.4 Social risk

Social risk is known as the possibility that electronic banking users may lose their status due to adopting the internet banking in one of their associated group. Several research projects related to retail purchasing have been stated the negative impact of social risk on customer's attitude.

Hypotheses 11: Attitude toward usage of E-banking is affected adversely by social risk .

Additionally, when the social risks related to adoption increase, customers would believe that their purchasing of products or services would approve less by a social groups, this statement was argued by Featherman and Fuller (2002). Therefore, the following hypothesis is proposed:

Hypotheses 12: Moreover, social risk and subjective norm are negatively correlated with one another.

4.1.4.5 Security risk

Security or privacy risk is described as a possible failure once fraud or hacking takes place. This loss or failure is related to stealing the individual's important information such as username and password or even their credit card details. A research by Poon (2008) shows that some bank's clients fear someone access to their bank accounts illegally. Several previous studies such as Furnell &Karweni (1999) and Bestavros (2000) have believed that building the trust of consumers over the security concern is a greatest challenge for electronic banking sector. It is therefore hypothesized that:

Hypotheses 13 &14: Safety in E-banking influences the client attitude toward and intention of using this service.

4.1.5 Perceived Benefit

Perceived benefit is known as any offer that a bank may give to its clients such as lower and faster transactions, accessibility, convenience, etc. Zheng et al. (2006) in their study show that perceived benefit has an positive influences on electronic banking adoption. Beattey et al. (2001) in their study indicated that perceived benefit also affects user's attitude toward adoption of electronic banking, therefore:

Hypotheses 15 & 16: On the contrary, intentions and attitudes to use e-banking increases amongst customers with the perception of benefits of online banking.

4.2 Conceptual model and further hypotheses

Banking industry is one of those businesses that need an accurate study on clients' need continuously not just to satisfy current customers but also to attract the new ones. Over the past decades various studies have been accomplished to clarifying the reasons to why customers choose their banks and also how they adopt the new offered services by their bank. Furthermore, according to Davis (1993), Hsu (2004)

and several other researches the broadly examination of TAM and TPB is executed for electronic service acceptance and information technology usage. However, study by Chen et al. (2007) have shown that TAM or TPB separately are not able to deliver larger clarifications or demonstration behavior forecasts, so the mix of these two models can perform better rather than using them individually (Bosnjak et al., 2006; Chen et al., 2007; Wu and Chen, 2005). Therefore, in this research the integration of four models has been executed to classify the features that affect consumer's intention to use the E-banking.

Hypotheses 17: There is a positive and significant relationship between PU and attitude toward usage of E-banking.

Additionally, a research by Wessels and Drennan (2010) points out that perception of easiness significantly affects the attitude toward behavior, where it indirectly affects intention to use of electronic banking.

Hypotheses 18: It is expected to find a positive relationship between PEOU and attitude toward using E-banking.

4.3 Research process

This part of research is continued with the model of research, population and sample of research, data collecting tools, data collection and statistical method and techniques used in data analysis.

4.3.1 Research model

In the research, descriptive scan model is used due to the aim of defining the thoughts and opinions related to the factors that affect users during the use of Electronic banking service . "Scan model is the screening arrangements carried out

on the population or samples due to the aim of reaching an overall judgment about the universe, which is composed by many components" (Karasar, 2011).

4.3.2 Population- sample

The population of research is formed by the individuals, who live in Turkish Republic of Northern Cyprus and who use internet banking. Because of the difficulty of reaching whole population due to time, cost and control; 320 individuals, who are selected by simple random sampling method, are interviewed and the results are from opinions and thoughts of 263individuals', who use internet banking.

4.3.3 Collecting data

In this research, personal information form developed by the researcher as a scale and a scale developed by Ming-Chi Lee (2009) for the factors affected the e-banking usage is applied. More information about data collection tools is introduced below.

4.3.3.1 Personal information form

Personal information form, which is developed by the researcher, includes the demographic characteristics (gender, age, etc.) of the participants, questions about the computer and internet access and also the status of using electronic banking and 7 questions about the bank working with. Table 4 shows the structure of questionnaire and the chosen questions' origins.

Table 4: Questionnaire Design

Statements	References
Perceived Usefulness 1. I think that using electronic banking would enable me to accomplish my tasks more quickly. 2. I think that using the electronic banking would make it easier for me to carry out my tasks. 3. I think the electronic banking is useful. 4. Overall, I think that using the electronic banking is advantageous.	Cheng et al. (2006)
Perceived Ease of Use 1. I think that learning to use electronic banking would be easy. 2. I think that interaction with electronic banking does not require a lot of mental effort. 3. I think that it is easy to use electronic banking to accomplish my banking tasks.	Cheng et al. (2006)
Perceived Benefit 1. I think that using electronic banking can save my time in performing banking transactions. 2. I think that using electronic banking can save my time in performing banking transactions. 3. I think that using electronic banking can save the transaction handling fees in performing banking transaction.	Yiu et al. (2007)
Perceived Behavioral Control 1. I think that I would be able to use the electronic banking well for financial transactions. 2. I think that using electronic banking would be entirely within my control. 3. I think that I have the resources, knowledge, and ability to use electronic banking.	Wu and Chen (2005)
Intention To Use 1. I would use the electronic banking for my banking needs. 2. Using the electronic banking for handling my banking transactions is something I would do. 3. I would see myself using the electronic banking for handling my banking transactions.	Cheng et al. (2006)
Attitude 1. I think that using electronic banking is a good idea. 2. I think that using electronic banking for financial transactions would be a wise idea. 3. I think that using electronic banking is pleasant.	Cheng et al. (2006)

4. In my opinion, it is desirable to use electronic banking.	
Subjective Norm 1. People who are important to me would think that I should use electronic banking. 2. People who influence me would think that I should use electronic banking. 3. People whose opinions are valued to me would prefer that I should use electronic banking.	Wu and Chen (2005)
Performance Risk 1. Online banking servers may not perform well because of slow download speeds, the servers' being down or because the website is undergoing maintenance. 2. 2. Electronic banking servers may not perform well and process payments incorrectly.	Featherman and Pavlou (2003)
Financial Risk 1. When transferring money with electronic banking, I am afraid that I will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money. 2. When transaction errors occur, I worry that I cannot get compensation from banks.	Featherman and Pavlou (2003)
Social Risk 1. I'm sure that if I decided to use electronic banking and something went wrong with electronic transactions, my family, friends and colleagues would think less of me. 2. When my bank account incurs fraud or the hacker invades, I will have potential loss of status in one's social group.	Featherman and Pavlou (2003)
Time Risk 1. Using electronic banking services would lead to a loss of convenience of me because I would have to waste a lot of time fixing payments errors. 2. It would take me lots of time to learn how to use electronic banking systems.	Featherman and Pavlou (2003)
Security Risk 1. I would not feel totally safe providing personal privacy information over the electronic banking. 2. I'm worried to use electronic banking because other people may be able to access my account. 3. I would not feel secure sending sensitive information across the electronic banking.	Featherman and Pavlou (2003)

4.3.3.2 Scale related to factors that affect the use of electronic banking

The scale developed by Ming-Chi Lee (2009) in order to evaluate the participants' attitude and behaviors related to electronic banking use is applied. The scale was developed based on the constructs of perceived usefulness, perceived ease of use, perceived benefit, attitude toward behavior, subjective norm, perceived behavioral control, performance risk, financial risk, time risk, social risk, security risk, and intention to use.

Reliability is known as the measure of internal uniformity and reliability of scale where it is the degree whether the items are homogeneous. On the other hand validity is concerned with the factor loading of data collection methods, whether the methods are really related to what they appear to be about. Factor analysis and internal consistency test is applied for validity-reliability study of the scale. According to analysis results presented above, factor loadings of the scale are sufficient as the ideal level of factor loading is 0.7 or higher and it is accepted that the scale is highly reliable since the croanbach alpha values exceed 0.70.

Table 5: Validity of Questionnaire

Construct/indicator	Item	Factor Loading	Croanbach Alfa
Perceived usefulness	Q1	0,78	0,96
	Q2	0,86	
	Q3	0,88	
	Q4	0,85	
Perceived ease of use	Q1	0,78	0,91
	Q2	0,86	
	Q3	0,79	
Perceived benefit	Q1	0,72	0,82
	Q2	0,80	
	Q3	0,78	
Perceived behavioral control	Q1	0,84	0,80
	Q2	0,74	
	Q3	0,75	
Intention to use	Q1	0,72	0,93
	Q2	0,79	
	Q3	0,81	
Attitude	Q1	0,85	0,94
	Q2	0,77	
	Q3	0,73	
	Q4	0,76	
Subjective norm	Q1	0,89	0,95
	Q2	0,92	
	Q3	0,91	
Performance risk	Q1	0,82	0,85
	Q2	0,73	
Financial risk	Q1	0,74	0,78
	Q2	0,73	
Social risk	Q1	0,82	0,87
	Q2	0,78	
Time risk	Q1	0,84	0,80
	Q2	0,77	
Security risk	Q1	0,79	0,96
	Q2	0,79	
	Q3	0,77	

4.3.3.3 Analysis of data

First of all, data obtained by the scale transfer to computer and after that decontamination error from collected data (editing) process is applied. During the editing process, the errors formed while transferring to the computer were corrected by finding the questionnaire with related questionnaire number and by entering the

answers, which were entered wrong, into computer again. After purification of error process, any missing value or any incorrect data was not found in ant data set.

Statistical Package for the Social Sciences (SPSS) 17.0 FOR Windows Evaluation version is used for the statistical analysis of data.

The frequency tables are used for the participants' demographic characteristics (gender, age, etc.) and information of internet and computer access and the information of e-banking use.

Kolmogrov-Smirnov (K-S) Test, which is one of the normality tests, is applied to examine whether the data set shows normal distribution or not in order to determine the hypotheses testing used in statistical analysis.

As a result of applied Kolmogrov-Sminov test, it is determined that the data taken from the adherence level of academic staff on the professional ethics scale show normal distribution and parametric hypotheses tests are used in the analysis. Student t-test, which is one of the parametric hypotheses tests, is used in the status of having two independent variables and to compare independent and dependent variable. Also, variance analysis (Anova) is used if there are more than two independent variables. Tukey test as advanced analysis test statistics is used when there is statistically significant difference between the dependent and independent variables as a result of variance analyses.

Pearson correlation test is used in order to determine the correlation between the aspects affecting the internet use. Recently, linear regression model is composed to see the related factors that affect participants' intention and attitude on electronic banking usage and the variables consisted in the model are determined.

