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PERCEPTION OF CORPORATE CUSTOMERS ABOUT MOBILE BANKING SERVICE QUALITY: EXAMPLE OF A TURKISH BANK

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Perception of Corporate Customers About Mobile Banking Service Quality: Example of a Turkish Bank

Kurumsal Müşterilerin Mobil Bankacılık Hizmet Kalitesi İle İlgili Algısı : Bir Türk Bankası Örneği

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PREFACE

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TABLE OF CONTENTS

PREFACE iii
TABLE OF CONTENTS iv
LIST OF TABLES vi
LIST OF FIGURES viii
ABSTRACT ix
ÖZET x
INTRODUCTION 1
CHAPTER 1 3
BANKING INDUSTRY AND NEW TECHNOLOGIES 3
1.1. Banking Industry 3
1.1.1. Banking Industry and Economy 5
1.1.2. Development and Use of Banking Products 7
1.2. Technology Use In Banking 9
1.2.1. Electronic Fund Transfer (EFT) 10
1.2.2. Automated Teller Machine (ATM) 12
1.2.3. Bank Cards and Credit Cards 14
1.2.4. Telephone Banking 15
1.2.5. Internet Banking 17
1.2.6. Mobile Banking 18
1.2.6.1. Benefits of Mobile Banking for Banks 20
1.2.6.1.1. Managing High Volume Transactions 21
1.2.6.1.2. Reducing Distribution Cost 21
1.2.6.1.3. Increasing Customer Satisfaction 22
1.2.6.1.4. Having a Prestigious Product 22
1.2.6.2. Benefits of Mobile Banking for Users 23
CHAPTER 2 25
BANKING INDUSTRY IN TURKEY: TECHNOLOGY AND CUSTOMERS 25
2.1. History of Turkish Banking Industry 25
2.2. Use of New Technologies In Turkish Banking Industry 40
2.2.1. Use of Technologies Before Internet Banking 40

2.2.2. Use of Digital Banking 42
2.2.3. Use of Internet Banking 44
2.2.4. Use of Mobile Banking 45
2.3. Types of Customers In Banking Industry 47
2.3.1. Individual Customers 48
2.3.2. Retail Customers 50
2.3.3. Commercial Customers 51
2.3.4. Corporate Customers 53
CHAPTER 3 55
SERVICE QUALITY AND CUSTOMER SATISFACTION 55
3.1. Customer Satisfaction 55
3.2. Service Quality 57
3.2.1. Difference Between Product and Service Quality 58
3.2.2. Dimensions of Service Quality And SERVQUAL 60
3.3. The Relationship Between Service Quality Dimensions and Customer Satisfaction 62
CHAPTER 4 65
PERCEPTION OF CORPORATE CUSTOMERS 65
4.1. About The Research 65
4.2. Purpose of The Research 65
4.3. Research Model 65
4.4. Population and Sample 66
4.5. Data Collection Tool 66
4.6. Data Analysis 67
CONCLUSION 85
REFERENCES 92
APPENDIX 100

LIST OF TABLES

Table 2.1. Number of Active Digital Banking Customers……..…43
Table 4.1. Population and Sample……66
Table 4.2. Results of the Reliability Analysis……..67
Table 4.3. Demographic Distribution of the Participants……68
Table 4.4. Descriptive Statistics for the Dimensions……71
Table 4.5. Numbers of Firms According to Their Fields of Operation…..…….72
Table 4.6. Mobile Banking Intended Use According to Sector……...…72
Table 4.7. Mobile Banking Intended Use According to Annual Revenue..….....73
Table 4.8. Service Quality Perception Averages of the Participants According to Their Genders……74
Table 4.9. Independent Sample t-test Results that Examine the Service Quality Perception According to Gender ……..…….75
Table 4.10. Service Quality Perception Average of the Participants According to Their Age Groups……...76
Table 4.11. The Results of the ANOVA Test that was Carried Out According to Age Groups……...…….76
Table 4.12. Service Quality Perception Averages of the Participants According to Their Education Status…….……..77
Table 4.13. The Results of the ANOVA Test that was Carried Out According to Education Status of the Participants…….……..77
Table 4.14. Post-Hoc Least Differences Test Results…….……..78
Table 4.15. Mobile Banking Service Quality Perception Averages of the Participants According to their Company Revenue……..……..79
Table 4.16. The Results of the ANOVA Test that was Carried Out According to the Company Revenues of the Participants ……..…….79
Table 4.17. Mobile Banking Service Quality Perception Averages of the Participants According to their Company Activity Areas……..……80
Table 4.18. The Results of the ANOVA Test that was Carried Out According to the Company Activity Areas of the Participants……...……81