Chapter 5

RESULTS

Table 6: Distribution of Participants' Demographic Characteristics

	Frequency	Percent
Gender		
Male	130	40,63
Female	190	59,38
Age Group		
25 and below	94	29,38
26 - 35 years	116	36,25
36 - 45 years	69	21,56
46 and above	41	12,81
Education Level		
Less than Diploma	19	5,94
Diploma	60	18,75
Bachelors'	152	47,50
Master	89	27,81
Computer Access at home		
Yes	303	94,69
No	17	5,31
Internet Access at home		
Yes	290	90,63
No	30	9,38
Usage of Internet Banking		
Yes	263	82,18
No	57	17,81
Total	**320**	**100,00**

In Table 6, the distribution of demographic characteristics of the participants in the scope of the research is given. In this table, it is seen that the 40, 63% of the individuals are male, and 59, 38% of them are female. 29,38% of the participants are

in the age range of 25 and below; 36,25% of them are in the age range of 26 and 35; 21,56% of them are in the age range of 36 and 45; and 12,81% of them are in the age range of 46 and above. About 75% of the participants have bachelor and graduate degree. The vast majority of the participants have computer and internet access at their home. When the rates of participants' use of electronic banking is examined, it is found out that 82,18% of them use electronic banking.

As the results show 85% of participants, who use electronic banking, work with private banks, 15% of them work with state banks.

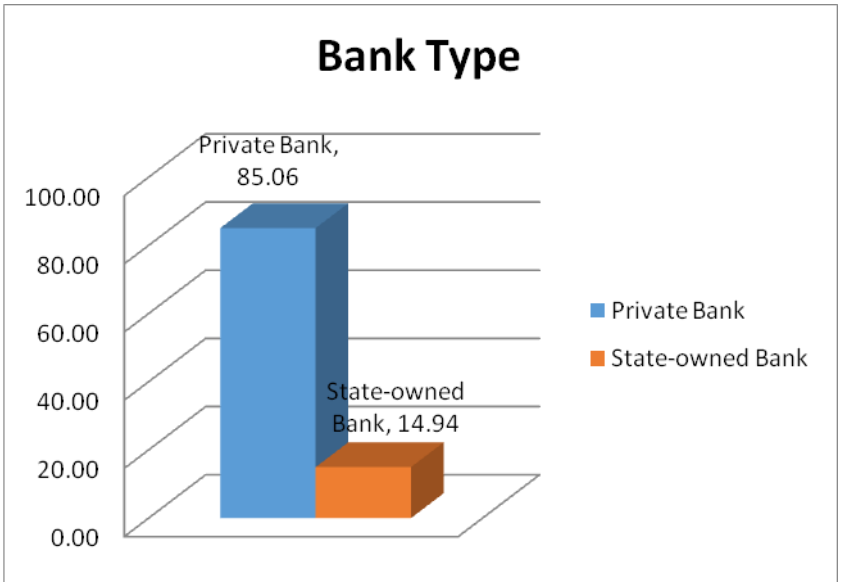

Figure 3: The distribution of bank type that participants, who use electronic banking, work with

The descriptive statistics related to opinions of participants about the internet banking are given in Table 7. When Table 7 is examined, it is established that the statements under the perceived usefulness dimension get 4,00±0,81 average points. In this case, this shows that the participants answer the statements under the

perceived usefulness dimension as “Agree” and internalize the statements under this subscale.

Table 7: Descriptive Statistics Related to Participant's Opinions on Electronic Banking (n=263)

	n	Mean	Std.Dev.	Min	Max
Perceived usefulness	263	4,00	0,81	1,00	5,00
Perceived ease of use	263	3,84	0,75	1,00	5,00
Perceived benefit	263	3,78	0,72	1,00	5,00
Perceived behavioral control	263	3,61	0,77	1,67	5,00
Intention to use	263	3,96	0,73	2,00	5,00
Attitude	263	4,02	0,72	2,00	5,00
Subjective norm	263	3,41	0,88	1,00	5,00
Performance risk	263	3,31	0,98	1,00	5,00
Financial risk	263	3,21	1,03	1,00	5,00
Social risk	263	2,88	1,08	1,00	5,00
Time risk	263	2,96	0,99	1,00	5,00
Security risk	263	3,49	1,11	1,00	5,00

It is stated that the participants have average points between 3,21 and 4,02 under the PEOU , PB, PBC, ITU, ATB, SN and SecR subscales. Moreover, it is understood that they answer the statements under these subscales as “Agree” in general and it is thought that they internalize these statements. Participants get 3,21±1,03 average points from the financial risk subscale; 2,96±0.99 average points from social risk subscale; 2,96±0,99 average points from time risk subscale. This stands for the users of electronic banking, who participate in the research, are indecisive regards to these subscales. Also, it is determined that the statements under these subscales are internalized by some of the participants and are not internalized by others.

Table 8: Comparison of Opinions Related to Electronic Banking According to Participants' Gender (n=263)

	Gender	n	$\bar{X}$	S	t	P
Perceived usefulness	Male	103	4,01	0,87	0.16	0,88
	Female	160	3.99	0,77		
Perceived ease of use	Male	103	3,87	0,72	0,59	0,55
	Female	160	3,81	0,77		
Perceived benefit	Male	103	3,86	0,68	1,40	0,16
	Female	160	3,73	0,74		
P. behavioral control	Male	103	3,66	0,79	0,79	0,43
	Female	160	3,58	0,75		
Intention to use	Male	103	4,03	0,75	1,25	0,21
	Female	160	3,92	0,72		
Attitude	Male	103	4,01	0,73	-0,14	0,89
	Female	160	4,03	0,71		
Subjective norm	Male	103	3,41	0,87	-0,08	0,94
	Female	160	3,42	0,89		
Performance risk	Male	103	3,37	0,97	0,76	0,45
	Female	160	3,28	0,98		
Financial risk	Male	103	3,22	0,97	0,15	0,88
	Female	160	3,20	1,08		
Social risk	Male	103	2,99	1,11	1,28	0,20
	Female	160	2,82	1,05		
Time risk	Male	103	3,06	0,97	1,33	0,19
	Female	160	2,90	1,00		
Security risk	Male	103	3,53	1,13	0,47	0,64
	Female	160	3,47	1,09		

When Table 8 is analyzed, it is stated that the difference between the opinions of participants related to the usage of electronic banking according to gender is not statistically significant (**p>0,05**). There is no difference between accepting and using

electronic banking by males and females; therefore, gender doesn't have an impact on usage of electronic banking.

Table 9: Comparison of Participants' Opinions about the Electronic Banking by Their Age Groups (n=263)

	Age groups	n	$\bar{X}$	s	Min	Max	F	P
Perceived usefulness	25 and below	75	4,02	0,82	1,25	5,00	0,42	0,74
	26 - 35 years	104	4,04	0,83	1,00	5,00		
	36 - 45 years	57	3,86	0,84	2,00	5,00		
	46 and above	27	4,10	0,62	2,50	5,00		
Perceived ease of use	25 and below	75	3,98	0,74	2,00	5,00	1,29	0,28
	26 - 35 years	104	3,82	0,75	1,00	5,00		
	36 - 45 years	57	3,70	0,77	2,00	5,00		
	46 and above	27	3,79	0,69	2,00	5,00		
Perceived benefit	25 and below	75	3,80	0,69	1,67	5,00	1,47	0,22
	26 - 35 years	104	3,70	0,73	1,00	5,00		
	36 - 45 years	57	3,81	0,76	2,00	5,00		
	46 and above	27	4,00	0,64	2,00	5,00		
Perceived behavioral control	25 and below	75	3,68	0,69	2,00	5,00	0,45	0,72
	26 - 35 years	104	3,61	0,80	1,67	5,00		
	36 - 45 years	57	3,50	0,81	1,67	5,00		
	46 and above	27	3,68	0,76	1,67	5,00		
Intention to use	25 and below	75	3,91	0,80	2,00	5,00	0,42	0,74
	26 - 35 years	104	3,99	0,73	2,00	5,00		
	36 - 45 years	57	3,92	0,68	2,33	5,00		
	46 and above	27	4,09	0,68	2,00	5,00		
Attitude	25 and below	75	4,03	0,75	2,00	5,00	0,67	0,57
	26 - 35 years	104	4,04	0,72	2,00	5,00		
	36 - 45 years	57	3,90	0,72	2,50	5,00		
	46 and above	27	4,19	0,55	3,00	5,00		
Subjective norm	25 and below	75	3,41	1,01	1,00	5,00	1,03	0,38
	26 - 35 years	104	3,36	0,86	1,00	5,00		
	36 - 45 years	57	3,39	0,80	1,67	5,00		
	46 and above	27	3,69	0,70	3,00	5,00		
Performance risk	25 and below	75	3,39	0,92	1,00	5,00	2,05	0,11
	26 - 35 years	104	3,15	0,98	1,00	5,00		
	36 - 45 years	57	3,51	0,96	1,00	5,00		
	46 and above	27	3,30	1,09	1,50	5,00		
Financial risk	25 and below	75	3,39	1,05	1,00	5,00	1,25	0,29
	26 - 35 years	104	3,10	1,08	1,00	5,00		
	36 - 45 years	57	3,22	0,95	1,00	5,00		
	46 and above	27	3,11	0,95	1,50	4,50		
Social risk	25 and below	75	2,93	1,12	1,00	5,00	1,24	0,30
	26 - 35 years	104	2,76	1,01	1,00	5,00		
	36 - 45 years	57	3,09	1,10	1,00	5,00		
	46 and above	27	2,80	1,17	1,00	5,00		
Time risk	25 and below	75	2,95	1,05	1,00	5,00	3,04	0,03*
	26 - 35 years	104	2,77	0,94	1,00	5,00		
	36 - 45 years	57	3,22	0,94	1,00	5,00		
	46 and above	27	3,19	1,03	1,00	5,00		
Security risk	25 and below	75	3,61	1,08	1,00	5,00	0,48	0,70
	26 - 35 years	104	3,42	1,13	1,00	5,00		
	36 - 45 years	57	3,50	1,18	1,00	5,00		
	46 and above	27	3,44	1,02	2,00	5,00		

**p<0.05*

In Table 9, the comparison of electronic banking users' opinions about the internet banking according to their age group is given.

When Table 9 is examined, it is found that there is a meaningful difference between the opinions related to time risk subscale by their age group; and this means that it is statistically significant (**p<0,05**). The participants, who are in 25 and below age group, get lower points from the time risk subscale than the participants in 36-45 and 46 and above age group. In this case, it can be indicated that the participants in 25 and below age range internalize the statements under the time risk subscale less than the participants between 36 and 45; and participants between 46 and above. Additionally, participants between 25 and below get lower points from the time risk subscale in comparison to participants between 36 and 45; and participants between 46 and above. No statistically significant difference has been found between the opinions of individuals in 25 and below age range and individuals in 26 and 35 age range.

It is determined that there is no statistically significant between the opinions of the users of electronic banking according to their age groups under other subscales (p>0,05). Thus, individual's age doesn't have an impact on perceived usefulness, perceived ease of use, perceived benefit, perceived behavioral control, intention to use, attitude toward behavior, performance risk, financial risk, social risk and security risk.

The comparison of internet banking users' opinions related to internet banking by their education level is given under Table 10.

Table 10: Comparison of Participants' Opinions Related to Electronic Banking by Their Education Level (n=263)

	Educational level	n	$\bar{X}$	S	Min	Max	F	P
Perceived usefulness	Less than Diploma	7	2,89	0,79	2,00	4,00	4,84	0,00*
	Diploma	48	3,97	0,74	1,50	5,00		
	Bachelors'	127	4,03	0,75	1,25	5,00		
	Master	81	4,07	0,88	1,00	5,00		
Perceived ease of use	Less than Diploma	7	2,90	0,71	2,00	4,00	3,84	0,01*
	Diploma	48	3,85	0,72	2,00	5,00		
	Bachelors'	127	3,86	0,69	2,00	5,00		
	Master	81	3,86	0,82	1,00	5,00		
Perceived benefit	Less than Diploma	7	2,95	0,73	2,00	4,00	3,57	0,01*
	Diploma	48	3,72	0,65	2,00	5,00		
	Bachelors'	127	3,83	0,64	1,67	5,00		
	Master	81	3,82	0,84	1,00	5,00		
Perceived behavioral control	Less than Diploma	7	2,76	0,94	1,67	4,33	3,53	0,02*
	Diploma	48	3,67	0,74	1,67	5,00		
	Bachelors'	127	3,58	0,70	1,67	5,00		
	Master	81	3,70	0,83	1,67	5,00		
Intention to use	Less than Diploma	7	2,90	0,71	2,00	4,00	5,62	0,00*
	Diploma	48	3,98	0,70	2,00	5,00		
	Bachelors'	127	3,95	0,71	2,00	5,00		
	Master	81	4,06	0,72	2,00	5,00		
Attitude	Less than Diploma	7	2,82	0,57	2,00	3,25	8,03	0,00*
	Diploma	48	3,96	0,65	2,00	5,00		
	Bachelors'	127	4,03	0,67	2,25	5,00		
	Master	81	4,14	0,74	2,00	5,00		
Subjective norm	Less than Diploma	7	2,81	0,60	2,00	3,67	1,80	0,15
	Diploma	48	3,37	0,83	1,00	5,00		
	Bachelors'	127	3,51	0,89	1,00	5,00		
	Master	81	3,35	0,89	1,00	5,00		
Performance risk	Less than Diploma	7	3,64	0,85	3,00	5,00	1,19	0,31
	Diploma	48	3,25	1,03	1,00	5,00		
	Bachelors'	127	3,40	0,88	1,00	5,00		
	Master	81	3,18	1,08	1,00	5,00		
Financial risk	Less than Diploma	7	4,00	0,58	3,50	5,00	2,62	0,05
	Diploma	48	3,20	1,09	1,00	5,00		
	Bachelors'	127	3,30	1,02	1,00	5,00		
	Master	81	3,02	1,03	1,00	5,00		
Social risk	Less than Diploma	7	3,29	0,64	2,50	4,00	2,49	0,06
	Diploma	48	2,81	1,13	1,00	5,00		
	Bachelors'	127	3,04	1,07	1,00	5,00		
	Master	81	2,65	1,06	1,00	5,00		
Time risk	Less than Diploma	7	3,57	0,79	2,50	4,50	2,42	0,07
	Diploma	48	3,02	0,95	1,00	5,00		
	Bachelors'	127	3,04	0,98	1,00	5,00		
	Master	81	2,75	1,03	1,00	5,00		
Security risk	Less than Diploma	7	4,00	1,37	2,00	5,00	2,05	0,11
	Diploma	48	3,28	1,15	1,00	5,00		
	Bachelors'	127	3,63	1,03	1,00	5,00		
	Master	81	3,37	1,16	1,00	5,00		

$*p<0.05$

It is obtained that there is a meaningful difference between the opinions related to Perceived usefulness, Perceived ease of use, Perceived benefit, Perceived behavioral control, Intention to use and Attitude subscales. This means that this difference is statistically significant (**p<0,05**). This difference is derived from the users, who have low education level. The users, who have low education level internalize the statements under these subscales less than other users.

When the participants' opinions about the financial risk subscale are examined by their education level, it is seen that the points from the subscale taken by the participants with low level education is statistically significantly higher than the other participants (**p<0,05**).

It is determined that there is no statistically significant difference between the participants' opinions about the Subjective norm, Performance risk, Social risk, Time risk and Security risk subscales by their education level (**p>0,05**). The participants' opinions related to these subscales are similar regardless to their education level.

Table 11: Comparison of Participants' Opinions Related to Electronic Banking According to Their Computer Access Status (n=263)

	Computer Access	n	$\overline{X}$	S	t	P
Perceived usefulness	Yes	257	4,00	0,81	0,64	0,52
	No	6	3,79	0,75		
Perceived ease of use	Yes	257	3,84	0,74	0,75	0,46
	No	6	3,61	1,02		
Perceived benefit	Yes	257	3,79	0,71	1,17	0,24
	No	6	3,44	1,00		
Perceived behavioral control	Yes	257	3,62	0,77	1,09	0,28
	No	6	3,28	0,80		
Intention to use	Yes	257	3,97	0,72	1,38	0,17
	No	6	3,56	1,03		
Attitude	Yes	257	4,03	0,71	1,22	0,22
	No	6	3,67	0,77		
Subjective norm	Yes	257	3,42	0,87	1,32	0,19
	No	6	2,94	1,16		
Performance risk	Yes	257	3,31	0,98	-0,27	0,79
	No	6	3,42	0,80		
Financial risk	Yes	257	3,20	1,04	-1,09	0,28
	No	6	3,67	0,52		
Social risk	Yes	257	2,88	1,09	-0,84	0,40
	No	6	3,25	0,61		
Time risk	Yes	257	2,96	1,00	-0,30	0,76
	No	6	3,08	0,80		
Security risk	Yes	257	3,50	1,11	0,36	0,72
	No	6	3,33	1,03		

There is no statistically significant difference between the participants' opinions related to electronic banking by their computer access status (**p>0,05**). Therefore,

computer access seems to have no impact on individual's decision to use electronic banking.

Table 12: Comparison of Participants' Opinions Related to Electronic Banking by Their Internet Access Status (n=263)

	Internet Access	**n**	$\overline{X}$	**s**	**t**	**P**
Perceived usefulness	Yes	240	4,00	0,81	0,13	0,89
	No	23	3,98	0,80		
Perceived ease of use	Yes	240	3,84	0,74	0,36	0,72
	No	23	3,78	0,82		
Perceived benefit	Yes	240	3,80	0,73	0,91	0,36
	No	23	3,65	0,61		
Perceived behavioral control	Yes	240	3,62	0,76	0,32	0,75
	No	23	3,57	0,86		
Intention to use	Yes	240	3,98	0,73	1,23	0,22
	No	23	3,78	0,74		
Attitude	Yes	240	4,04	0,72	1,21	0,23
	No	23	3,85	0,69		
Subjective norm	Yes	240	3,42	0,84	0,29	0,77
	No	23	3,36	1,23		
Performance risk	Yes	240	3,31	0,98	0,15	0,88
	No	23	3,28	0,93		
Financial risk	Yes	240	3,21	1,05	0,07	0,94
	No	23	3,20	0,93		
Social risk	Yes	240	2,88	1,09	-0,44	0,66
	No	23	2,98	0,99		
Time risk	Yes	240	2,95	1,00	-0,41	0,68
	No	23	3,04	0,92		
Security risk	Yes	240	3,49	1,11	-0,06	0,95
	No	23	3,51	1,16		

There is no statistically significant difference between the participants' opinions related to electronic banking by their internet access status (**p>0,05**). Similar to computer access, the individual's access to internet does not have any impact on their opinion to use electronic banking.

Table 13: Comparison of Participants' Opinions Related to Electronic Banking by The Bank They Work With (n=263)

	Bank Type	**n**	$\overline{X}$	**s**	**t**	**P**
Perceived usefulness	Private Bank	224	4,01	0,78	0,32	0,75
	State-owned Bank	39	3,96	0,98		
Perceived ease of use	Private Bank	224	3,86	0,72	1,31	0,19
	State-owned Bank	39	3,69	0,87		
Perceived benefit	Private Bank	224	3,78	0,70	-0,19	0,85
	State-owned Bank	39	3,80	0,85		
Perceived behavioral control	Private Bank	224	3,65	0,76	1,96	0,05
	State-owned Bank	39	3,39	0,77		
Intention to use	Private Bank	224	3,98	0,72	1,15	0,25
	State-owned Bank	39	3,84	0,79		
Attitude	Private Bank	224	4,01	0,71	-0,66	0,51
	State-owned Bank	39	4,09	0,78		
Subjective norm	Private Bank	224	3,40	0,88	-0,37	0,71
	State-owned Bank	39	3,46	0,87		
Performance risk	Private Bank	224	3,33	0,97	0,92	0,36
	State-owned Bank	39	3,18	0,99		
Financial risk	Private Bank	224	3,21	1,02	-0,13	0,90
	State-owned Bank	39	3,23	1,14		
Social risk	Private Bank	224	2,89	1,06	0,08	0,94
	State-owned Bank	39	2,87	1,17		
Time risk	Private Bank	224	2,93	0,99	-1,13	0,26
	State-owned Bank	39	3,13	1,01		
Security risk	Private Bank	224	3,50	1,11	0,20	0,84
	State-owned Bank	39	3,46	1,09		

There is no statistically significant difference between the participants' opinions related to electronic banking by the bank they work with (**p>0,05**). Bank's type does not have an impact on client's opinion for usage of electronic banking.