Table 4.19. Mobile Banking Service Quality Perception Averages of the Participants According to their Preferred Service Channel…….……82
Table 4.20. The Results of the ANOVA Test that was Carried Out According to the Preferred Service Channel of the Participants……...…….82
Table 4.21. Mobile Banking Service Quality Perception Averages of the Participants According to their Mobile Banking Service Usage Frequency……83
Table 4.22. The Results of the ANOVA Test that was Carried Out According to the Mobile Banking Usage Frequency of the Participants.……83

LIST OF FIGURES

Figure 3.1. The Nordic Model of Service Quality (Gronroos, 1988)……61

Figure 3.2. The SERVPERF Model of Service Quality (Cronin & Taylor, 1992)……..…61

Figure 3.3. The SERVQUAL Model of Service Quality (Parasuraman et.al., 1988)……...62

Figure 4.1. The Research Model…….……..65

ABSTRACT

Technological developments in every field in recent years have also affected the banking sector. The industry is experiencing a digital transformation. The Covid-19 pandemic in 2020 has also accelerated this transformation. As the use of mobile banking becomes widespread with mobile applications, the variety of services and products offered by banks via mobile also increases.

This study aims to investigate the perceptions of corporate customers regarding mobile banking service quality. Within the scope of the research, a survey was conducted with 314 digital banking users, who were selected from the corporate customers of one of the private banks operating in the banking sector in Turkey. The data obtained in the study were analyzed with the SPSS statistical program.

According to the research findings, mobile banking service quality perception is high among participants. 3 of the 5 dimensions used to measure the perception of mobile banking service quality are the dimensions in which the satisfaction of corporate customers is the highest. These dimensions are Convenience in Banking, Mobile Banking Efficiency, and Easy to Operate. Assurance and Security and Reliability and Responsiveness dimensions of these 5 dimensions are the dimensions in which corporate customers' perception of service quality is lower.

Keywords: Digital Banking, Mobile Banking, Perception of Service Quality, Corporate Customer Satisfaction, Digital Banking, Dimensions of Service Quality

ÖZET

Son yıllarda her alanda yaşanan teknolojik gelişmeler Bankacılık sektörünü de etkilemektedir. Sektör dijital bir dönüşüm yaşamaktadır. 2020 yılında yaşanan Covid-19 salgını da bu dönüşümü hızlandırmıştır. Mobil uygulamalar ile birlikte mobil bankacılık kullanımı yaygınlaşırken, bankaların mobil üzerinden sunduğu hizmet ve ürün çeşitliliği de artmaktadır.

Bu çalışmanın amacı, kurumsal müşterilerin mobil bankacılık hizmet kalitesi ile ilgili algısını araştırmaktır. Araştırma kapsamında Türkiye'de Bankacılık sektöründe faaliyet gösteren özel bankalardan bir tanesinin kurumsal müşterileri içinden belirlenen 314 dijital bankacılık kullanıcısı ile anket çalışması yapılmıştır. Çalışmada elde edilen veriler SPSS istatistik programı ile analiz edilmiştir.

Araştırma bulgularına göre; katılımcılarda mobil bankacılık hizmet kalitesi algısı yüksektir. Mobil bankacılık hizmet kalitesi algısını ölçmek için kullanılan 5 boyuttan 3'ü kurumsal müşterilerin memnuniyetinin en yüksek olduğu boyutlardır. Bunlar; Bankacılık işlemlerinde kolaylık, Mobil bankacılık uygulamasının etkinliği ve Mobil bankacılığın kullanım kolaylığı boyutlarıdır. Bu 5 boyuttan Güvenlik ve Emniyet ile Güvenilirlik ve Duyarlılık boyutları kurumsal müşterilerin hizmet kalitesi algısının daha düşük olduğu boyutlardır.