Table 14: Correlations between Participants' Opinions about Electronic Banking (n=263)

		Perceived usefulness	Perceived ease of use	Perceived benefit	Perceived behavioral control	Intention to use	Attitude	Subjective norm	Performance risk	Financial risk	Social risk	Time risk	Security risk
Perceived usefulness	r	1,00											
	p												
	n	263											
Perceived ease of use	r	0,74	1,00										
	p	0,00*											
	n	263	263										
Perceived benefit	r	0,70	0,73	1,00									
	p	0,00*	0,00*										
	n	263	263	263									
Perceived behavioral control	r	0,62	0,70	0,62	1,00								
	p	0,00*	0,00*	0,00*									
	n	263	263	263	263								
Intention to use	r	0,66	0,70	0,68	0,70	1,00							
	p	0,00*	0,00*	0,00*	0,00*								
	n	263	263	263	263	263							
Attitude	r	0,74	0,63	0,67	0,60	0,75	1,00						
	p	0,00*	0,00*	0,00*	0,00*	0,00*							
	n	263	263	263	263	263	263						
Subjective norm	r	0,41	0,38	0,48	0,37	0,44	0,45	1,00					
	p	0,00*	0,00*	0,00*	0,00*	0,00*	0,00*						
	n	263	263	263	263	263	263	263					
Performance risk	r	-0,17	-0,19	-0,09	-0,28	-0,11	-0,11	-0,09	1,00				
	p	0,01*	0,00*	0,16	0,00*	0,08	0,08	0,14					
	n	263	263	263	263	263	263	263	263				
Financial Risk	r	-0,15	-0,22	-0,13	-0,25	-0,18	-0,10	-0,13	0,76	1,00			
	p	0,01*	0,00*	0,04*	0,00*	0,00*	0,10	0,03*	0,00*				
	n	263	263	263	263	263	263	263	263	263			
Social Risk	r	-0,27	-0,22	-0,14	-0,25	-0,14	-0,16	-0,08	0,62	0,61	1,00		
	p	0,00*	0,00*	0,02*	0,00*	0,02*	0,01*	0,20	0,00*	0,00*			
	n	263	263	263	263	263	263	263	263	263	263		
Time Risk	r	-0,32	-0,27	-0,17	-0,31	-0,17	-0,21	-0,16	0,62	0,63	0,71	1,00	
	p	0,00*	0,00*	0,01*	0,00*	0,01*	0,00*	0,01*	0,00*	0,00*	0,00*		
	n	263	263	263	263	263	263	263	263	263	263	263	
Security Risk	r	-0,15	-0,19	-0,09	-0,28	-0,14	-0,10	-0,07	0,71	0,68	0,61	0,66	1,00
	p	0,02*	0,00*	0,16	0,00*	0,02*	0,10	0,29	0,00*	0,00*	0,00*	0,00*	
	n	263	263	263	263	263	263	263	263	263	263	263	263

**p<0.05*

In Table 14, the correlations between the participants' opinions about the aspects affecting the usage of E-banking are shown.

The correlation between the scores from perceived usefulness subscale and scores from Perceived ease of use, Perceived benefit, Perceived behavioral control, Subjective norm, Intention of use and Attitude subscales is statistically significant (**p<0,05**). This correlation is positive and strong. This case supports the hypothesis *"H_2: PEOU positively affects the PU of the use of electronic banking."* While participants' points from Perceived usefulness subscale increase, also points taken from other subscales increase too. The correlation between perceived usefulness subscale and Performance risk, Financial risk, Social risk, Time risk and Security risk is not statistically significant and this correlation is negatively directed and weak. This case supports the hypotheses *"H_7: PR negatively influences the PU of using electronic banking."*. During the scores obtained from the perceived usefulness subscale increases, scores received from other subscales decrease.

There is a meaningful correlation between the points received from perceived ease of use subscale and the points obtained from Perceived benefit, Perceived behavioral control, Subjective norm, Intention of use and Attitude subscales. So, it is found that the correlation is statistically significant (**p<0,05**). This correlation is positive and strong. While the points from perceived ease of use increases, also points from other subscales increases too. There is a close relation amongst PEOU subscale with PerR, FR, SoR, TR and SecR and this relation is negative and weak. In other words, while the points from PEOU subscale increases, the points from other subscales decline.

To be continued with, it is found that the correlation between the points taken from perceived benefit subscale and Perceived behavioral control, Subjective norm, Intention of use and Attitude subscales is statistically significant (**p<0,05**). It is seen that this correlation is positive and strong. As the points received from perceived benefit subscale ascend, also points from other subscales increase too. On the other hand, there is a negative and weak also significant correlation between the PB and Financial risk, Social risk and Time risk subscales. In other words, the points taken from perceived benefit subscale increase, also points by other subscales decline. Moreover, the correlation between perceived benefit subscale and Performance Risk and Security risk subscales is not statistically significant.

On the other hand, the correlation between the participants' points obtained from the PBC subscale and Subjective norm, Intention of use and Attitude subscales is statistically significant (**p<0,05**). This correlation seems to be positive and strong. While points from Perceived behavioral control subscale ascend, also points from other subscales increase too. However; the correlation between perceived behavioral control subscale and Performance risk, Financial risk, Social risk, Time risk and Security risk subscales are statistically significant and the relation between these subscales are negatively correlated and have weak correlation. In other words; during the increase of points received from the perceived behavioral control occurs, the points obtained from other subscales decrease.

There is statistically significant correlation between the points taken from the intention of use subscale and points taken from the Subjective norm and Attitude subscales (**p<0,05**). This correlation is strong and positively directed. While points

from intention of use subscale increases, also points from other subscales increase too. This throughput supports two hypotheses *"H_3: ATB positively influences the ITU e-banking."* and "*H_4: SN has positively influences the ITU e-banking.*" Nevertheless, the correlation between intention of use subscale and Financial risk, Social risk, Time risk and Security subscales is statistically significant and this correlation seems to be negatively correlated and weak. In other words, during the increase of points from the perceived benefit subscale occurs, points from other subscales decline. Moreover, it is found that the correlation between the intention of use subscale and performance risk subscale is not statistically significant.

There is a meaningful correlation between the points taken from attitude subscale and points from subjective norm subscale, which means that the correlation is statistically significant (**p<0,05**). This correlation is positively directed and has moderate strength. It is observed that while the points from attitude subscale ascend, also the points from subjective norm increase too. Whereas, there is a weak and negative correlation between attitude subscale and social risk and time risk subscales and this correlation is statistically significant. Also, it is seen that the correlation between the attitude subscale and Financial Risk, Performance risk and Security risk subscales is not statistically significant.

It is found that there is a negative and weak correlation between subjective norm subscale and financial risk and time risk subscales. This correlation is statistically significant. Besides, it is determined that the correlation between subjective norm subscale and performance risk, social risk and security risk subscales is not

statistically significant. In this case, the hypotheses *"H_{12}: SoR has a negative effect on the SN regarding the use of e-banking."* is rejected.

Moreover, there is a strong and positive directed correlation between performance risk subscale and Financial risk, Social risk, Time risk and Security risk subscales, and it is found that this correlation is statistically significant **(p<0,05**). To put it another way, while the points from performance risk subscale increase, the points from other these subscales increase simultaneously.

It is found that there is a strong and positively directed correlation between financial risk subscale and Social risk, Time risk and Security risk subscales and this correlation is statistically significant **(p<0,05**). In other words, while the points obtained from financial risk subscale increase, also the points from these subscales increase too.

Furthermore, it is resulted that there is strong and positively directed correlation between social risk subscale and time risk and security risk subscales and this correlation is statistically significant **(p<0,05**). As it can be said, the points from these subscales increase simultaneously.

There is strong and positively directed correlation between time risk subscale and security risk subscale and this correlation is statistically significant **(p<0,05**). The points, which are taken from these subscales, increase concurrently.

Table 15: Factors Affecting Participants' Intention to use Electronic Banking (n=263)

	Unstandardized Coefficients		Standardized Coefficients		
Regression for Intention	**β**	**Std. Error**	**Beta**	**t**	**P**
(Constant)	0,30	0,23		1,32	0,19
Perceived usefulness	0,19	0,06	0,21	3,38	0,00*
Perceived ease of use	0,16	0,07	0,17	2,47	0,01*
Perceived benefit	0,17	0,06	0,17	2,64	0,01*
Perceived behavioral control	0,32	0,05	0,34	5,99	0,00*
Subjective norm	0,08	0,04	0,09	2,11	0,04*
Performance risk	0,11	0,05	0,14	2,18	0,06
Financial risk	-0,10	0,04	-0,15	-2,29	0,02*
Social risk	0,01	0,04	0,02	0,31	0,76
Time risk	0,09	0,05	0,12	1,98	0,05
Security risk	-0,04	0,04	-0,06	-0,95	0,34

*$p<0.05$

In Table 15, the factors affecting participants' intention to use electronic banking is given.

When Table 15 is reviewed, it is seen that Perceived usefulness, Perceived ease of use, Perceived benefit, Perceived behavioral control, Subjective norm and Financial risk factors affect the participants' intention to use e-banking in a statistical way and substantially. However; it is found out that Performance risk, Social risk and Security risk factors do not have a meaningful effect on the participants' intention to use electronic banking, which means that the effect of these factors is not statistically significant on the intention to use e-banking.

Table 16: The Variation of The Participants' Intention to use E-banking

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,80	0,64	0,63	0,45

	Sum of Squares	df	Mean Square	F	Sig.
Regression	90,40	10,00	9,04	45,46	0,00
Residual	50,11	253,00	0,20		
Total	140,51	263,00			

The variation of the participants' intentions of using electronic banking is defined 64% with Perceived usefulness, Perceived ease of use, Perceived benefit, Perceived behavioral control, Subjective norm and financial risk (R^2=0,64) and when it is looked at the overall model, the established model is statistically significant (**p<0,05**).

Perceived usefulness affects the participants' intention to use e-banking in a statistically significant way (β=0,19 , p<0,05). This result supports the hypotheses *"H_1: PU positively influences the ITU e-banking."*. Additionally, the correlation analysis included in Table 14 also shows that the correlation between perceived usefulness and intention to use online banking is positively directed as supporting H_1 hypotheses.

It is seen that perceived ease of use affects the participants' intention to use internet banking significantly and in a positive way (β=0,16 , p<0,05). Thus, the hypotheses *"H_{18}: PEOU positively influences ATB the use of e- banking.*" is accepted.

Perceived benefit influences the participants' intention to use internet banking statistically significant and in a positive way (β=0,17 , p<0,05). In other words, while the points received from the perceived benefit subscale increase, the points taken from other subscales decline. This case supports the hypotheses *"H_{16}: PB has a positive effect on ITU e-banking."*

Moreover, Perceived behavioral control affects the participants' intention to use internet banking in a significant and positive way (β=0,32 , p<0,05). Perceived behavioral control is the most affective factor that influences the participants' intention to use positively. This situation supports the hypotheses *"H_5: PBC positively influences the ITU e-banking."* Also, the correlation analysis results in table 14 support H_4 hypotheses.

Additionally, even though subjective norm has weak effect on the intention to use; subjective norm have influence on the participants' intention to use electronic banking in a positive way and this effect is statistically significant (β=0,08 , p<0,05).

Financial risk affects the participants' intention to use internet banking in a negative way but statistically significant level (β=0,10 , p<0,05). This results show that the hypotheses *"H_9: FR negatively influences ITU e-banking."* is accepted.

Even though there is negative and statistically significant correlation between security risk and intention to use subscales, there is no significant effect of security risk on intention to use variable when the model where all factors are used all

together is looked at (**p>0,05**). In this situation, the hypotheses "*H_{14}: SecR negatively influences ITU e-banking."* is rejected.

Table 17: Factors Affecting Participants' Attitude on Electronic Banking (n=263)

	Unstandardized Coefficients		**Standardized Coefficients**		
Regression for Attitude	**B**	**Std. Error**	**Beta**	**T**	**Sig.**
(Constant)	0,65	0,23		2,84	0,00*
Perceived usefulness	0,41	0,06	0,47	7,15	0,00*
Perceived ease of use	0,00	0,07	0,00	-0,04	0,97
Perceived benefit	0,20	0,06	0,20	3,14	0,00*
Perceived behavioral control	0,15	0,05	0,16	2,68	0,01*
Subjective norm	0,09	0,04	0,11	2,38	0,02
Performance risk	0,00	0,05	0,01	0,09	0,93
Financial risk	0,02	0,05	0,03	0,47	0,64
Social risk	0,01	0,04	0,01	0,17	0,87
Time risk	0,01	0,05	0,02	0,26	0,79
Security risk	0,00	0,04	-0,01	-0,10	0,92

The factors that affect the participants' attitude on e-banking are given in Table 17.

Perceived usefulness, Perceived benefit and Perceived behavioral control influence the attitude on using internet banking importantly and in a statistical way. However; Perceived ease of use, Subjective norm, Performance risk, Financial risk , Social risk, Time risk and Security risk factors have no statistically significant effect on the attitude on using electronic banking. In line with these results, the hypothesis *"H_6: PR has a negative influence on ATB of the use of online banking." and "H_8: FR has a negative effect on ATB of the use of electronic banking."* are rejected.

Perceived usefulness affects the participants' attitudes on internet banking importantly and in a positive way and this effect is statistically significant (β=0,41 , p<0,05). This factor is the most effective one on the attitudes about the internet banking. In direction of these results, the hypotheses *"H_{17}: PU positively influences ATB the use of e-banking."* is supported.

Perceived benefit affects the participants' attitudes related to internet banking in a positive way and this effect is statistically significant (β=0,20 , p<0,05). Therewithal; when the correlation results from Table 14 are analyzed, it is determined that the correlation between attitude and other subscales is statistically significant. In the result of this, the hypotheses *"H_{15}: PB has a positive effect on ATB to use e-banking."* is accepted.

Perceived behavioral control influences the attitudes on the intention to use internet banking positively and this influence is statistically significant (β=0,15 , p<0,05).

In the direction of the correlation analysis results in Table 14; even though solely there is a negative relationship between social risk and attitude, there is no statistically significant effect of social risk on the participants' attitudes on electronic banking when all factors are processed **(p>0,05**). In this case, the hypotheses *"H_{11}: SoR negatively influences ATB the use of e-banking."* is rejected.

Even though there is negative directed relationship between time risk and attitude (Table 14), the effect of time risk is not statistically significant on the participants' attitudes on internet banking when all factors are processed **(p>0,05**).

Correspondingly, the hypotheses *"H_{10}: TR negatively influences ATB the use of e-banking."* is rejected.

In the established model, security risk does not have statistical significant effect on the intention to use variable (**p>0,05**). This result is coherent with correlation analysis results declared in Table 14. So, the hypotheses *"H_{13}: SecR risk negatively influences ATB the use of electronic banking."* is rejected.

Table 18: The Variation of The Participants' Attitude on usage of E-banking

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,78	0,62	0,60	0,45

	Sum of Squares	df	Mean Square	F	Sig.
Regression	82,66	10,00	8,27	40,32	0,00
Residual	51,67	253,00	0,21		
Total	134,33	263,00			

The variation of the participants' attitude to use electronic banking is defined 62% with Perceived usefulness, Perceived benefit, Perceived behavioral control and the constant (R^2=0,64) and when it is looked at the overall model, the established model is statistically significant (**p<0,05**).

Chapter 6

CONCLUSION

6.1 Introduction

In recent decades, electronic banking has been found as an important delivery channel for the bank's clients to do their transactions without their physical presentations in the bank's branches. As it was mentioned in the previous chapters, the main purpose of this study is to provide insights into factors affecting TRNC's bank's client's decision to whether choose electronic banking channel or continue to do their transactions via traditional banking such as branches. Therefore, in order to collect relevant primary data a questionnaire was prepared ; the questions related to perceived usefulness, perceived ease of use, intention to use and attitude were adopted from cheng et al (2006), questions related to perceived behavioral control and subject norm were adopted from Wu & Chen (2005); questions linked to perceived benefit were adopted from Yiu et al. (2007), the questions related to all kind of risks such as performance risk, financial risk, social risk, time risk and security risk were adopted from Featherman & Pavlou (2003).

Thus, the questionnaire has been tested by factor analysis and internal consistency test, and fortunately our questionnaire was reported as valid and reliable.

6.2 Managerial Implications

After distributing the questionnaire, data was collected and examined to understand what factors affect ITU electronic banking.

The results show that gender doesn't affect opinions of participants related to electronic banking usage. Moreover, type of a bank that the participants work with does not affect their opinions related to choose electronic banking. Likewise, participants' opinions about electronic banking usage do not affected by their computer access nor their internet access status. The point here is that electronic banking is not just related to internet banking and personal computer banking, as we mentioned in the previous chapters ATM machines, EFTPOS, television banking, telephone banking and mobile banking are also known as electronic banking.

Furthermore, in general participants' opinions about electronic banking usage do not affected by participants' age except for time risk. In this case the participants' opinions related to usage of electronic banking are less likely to be affected when they are in lower age ranges. Not surprisingly the younger generations are less concerned about managing and saving their time compare to participants older than 26 years.

Additionally, education has a different result compare to the other demographic characteristics. The results show that the education level of participants affect most of the factors related to their opinions due to decision of using electronic banking. Participants' opinions related to usage of electronic banking are less likely to be affected when they have a lower educational level; this statement is true for factors

such as perceived usefulness, perceived ease of use, perceived benefit, perceived behavioral control, intention to use and attitude. On the other hand higher education level affects participants' opinion related to their decision of using electronic banking due to financial risk. Therefore, people with higher educational level are more careful about risks that are related to financial factors such as losing their money. Moreover, educational level as a demographic characteristic doesn't affect participants' decision about subjective norm, performance risk, social risk, time risk nor security risk.

The findings have indicated that perceived usefulness, perceived benefit, perceived behavioral control, subjective norm and attitude toward behavior have a positive effect on intention to use electronic banking by people who has a bank account in Turkish Republic of North Cyprus. Based on these findings we can say that if operating banks in TRNC stimulate these factors it leads bank's clients to intent to use electronic banking.

But, the problem here is that banks don't have an entire control over all these factors. For example, banks have no control over perceived behavioral control of their clients when it is related to client's knowledge, ability and resources which are related to individual's educational level and skills. However, banks can increase their electronic banking user's knowledge by giving them tutorials of usage information or to provide a demo for each specific system.

Moreover, attitude toward behavior is another factor that banks don't have control over it when it is all related to a person's opinion and viewpoint. But fortunately

banks have many ways to influence individual's attitude toward behavior. For instance, PB has a direct effect on ITU electronic banking as well as indirect effect through attitude toward behavior, therefore; banks can provide a broader range of banking services and with a minimum transaction fees through electronic banking.

Another factor that has a positive effect on attitude toward behavior is perceived ease of use; so, bankers can increase their client's attitude toward using electronic banking by keeping their electronic banking devices simple, easy to use and with the minimum requirement of mental effort, This factors increases the attitude toward behavior and so increases the likelihood of usage of electronic banking.

Furthermore, subjective norm is another factor that positively affects intention to use electronic banking. This factor is totally about other's opinion and ideas which banks don't have direct control over it, but generally, bankers may increase this if they decrease the risks related to potential loss of status in an individual's social group, however, as results showed in TRNC case social risk doesn't have any effect on subjective norm.

FR is the only factor that negatively effects an ITU E-banking by bank's clients in North Cyprus. Therefore, bankers should keep in mind that they have to increase their financial security to minimize the risks related to this factor. Banks always are known as a safe and trustable place for clients to put and stash their money but, if the clients have a fear that they may lose their money due to careless mistakes through electronic banking and they might not get the compensation back from the bank they

will not trust electronic banking and in this case they will not choose electronic banking.

6.3 Limitations and Further Recommendations

Even though, this thesis presents significant progress towards understanding the factors that affecting usage of electronic banking by banks' clients in TRNC but, there are some limitations that should be noticed. One of the major limitation of this study is that the results of this thesis are based on a medium size sample that total 320 surveys had been distributed which in total 261 usable responses were obtained. Furthermore, the sample of the study was constituted by people leaving in TRNC, where they were collected from five major cities of TRNC (Lefkosa, Girne, Famagusta, Lefke and Iskele). Therefore, the possible bias could be created to the results, because people from larger cities may have different view on accepting and using the electronic banking compare to those who lives in smaller cities. Finally, as we said in previous chapters the questionnaire has been prepared base on: TAM, combination of TPB & TRA, Perceived risk and perceived benefit. Therefore, there might be other possible factors that influence the client's intention to use electronic banking but they have not been mentioned.

The future researchers should keep in mind that, the case of electronic banking is a new subject for the banking industry of TRNC; electronic banking is on its early stages because the first presentation of electronic banking by local banks in this island was started in 2004, which it has not passed more than ten years. Moreover, in the case of TRNC we can see that still some banks don't provide any services related to electronic banking to their clients.

REFERENCES

Abeido, Z. J. Z. (2004), "Internet banking and its potential in TRNC", Masters thesis, Department of Banking and Finance, Eastern Mediterranean University, Gazimagusa.

Abdul Hamid, M. R., Amin, H., & Lada, S. (2007), "A comparative analysis of internet banking in Malaysia and Thailand", *Journal of Internet Business,* Vol. 4, pp. 1–19.