Anahtar Kelimeler: Dijital Bankacılık, Mobil Bankacılık, Hizmet Kalitesi Algısı, Kurumsal Müşteri Memnuniyeti, Hizmet Kalitesi Boyutları

INTRODUCTION

The banking industry is one of the most frequent users of electronic commerce applications. New technologies, such as mobile applications, cloud technologies, big data, internet of the things (IoT) and artificial intelligence have a rapid development in recent years and a great influence in the banking industry.

Digital banking, including internet and mobile banking, can be considered as one of the most important developments in the distribution channels of the banking industry. Digitalization of banking activities provides opportunities in many service areas such as effective customer relations, personalized products and services, high-efficiency operations and expansion of banking activities. Digital transformation efforts, which have gained momentum in the last decade, are positioned along the banks' high priority issues and significant investments are made in this field.

While the use of technology is becoming important for banks, they have started to use new methods and technologies to provide services to their customers. Some of these services until reaching mobile technologies include automatic teller machines (ATM), credit cards, telephone banking and internet banking.

Internet banking ensures that banking transactions can be accessed from anywhere in the world at any time via the websites of banks. In online banking, there is no one-to-one relationship with bank staff. The customer performs the banking transactions automatically.

Improvements are made in branches and digital service channels so that individual and corporate customers can perform their transactions faster and more easily. In this way, while ensuring that customers can perform their banking activities in a short time and with pleasure, satisfaction is maximized.

Mobile banking is defined as the process where banking transactions are carried out with the help of a mobile tool and application (Krassi, 2002, p.2). The number

of banking transactions using mobile banking is increasing day by day. In this study, one of Turkey's private bank's corporate customers' perceptions of mobile banking is examined. The name of this bank will not be mentioned because of the commercial concerns of confidentiality and will be named in this research as X Bank.

The first part of the study deals with the banking industry and new technologies affecting the delivery and channels of services. In the second part of the study, the development and current situation of the banking sector in Turkey are examined. In the same part, the definition of corporate users is discussed and the differences from the individual ones are found out. In the third part of the research, the relationship between service quality dimensions and customer satisfaction is discussed to put a base for the research. The perception of corporate customers about the service quality of mobile banking is searched by applying a survey to the corporate users of mobile banking. The findings and conclusions of this research are given in the final part of the dissertation.

This research may also serve as a basis for studies to identify consumer approaches to Internet solutions based on mobile applications. The research is thought to provide valuable contributions to mobile banking service providers to understand the voice of customers.

CHAPTER 1

BANKING INDUSTRY AND NEW TECHNOLOGIES

This chapter is about the banking sector, its connection with the economy, the development and use of banking products, and the use of technology in banking including EFT, ATM, credit cards, telephone banking, internet banking, mobile banking, and the benefits of mobile banking. The chapter creates a framework for the banking sector and explains its relationship with the economy. Then in the following sections, the chapter mentions the development and utilization processes of banking products. Since banking products have been developing in the digital age, the perspective of banks and customers has expanded. This chapter reveals this wide perspective in terms of both customer satisfaction and cost reduction of banks.

1.1. Banking Industry

As technology advances, banks try to provide high technology to gain new customers, develop the existing customers' perceptions and encourage their loyalty. The usage of advanced technology benefits the banks themselves as well. It reduces costs in the banking sector and intense competition encourages banks to develop new products, ideas, methods and processes and gain more market share. Technology involvement in the banking sector mainly started with electronic banking in the 1980s. In the mid-1990s, internet banking started becoming widespread (Sharma & Malviya, 2011). Internet banking has changed some of the rules of the game.

The transformation of traditional banking services brings great benefits to banks. Digital technologies enable banks to analyze their data with high precision, to offer their customers low-cost, satisfying and customized products and to increase

efficiency in their operations. In addition, banks have developed new business models thanks to digital technologies. For example, in the UK, internet banking was used by 50% of the population and this rate is predicted to increase to 66% in 2020 (Popkova & Alpidovskaya, 2020). This means 2 of every 3 people use internet banking in the UK.

As the other aspect of digital banking, mobile banking has also become a widespread service in the banking sector all over the world. On top of internet banking, mobile banking allows customers to make transactions from anywhere anytime without carrying a computer or a tablet.