Agarwal, R., & Karahanna, E. (2000), "Time flies when you are having fun: Cognitive absorption & beliefs about information technology usage", *MIS Quarterly*, Vol. 24, pp. 665-694.

Ajzen, I. (1985), "From intentions to actions: A theory of planned behavior. In Kuhland, J., and Beckman, J. (Eds), *Action-control: From Cognition to Behavior*, Springer, Heidelberg, pp. 11-39.

Ajzen, I. (1991), "The theory of planned behavior: *Organizational Behavior and Human Decision Processes*", Vol. 50, pp. 179-211.

Ajzen, I. & Fishbein, M. (1980), *Understanding attitudes and predicting social behavior*, Englewood Cliffs, New Jersey: Prentice-Hall.

Bandura, A. (1977), "Self-efficacy: toward a unifying theory of behavioral change", *Psychological Review*, Vol. 84 No. 2, pp. 191-215.

Bektas, E. (2006), "Test of market structure and profitability in liberalizing the deposit market: the case of North Cyprus", *Problems and Perspectives in Management*, Vol. *4* No. 2, pp. 62-67.

Bestavros, A. (2000), "Banking industry walks Tightrope in personalization of web services", *Bank System Technology*, Vol. 37 No. 1, pp. 54-56.

Birch, D. G. (1999), "Mobile financial services: The Internet isn't the only digital channel to consumers". *Journal of Internet Banking and Commerce*, Vol. 4 No. 1, pp. 20-29.

Bosnjak, M., Obermeier, D., & Tutel, T. L. (2006), "Predicting and explaining the propensity to bid in online auctions: A comparison of two action theoretical models", *Journal of Consumer Behavior*, Vol. 5, pp. 102-16.

Bradley, L. & Stewart, K. (2003), "The diffusion of online banking", *Journal of Marketing Management*", Vol. 19 No. 10, pp. 1087-1109.

Brown, I., Cajee, Z., Davies, D. & Stroebel, S., (2003), "Cell phone banking: predictors of adoption in South Africa – an exploratory study", *International Journal of Information Management*, Vol. 23 No. 5, pp. 381–94.

Burr , W. (1996), “The information of the Bank organisation verändern Könnte”. *Bank and Market,* Vol. 11, pp. 28-31.

Bursetin, F., Cowie, J., Zaslavsky, A. & San Pedro, J. (2008), “Support for real time decision making in mobile financial applications”, *Information Systems and E-Business Management,* Vol.6 No. 3, pp. 257-78.

Celik, H. (2008), “What determines Turkish customers’ acceptance of internet banking?”, *International Journal of Bank Marketing*, Vol. 26 No. 5, pp. 353-70.

Centeno, C. (2004), “Adoption of internet services in the acceding and candidate countries, lessons from the internet banking case”. *Telematics and Informatics*, Vol. 21, pp. 293-315.

Chang, P. V. (2004), “*The validity of an extended technology acceptance model (TAM) for predicting intranet/portal usage*”, University of North Carolina, Chapel Hill, NC.

Chen, C. D., Fan, Y. W., & Fran, C. K. (2007), “Prediction electronic toll collection service adoption: An integration of the technology acceptance model and the theory of planned behavior”, *Transport Res Part C*, Vol. 15 No. 5, pp. 300-11.

Chen, H., Zheng, P., Atabakhsh, H., Wyzga, W., & Schroeder, J. (2003), "COPLINK: Managing law enforcement data & knowledge", *Communication of the ACM*, Vol. 46 No. 1, pp. 28-34.

Cheng, T. C. E., Lam, D. Y. C., & Yeung, A. C. L. (2006), "Adoption of internet banking: An empirical study in Hong Kong", *Decision Support Systems*, Vol. 42 No. 3, pp. 1558-1572.

Churchill, G. A. (1999). Marketing Research: *Methodological Foundations*, Forth Worth, 7th ed. TX: Dryden Press.

Churchill, G. A. & Iacobucci, D. (2002), "Marketing research: *Methodological Foundation*", 8th ed. Orlando: Harcourt College Publishers.

Daniel, E. (1999), "Provision of electronic banking in the UK and the Republic of Ireland", *International Journal of Bank Marketing*, Vol. 17 No. 2, pp. 72-82.

Davis, F. D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13, pp. 319-40.

Davis, F. D. (1993), "User acceptance of information technology: System characteristics, user perceptions and behavioral impacts", *International Journal of Man Machinery Study*, Vol. 38 No. 3, pp. 475-87.

Davis, F. D., Bagozzi, R. P., & Warshaw, P.R. (1989), "User acceptance of computer technology: A comparison of two theoretical models, *Journal of Management Science,* Vol. 35 No. 8, pp. 982-1003.

Dawes, J. & Rowley, J. (1998), "Enhancing the customer experience: contributions from information technology", *Management Decision,* Vol. 36 No. 6, pp.350-7.

Devlin, J. (1995), "Technology and innovation in retail banking distribution", *International Journal of Bank Marketing*, Vol. 13 No. 4, pp. 19-25.

Dowling, G. R., & Staelin, R. (1994), "A model of perceived risk & intended risk-handling activity", *Journal of Consumer Research,* Vol. 21, pp. 119-34.

Eriksson, K., Kerem, K., & Nilsson, D. (2005), "Customer acceptance of internet banking in Estonia", *International Journal of Bank Marketing*, Vol. 23 No. 2, pp. 200-16.

Eriksson, K., & Nilsson, D. (2007), "Determinants of the continued use of self-service technology: The case of Internet banking". *Technovation,* Vol. 27, pp. 159–167.

Fang, H. & Mykytyn, P. (2007), "Decision factors for the adoption of an online payment system by customers", *International Journal of E-Business Research*, Vol. 3 No. 4, pp. 1-32.

Featherman, M. S. & Fuller, M. (2003), "Applying TAM to e-services adoption: The moderating role of perceived risk", In: *Proceeding of the 36th Hawaii international conference on system sciences*, pp. 1-11.

Featherman, M. S. & Pavlou, P. A. (2003), "Predicting e-services adoption: a perceived risk facets perspective", *International Journal of Human Computer Study*, Vol. 59 No. 4, pp. 451-474.

Fishbein, M. A. & Ajzen, I. (1975), "Belief, Intention and behavior: An introduction to theory and research, *Addison-Wesley, Reading, Massachusetts*.

Fisher, A. (2000), "Internet buyers are not what you think", *Forbes Magazine*, Vol. 141 No. 1, pp. 190-191.

Forsythe, S. M. & Shi, B. (2003), "Consumer patronage and risk perceptions in internet shopping", *Journal of Business Research*, Vol. 56, pp. 867-75.

Furnell, S. M., & Karweni, T. (1999), "Security implications of electronic commerce: A survey of consumers and businesses", *Internet Research*, Vol. 9 No. 5, pp. 372-82.

Gerrard, P., & Cunningham, J. B. (2003), "The diffusion of internet banking among Singapore consumers". *International Journal of Bank Marketing*, Vol. 21 No. 1, pp. 16-28.

Gopalakrishnan, S.,Wischnevsky, J. D., & Damanpour, F. (2003), "A multilevel analysis of factors influencing the adoption of internet banking", *IEEE Transactions on Engineering Management*, Vol. 50 No. 4, pp. 413-426.

Gounaris, S. & Koritos, C. (2008), "Investigating the drivers of internet banking adoption decision: a comparison of three alternative frameworks", *International Journal of Bank Marketing*, Vol. 26 No. 5, pp. 282-304.

Gunsel, N. (2007), "The north Cyprus banking sector: the effect of a speculative attack on the Turkish lira", *Journal of Risk Finance*, Vol. 81 No. 4, pp. 410-421.

Gurău, C. (2002), "Online banking in transition economies: the implementation and development of online banking systems in Romania", *International Journal of Bank Marketing*, Vol. 20 No. 6, pp. 285-296.

Hagel, J. & Eisenmann (1994), "Navigating the multimedia landscape", *The McKinsey Quarterly*, Vol. 3, pp. 39-55.

Hagel, J. & Lansing, W. (1994), "Who owns the customer?", *The McKinsey Quarterly*, Vol. 4, pp. 63-75.

Hernandez, J. M. C. & Mazzon, J. A. (2007), "Adoption of internet banking: proposition and implementation of an integrated methodology approach", *International Journal of Bank Marketing*, Vol. 25 No. 2, pp. 72-88.

Howcroft, J. B. (1993), "Branch networks and alternative distribution channels: threats and opportunities", *International Journal of Bank Marketing*, Vol. 11 No. 6, pp. 26-31.

Hsu, M. H. (2004), "Internet self-efficacy and electronic service acceptance, *Decision Support System*, Vol. 38 No. 3, pp. 369-81.

Hwang, J., Yeh, T. C., & Li, J. M. (2003), "Securing online credit payment without disclosing privacy information", *Computer Standards and Interfaces*, Vol. 25, pp. 119-29.

Jacoby, J. & Kaplan, B. (1972), "The components of perceived risk, Venkastesan M, editor. Advances in consumer research. *IL: Association for Consumer Research*, Chicago.

Jarvenpaa, S. L., Tractinsky, N., & Saarinen, L. (1999), "Consumer trust in an internet store: A cross cultural validation", *Journal of Computer Media Commerce*, Vol. 5 No. 2, pp. 1-35.

Jayawardhena, C. & Foley, P. (2000). "Changes in the banking sector – the case of internet banking in the UK", *Internet Research: Electronic Networking Applications and Policy*, Vol. 10 No. 1, pp. 19-30.

Jeyaraj, A., Rottman, J. W. & Lacity, M. C. (2006), "A review of the predictors, linkages and biases in IT innovation adoption research", *Journal of Information Technology*, Vol.21 No.1, pp. 1-23.

Kalakota, R. & Whinston, A. B., (1997), "Electronic Commerce: A manager's guide", MA: *Addison Wesley, Reading*.

Karjaluoto, H., Mattila, M. & Pento, T. (2002), "Electronic banking in Finland consumer beliefs and reactions to a new delivery channel", *Journal of Financial Services Marketing*, Vol. 6, No. 4, pp. 346-61.

Kimball, R. & Gregor, W. (1995), "How distribution is transforming retail banking: changes leading banks are making", *Journal of Retail Banking Services*, Vol. 17 No. 3, pp.1-9.

Kuisma, T., Laukkanen, T., & Hiltunen M. (2007), "Mapping the reasons for resistance to internet banking: A means-end approach", *International Journal of Information and Management*, Vol.27 No.2, pp. 75-85.

Laforet, S., & Li, X. (2005). "Consumers' attitudes towards online and mobile banking in China". *International Journal of Bank Marketing*, Vol. 23 No. 5, pp. 362–80.

Lai, V. S., & Li, H. (2005). "Technology acceptance model for internet banking: An invariance analysis", *Journal of Information and Management*, Vol.42, pp. 373-86.

Laukkanen, T., Hivijari, M., Laukkanen, P. & Sinkkinen, S. (2008), "Segmenting bank customers by resistance to mobile banking", *International Journal of Mobile Communications*, Vol. 6 No. 3, pp. 309-20.

Lederer, A. L., Maupin, D. J., Sena, M. P. & Zhuang, Y. (2000), "The technology acceptance model and the world wide web", *Decision Support Systems*, Vol. 29 No.3, pp. 269-82.

Lee, M. C. (2009), "Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit", *Journal of Electronic Commerce Research and Applications*, Vol. 8, pp. 130-41.

Lee, M. S. Y., McGoldrick, P. F., Keeling, K. A., & Doherty, J. (2003), "Using ZMET to explore barriers to the adoption of 3G mobile banking service", *International Journal of Retail & Distribution Management*, Vol. 31 No. 6, pp. 340–48.

Liao, S. (1999), "The adoption of virtual banking: An empirical study", *International Journal of Information Management*, Vol. 19 No. 1, pp. 63-74.

Liaw, S. (2002), "Understanding user perceptions of World-wide web environments, *Journal of Computer Assissted Learning*, Vol. 18, pp. 137-48.

Littler, D. & Melanthiou, D. (2006), "Consumer perceptions of risk and uncertainty and the implications for behavior towards innovative retail services: The case of internet banking", *Journal of Retailing Consumer Services*, Vol. 13 No. 6, pp. 431-34.

Lu, J., Yu, C. S., Liu, C. & Yao, J. E. (2003), "Technology acceptance model for wireless internet", *Internet Research*, Vol. 13 No. 3, pp. 206-22.

Maenpaa, K. (2008), "Consumer perceptions of internet banking in Finland: The moderating role of familiarity", *Journal of Retailing and Consumer Service*, Vol. 15 No. 4, pp. 266-76.

Nehmzow, C. (1997), "The Internet will shake banking's medieval foundations",*Journal of Internet Banking and Commerce*, Vol. 2 No. 2, pp. 19-25.

O'Cass, A. & Fench, T. (2003), "Web retailing adoption: exploring the nature of internet users, Web retailing behavior, *Journal of Retail Consumer Service*, Vol. 10 No. 2, pp. 81-94.

Pavlou, P. (2001), “Integrating trust in electronic commerce with the technology acceptance model: Model development and validation”, *Boston, MA: AMCIS Proceedings*.

Peter, J. P. & Ryan, M. (1976), “An investigation of perceived risk at the brand level”, *Journal of Marketing Research*, Vol. 13, pp. 184-188.

Pikkarainen T. (2004), “Customer acceptance of online banking: an extension of the technology acceptance model”. *Internet Research*, Vol. 3, pp. 224–35.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004), “Consumer acceptance of online banking: an extension of the technology acceptance model”, *Internet Research*, Vol. 14 No. 3, pp. 224 – 35.

Poon, W. C., (2008), “Users’ adoption of e-banking services: the Malaysian perspective”, *Journal of Business and Industrial Marketing*, Vol. 23 No. 1, pp. 59–69.

Puschel, J., Karjaluoto, H., Mazzon, J. A. & Hernandez, J. M. C. (2010), “Mobile banking: Proposition of integrated adoption intention framework”, *Interntational Journal of Bank Marketing*, Vol. 28, No. 5, pp. 389-409.

Sathye, M. (1999), “Adoption of internet banking by Australian consumers: an empirical investigation”, *The International Journal of Bank Marketing*, Vol. 17 No. 7, pp. 324-35.

Saunders, M., Thornhill, A. (2003), "Organizational justice, trust and the management of change an exploration", *Personal Review*, Vol. 32 No. 3, pp. 360-75.

Saunders, M., Lewis, P., & Thronhill, A. (2000), *Research methods for business students*, 2nd ed., Essex: Pearson education.

Sheshunoff, A. (2000), "Internet banking- an update from the frontlines", *ABA Banking Journal*, Vol. 92 No. 1, pp. 51-5.

Seth, N., Deshmukh, S. G. & Vrat, P. (2004), "Service quality models: A review", *International Journal of Quality and Reliability Management*, Vol. 22, No. 9, pp. 36-51.

Shih, Y. & Fang, K. (2004), "The use of a decomposed theory of planned behavior to study internet banking in Taiwan", *Internet Research*, Vol. 14 No. 3, pp. 213-23.

Simpson, J. L. (2002), "The impact of internet in banking: observations and evidence from developed and emerging markets", *Journal of Telematics and Information*, Vol. 19, pp. 315-30.

Steven, B., Gerald, L. L., & Eric, J. J. (1999), "Predictors of online buying behavior", Association for computing machinery, *Commun ACM*, Vol. 42 No. 12, pp. 32-40.

Szajna, B. (1996), "Empirical evaluation of the revised technology acceptance model", *Management Science*, Vol. 42, pp. 85-92.

Rasiah, D. (2010), "ATM Risk Management and Controls", *European Journal of Economics, Finance and Administrative Sciences*, Vol. 21, pp. 161-71.

Robinson, T. (2000), Internet banking – still not a perfect marriage. *Information Week*, Vol. 17 No. 4, pp. 104-6.

Tan, M. & Teo,T. S. H. (2000), "Factors influencing the adoption of internet banking", *Journal of the Association for Information Systems*, Vol.1, No.1, pp.1-42.

Taylor, S. & Todd, P. (1995), "Understanding information technology usage: a test of competing models", *Information Systems Research*, Vol. 6 No. 2, pp. 144-76.

Thornton, J. & White, L. (2001), "Customer orientations and usage of financial distribution channels". *Journal of Services Marketing*, Vol. 15 No. 3, pp. 168–185.

Turban, E., Lee, J., King, D., & Chung, H. M. (2000), "Electronic commerce: A managerial perspective", *Prentice-Hall, International Inc.*

Turban, E., King, D., Lee, J., Warkentin, M., & Chung, M. H. (2008), "E-Commerce: A managerial Perspective", *Prentice-Hall, Upper Saddle River, NJ*.

Venkatesh, V., & Davis, F. D. (2000), "A theoretical extension of the technology acceptance model: Four longitudinal field studies", *Management science*, Vol. 46 No. 2, pp. 186-204.

Venkatesh, V., Ramesh, V., & Massey, A. P. (2003), "User acceptance of information technology toward a unified view", *MIS Quarterly*, Vol.27 No. 3, pp. 425-78.

Vijayasarathy, L. (2000), "Intentions to shop using internet catalogues: exploring the effects of product types, shopping orientations, and attitudes towards computers, *Journal of Electronic Marketing*, Vol. 10, pp. 29-38.

Wah, L. (1999), "Banking on the Internet", *American Management Association*, Vol. 88 No. 11, pp. 44-48.

Wang, Y. S., Wang, Y. M., Lin, H. H. & Tang, T. I. (2003), "Determinants of user acceptance of internet banking: an empirical study", *International Journal of Service Industry Management*, Vol. 14 No. 5, pp. 501-19.

Weir, C. S., Anderson, J. N., & Jack, M. A. (2006). "On the role of metaphor and language in design of third party payments in e-Banking: Usability and quality", *International Journal of Human– Computer Studies*, Vol. 64, pp. 770–84.

Wu, I. L, & Chen, J. L. (2005), "An extension of trust and TAM model with TPB in the initial adoption of on-line tax: An empirical study", *International Journal of Human Computer Study*, Vol. 62 No, 6, pp. 784-808.

Yiu, C. S., Grant, K. & Edgar, D. (2007), "Factors affecting the adoption of internet banking in Hong Kong: Implications for the banking sector", *International Journal of Information Management*, Vol. 27, pp. 336-51.

Yousafzai, S. Y., Pallister, J. G., & Foxall, G. R. (2003), "Aproposed model of e-trust for electronic banking, *Technoviation*, Vol. 23 No. 11, pp.847-60.

Zheng, J., Bakker, E. & Knight, I. (2006), "A strategic case for electronic adoption in healthcare supply chains, *International Journal of Information Management*, Vol. 26, pp. 290-301.

APPENDICES

Appendix I: Questionnaire (English version)

The purpose of this study is to examine the acceptance of electronic banking. This questionnaire asks about your PERSONAL beliefs of how electronic banking works. Your responses will be anonymous and will never be linked to you personally. Thank you for your cooperation.

Please circle ⬭ the most appropriate response.

1. What is your gender?: A) Male B) Female
2. What is your age? ……
3. What is your highest educational level attained? A) Less than Diploma B) Diploma C) Bachelor D) Master E) More than Master
4. Do you own or have access to a computer? A) Yes B) No
5. Do you have internet access at home? A) Yes B) No
6. Do you use any kind of electronic banking (such as ATM, Internet banking, FTPOS, Mobile banking, Telephone banking,…) A) Yes B) No
7. Which bank/s do you use for majority of your electronic banking services? ……..

If the answer to question "6" is yes then:

Please indicate your agreement or disagreement with the following statements by checking your response using the scale; the following items describe statements about adoption of internet banking.