Another recent development in the banking industry is the blockchain technology. With the support of accelerating technological advances and financial innovations, blockchain technology has been a revolutionary step for the banking sector. Blockchain combines many computer technologies including "point-to-point transmission, consensus mechanisms, distributed data storage, and encryption algorithms". In the following years, new windows can be opened for not only to the banking sector but also to the economies and the financial world in terms of radically transforming the operating models. Blockchain technology can enable banks to offer rich scenarios, personalized services and a good customer experience to their customers. In terms of efficiency, blockchain technology can offer point-to-point transmission, disintermediation, clearing and high efficiency. About the cost issue, blockchain technology can enable banks to have a completely automated perspective, disintermediation, and low costs. In terms of safety, blockchain technology can offer distributed data storage that cannot be tempered, use of asymmetric encryption, secure personal information of customers, and good safety (Guo & Liang, 2016).

The technological advances at an unprecedented pace have created a totally different banking sector in the world. A new world has also the COVID-19 problem which has accelerated some developments and transformation of banks

to digital technologies. The use of technology in the banking sector is mentioned in detail below.

1.1.1. Banking Industry and Economy

Normally, banks function as the institutions that foster the development of economies, industries, agriculture and trade. However, since the 1990s, instabilities in the economies of the world have increased. Globalization has made some economies quite vulnerable to crises because the economies of countries are interconnected.

Since banks are important actors of economies, they are more or less part of instabilities and crises. The instabilities in the economies of the world in the 1990s (for example The Gulf War) caused developed economies except the USA to experience unstable and low growth rates whereas developing economies to experience financial crises that had global reflections. Neo-liberal policies and the accompanying global capital movements mostly underlay the financial crises which are also called banking crises (Sarı, 2020).

In the world, the biggest crisis has been the Subprime Mortgage Crisis of 2007-2008. The crisis began in the USA as a credit crisis at first and then turned into a liquidity crisis which eventually became a global crisis. The mortgage credits were given to marginal areas, people, and institutions and complicated derivative products caused the crisis. The global crisis caused many big and small banks in developed countries to lose millions of dollars or go bankrupt. An important indicator of the crisis was the increase in the rate of legal proceedings of the bank customers worldwide after 2008.

On the positive side, the banking sector is a determinant actor of the economic growth and development of countries. Although there are other actors, the banking industry covers a large area. The banking sector provides the collection

of funds and savings that are necessary for growth and enables the actualization of many projects. By bringing in many people and institutions which are out of the system, banks foster the amount of savings in a country and thus, the savings support the capital accumulation and provide economic growth and employment via credit mechanism. The global Subprime Mortgage Crisis of 2008 revealed the fact that financial markets are very important both for countries and international markets. Since the crisis, almost all countries have increased controls and taken new measures. That is why the relationship between the banking industry and economic growth is becoming more and more important every day. The effect of the banking industry on economic performance varies from country to country. Some researchers claim that the development of the banking industry encourages economic growth and some others claim that economic growth encourages the development of the banking industry (Turgut & Ertay, 2016). Either way, there is certainly interaction between economic growth and the banking industry because crises affect both economic growth and the banking industry negatively and a strong structure of the banking industry helps economic growth.

Since banks are selective while giving credit for the firms to use social savings, they provide the effective distribution of savings and provoke economic growth. Thus, they encourage productivity and technological advances. Capital accumulation is one of the key factors of economic growth. Banks increase local savings and attract foreign capital and this is another way they provoke economic growth (Beck, et. al., 1999). The limited capital accumulation especially in the developing countries poses an obstacle in governments' efforts for economic growth. Therefore, the savings that are to create capital accumulation must be transferred via credits to the sectors that are to provoke economic growth. Also, in developing countries, the banking industry helps to overcome the problems caused by the weaknesses in the corporate structure. While carrying out their financial intermediation activities, banks make an effort to transfer the capital they hold to more efficient fields. In this context, banks turn towards the selection of stronger businesses in terms of corporate structure, and thus, they can increase

investments by providing the effective transformation of the capital (Turgut & Ertay, 2016). In the relevant literature, there are many detailed studies about the relationship between the banking industry and economic growth. Almost all of them found an important positive relationship between the two.