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)

	Perceived usefulness						
Statements 1	1	I think that using electronic banking would enable me to accomplish my tasks more quickly.	1	2	3	4	5
	2	I think that using the electronic banking would make it easier for me to carry out my tasks.	1	2	3	4	5
	3	I think the electronic banking is useful.	1	2	3	4	5
	4	Overall, I think that using the electronic banking is advantageous.	1	2	3	4	5
	Perceived ease of use						
Statements 2	1	I think that learning to use electronic banking would be easy.	1	2	3	4	5
	2	I think that interaction with electronic banking does not require a lot of mental effort.	1	2	3	4	5
	3	I think that it is easy to use electronic banking to accomplish my banking tasks.	1	2	3	4	5
	Perceived benefit						
Statements 3	1	I think that using electronic banking can save my time in performing banking transactions.	1	2	3	4	5
	2	I think that using electronic banking can offer me a wider range of banking products, services and investment opportunities.	1	2	3	4	5
	3	I think that using electronic banking can save the transaction handling fees in performing banking transaction.	1	2	3	4	5

Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)

	Perceived behavioral control						
State ments	1	I think that I would be able to use the electronic banking well for financial transactions.	1	2	3	4	5

	2	I think that using electronic banking would be entirely within my control.	1	2	3	4	5
	3	I think that I have the resources, knowledge, and ability to use electronic banking.	1	2	3	4	5
	Intention to use						
Statements 5	1	I would use the electronic banking for my banking needs.	1	2	3	4	5
	2	Using the electronic banking for handling my banking transactions is something I would do.	1	2	3	4	5
	3	I would see myself using the electronic banking for handling my banking transactions.	1	2	3	4	5
	Attitude						
Statements 6	1	I think that using electronic banking is a good idea.	1	2	3	4	5
	2	I think that using electronic banking for financial transactions would be a wise idea.	1	2	3	4	5
	3	I think that using electronic banking is pleasant.	1	2	3	4	5
	4	In my opinion, it is desirable to use electronic banking.	1	2	3	4	5
	Subjective norm						
Statements 7	1	People who are important to me would think that I should use electronic banking.	1	2	3	4	5
	2	People who influence me would think that I should use electronic banking.	1	2	3	4	5
	3	People whose opinions are valued to me would prefer that I should use electronic banking.	1	2	3	4	5
	Performance risk						
Statements 8	1	Online banking servers may not perform well because of slow download speeds, the servers' being down or because the website is undergoing maintenance.	1	2	3	4	5
	2	Electronic banking servers may not perform well and process payments incorrectly.	1	2	3	4	5

	Financial risk						
Statements 9	1	When transferring money with electronic banking, I am afraid that I will lose money due to careless mistakes such as wrong input of account number and wrong input of the amount of money.	1	2	3	4	5
	2	When transaction errors occur, I worry that I cannot get compensation from banks.	1	2	3	4	5
	Social risk						
Statements 10	1	I'm sure that if I decided to use electronic banking and something went wrong with electronic transactions, my family, friends and colleagues would think less of me.	1	2	3	4	5
	2	When my bank account incurs fraud or the hacker invades, I will have potential loss of status in one's social group.	1	2	3	4	5
	Time risk						
Statements 11	1	Using electronic banking services would lead to a loss of convenience of me because I would have to waste a lot of time fixing payments errors.	1	2	3	4	5
	2	It would take me lots of time to learn how to use electronic banking systems.	1	2	3	4	5
	Security risk						
Statements 12	1	I would not feel totally safe providing personal privacy information over the electronic banking.	1	2	3	4	5
	2	I'm worried to use electronic banking because other people may be able to access my account.	1	2	3	4	5
	3	I would not feel secure sending sensitive information across the electronic banking.	1	2	3	4	5

Thank you so much for your participation.

Appendix II: Questionnaire (Turkish version)

Bu çalışmanın amacı, elektronik bankacılığın kabulünü gözden geçirmektir. Bu anket elektronik bankacılığın nasıl çalıştığına ilişkin sizin KİŞİSEL görüşlerinizi öğrenmeye yöneliktir. Verdiğiniz cevaplar isimsiz olacaktır ve sizinle şahsi bir bağlantısı olmayacaktır. Katkılarınızdan dolayı teşekkür ederim.

Lütfen en uygun cevabı daire içine alınız.

1. Cinsiyetiniz nedir?A) Erkek B)Kadın
2. Yaşınız: …….
3. Elde ettiğiniz en yüksek eğitim düzeyi nedir?

   A) Ortaokul B) Lise C) Üniversite D) Yüksek Lisans E) Yüksek Lisans'tan fazlası
4. Kendi bilgisayarınız ya da bilgisayara erişiminiz var mı? A) Evet B) Hayır
5. Evinizde internet erişimi var mı? A) Evet B) Hayır
6. Herhangi bir elektronik bankacılığı kullanıyor musunuz? (ATM, internet bankacılığı, FTPOS, mobil bankacılık, telefon bankacılığı gibi) A) Evet B) Hayır
7. Genellikle elektronik bankacılık servisleri için hangi bankayı/bankaları kullanıyorsunuz? ……..

Eğer "6. soruyu" evet olarak cevapladıysanız:

Lütfen aşağıdaki ifadelere katılıp katılmadığınızı aşağıda belirtilen ölçeğe göre işaretleyiniz. Aşağıdaki maddeler internet bankacılığın kabulünü tanımlamaktadır.

Kesinlikle katılmıyorum (1)	Katılmıyorum (2)	Ne katılıyorum ne de katılmıyorum(3)	Katılıyorum (4)	Kesinlikle katılıyorum (5)

		Algılanan Kullanışlılık					
İfadeler1	1	Elektronik bankacılık kullanımının, işlerimin daha hızlı tamamlanmasında kolaylık sağladığını düşünüyorum.	1	2	3	4	5

	2	Elektronik bankacılık kullanımının işlerimi daha kolay yürütmemi sağladığını düşünüyorum.	1	2	3	4	5
	3	Elektronik bankacılığın kullanışlı olduğunu düşünüyorum.	1	2	3	4	5
	4	Genel olarak elektronik bankacılık kullanımının avantajlı olduğunu düşünüyorum.	1	2	3	4	5
	Algılanan Kullanım Kolaylığı						
İfadeler2	1	İnternet bankacılığı kullanımının kolay olduğunu düşünüyorum.	1	2	3	4	5
	2	İnternet bankacılığıyla etkileşimin çok fazla zihinsel bir çaba gerektirmediğini düşünüyorum.	1	2	3	4	5
	3	Bankacılık işlemlerimi tamamlamak için elektronik bankacılığı kullanımının kolay olduğunu düşünüyorum.	1	2	3	4	5
	Algılanan Fayda						
İfadeler3	1	Elektronik bankacılığı kullanımının yapılan bankacılık işlemleri için zaman kazandırdığını düşünüyorum.	1	2	3	4	5
	2	Elektronik bankacılık kullanımının bana bankacılık ürün, hizmet ve yatırım için geniş bir yelpaze sunduğunu düşünüyorum.	1	2	3	4	5
	3	Elektronik bankacılık kullanımının bankacılık işlemlerini gerçekleştirirken işlem ücretini de kaydedeceğini düşünüyorum.	1	2	3	4	5

Kesinlikle katılmıyorum(1)	Katılmıyorum (2)	Ne katılıyorum ne de katılmıyorum (3)	Katılıyorum (4)	Kesinlikle katılıyorum (5)

	Algılanan Davranışsal Kontrol						
İfadeler4	1	Elektronik bankacılık kullanımının finansal işlemler için iyi olacağını düşünüyorum.	1	2	3	4	5
	2	Elektronik bankacılık kullanımının tamamen benim kontrolümde olduğunu düşünüyorum.	1	2	3	4	5

	3	Elektronik bankacılık kullanımı için yeterli kaynağımın, bilgimin ve becerimin olduğunu düşünüyorum.	1	2	3	4	5
	Kullanım Niyeti						
İfadeler5	1	Elektronik bankacılığı bankacılık ihtiyacım için kullanırım.	1	2	3	4	5
	2	Bankacılık işlemlerimi yapmak için elektronik bankacılığını kullanmak yapabileceğim bir şeydir.	1	2	3	4	5
	3	Bankacılık işlemlerimi yapmak için elektronik bankacılığı kullanırken kendimi görebiliyorum.	1	2	3	4	5
	Tutum						
İfadeler6	1	Elektronik bankacılık kullanımının iyi bir fikir olduğunu düşünüyorum.	1	2	3	4	5
	2	Bankacılık işlemleri için elektronik bankacılık kullanımının akıllıca bir fikir olduğunu düşünüyorum.	1	2	3	4	5
	3	Elektronik bankacılık kullanımının memnuniyet verici olduğunu düşünüyorum.	1	2	3	4	5
	4	Benim görüşüme göre elektronik bankacılık kullanımı istenen bir durumdur.	1	2	3	4	5
	Öznel Norm						
İfadeler7	1	Benim için önemli olan insanlar benim elektronik bankacılığı kullanmamgerektiğini düşünürler.	1	2	3	4	5
	2	Beni etkileyen insanlar benim internet bankacılığı kullanmam gerektiğini düşünürler.	1	2	3	4	5
	3	Görüşleri benim için önemli olan insanlar benim internet bankacılığı kullanmamı tercih ederler.	1	2	3	4	5
	Performans Riski						
İfadeler8	1	Çevrimiçi bankacılık sunucuları yavaş indirme hızı, sunucunun kapanması ya da internet sitesinin bakımı nedeniyle iyi performans göstermeyebilir.	1	2	3	4	5
	2	Elektronik bankacılık sunucuları iyi performans göstermez ve ödemeleri doğru işlemezler.	1	2	3	4	5
	Finansal Risk						

İfadeler 9	1	Elektronik bankacılık aracılığıyla yapılan para transferlerinin dikkatsiz hatalar nedeniyle (mesela hesap numarasının ya da para miktarının yanlış girilmesi) paranın kaybolacağından korkarım.	1	2	3	4	5
	2	İşlem hataları meydana gelince, bankadan bunu tanzim edememem diye endişe ederim.	1	2	3	4	5
	Sosyal Risk						
İfadeler 10	1	Eğer internet bankacılığı kullanmaya karar verirsem, eminim ki elektronik işlemlerde bir şeyler ters gidecek ve ailem, arkadaşlarım ve iş arkadaşlarım beni kınayacaklar.	1	2	3	4	5
	2	Eğer banka hesabım dolandırılır ya da internet korsanları tarafından saldırıya uğrarsa, bulunduğum sosyal grup içerisinde statümü kaybetme olasılığım var.	1	2	3	4	5
	Zaman Riski						
İfadeler 11	1	Elektronik bankacılık kullanımı rahatlığımı bozacaktır çünkü ödeme hatalarını düzeltmek için çok zaman kaybetmek zorunda kalırım.	1	2	3	4	5
	2	Elektronik bankacılık sistemlerini nasıl kullanacağımı öğrenmek benim çokça vaktimi alacaktır.	1	2	3	4	5

Kesinlikle katılmıyorum(1)	Katılmıyorum (2)	Ne katılıyorum ne de katılmıyorum (3)	Katılıyorum (4)	Kesinlikle katılıyorum (5)

	Güvenlik Riski						
İfadeler 12	1	Elektronik bankacılık üzerinden kişisel, özel bilgilerimin sağlanması bana hiç güvenli gelmez.	1	2	3	4	5
	2	Elektronik bankacılık kullanırken diğer insanların benim hesabıma ulaşabilecek olması beni endişelendirir.	1	2	3	4	5
	3	İnternet bankacılığı aracılığıyla hassas bilgilerin gönderimi konusunda kendimi güvende hissetmem.	1	2	3	4	5

<u>Katılımınız için teşekkür ederim.</u>