1.1.2. Development and Use of Banking Products

In ancient times, banking activities started with the lending function only. Today, there are numerous banking products and services. In the renaissance era, the accounting system was developed. This was a milestone on the way to the establishment of companies and banks.

As the geographical discoveries started mainly by England, France, Spain, Portugal, and the Netherlands, the need for insurance and banking arose. Subsequently, the first group of modern banks was established in the 17th century (namely Bank of Amsterdam – 1609, Bank of Venice – 1637, Bank of England – 1654) (Öcal & Çolak, 1999). After the industrial revolution and the foundation of many corporations especially in the developed countries of the time, the banking activities started to change and they started to diversify. Until the 19th century, banks used to lend money by using their equity capital and carry out a limited number of banking activities. From the 19th century, they started to make companies utilize resources by collecting deposits, discounting bills, and mediating capital market exports. These developments increased the importance of banks in economies. On the other hand, banks started to specialize according to their activities (O'Hanlon & Rocha, 1993).

After the Stock Market Crash of 1929, many companies went bankrupt in the USA and the crisis affected the whole world. World War II destroyed most of Europe and some other countries in the world. After these incidents that changed the course of history, development and investment banks were founded to rebuild cities, companies, and countries. After the oil crisis of the1970s, petroleum exporting countries deposited their surplus in banks and banks underwent changes

and introduced innovations. This process made banks introduce new products and new financing techniques. In the 1980s, computer technology became widespread and throughout the 90s, internet banking and electronic banking products were launched (O'Hanlon & Rocha, 1993). In the 2000s, all kinds of banking products started to diversify and increase in number.

There are plenty of kinds of personal banking products. The two most common banking products are credit cards and personal loans. Other banking products are insurance products, deposit products, bill payments, investment products such as bills, bonds, and stocks, international money transfer service, and safe deposit box (Yılmaz, 2000).

Personal loans are given as cash, vehicle, housing, workplace, holiday, education, and decoration credits. Banks cooperate with certain firms and mediate bill payments with certain commission rates. Personal loans enable banks to spread risks, which is one of the main goals of the banking system and also widen their financial volume. Thus, credit risk is spread to consumers, who makes a great number of regular payments and provides monthly cash flow, instead of a limited number of corporate customers (Inal, 2002).

As the other main banking product, the credit card has some advantages both for consumers and the economy. For consumers, credit cards make the consumer earn points and rewards. They also allow cheap or even interest-free borrowing and secure payments. For the economy, it also has advantages such as avoiding transactions without documents, invigorating the economy and avoiding the informal economy and employment (https://www.thebalance.com/pros-and-cons-of-credit-cards-960222; Access date: 31.08.2020).

Another common product of banks is the accounts. Accounts are the resources that banks collect from people by paying interest rates and/or exchange difference. By doing so, banks accept funds from people who have passive funds and provide funds to the ones who need funds by buying securities or selling

credits (Kondak, 1998). This cycle is very important for banks as it functions as a lifeline for them.

Accounts have varieties. A checking account denotes the money of a person deposited in the bank and is mostly used for everyday spending. A savings account, on the other hand, is a more stable and longer-term account that gains interest. A certificate of deposit is a kind of bank account that the consumer promises to keep his/her money for a certain period. A debit card is a card with which the consumer spends straight from his/her checking account with a swipe and with a PIN in most places (https://www.capitalone.com/bank/money-management/banking-basics/banking-products-and-services/; Access date: 31.08.2020).

To render services, banks use certain devices, places, and platforms. Pos machines and ATMs are examples of devices, branches are the places, and online and mobile banking are the platforms.

Banking products are explained in detail below. Since they are rapidly developing products in the last couple of decades thanks to digitalization and internet technologies, they deserve to be explained in detail.

1.2. Technology Use In Banking

This section is about technology use in banking. Traditional banking products are limited; however, technology has changed the rules of the game. Especially in the last two decades, digitalization and the Internet have opened new horizons for the banking industry just like other industries. Computer technology has been used extensively for the last forty years but computer technology was used generally inside the banks and branches; banks did not launch many innovative products until internet technology and digitalization.

1.2.1. Electronic Fund Transfer (EFT)

Electronic Fund Transfer (EFT) is a fast and secure way to transfer money around the world. Chawla and Singhal (2010) defined EFT as "the movement of an amount of money from a customer's bank to another person's bank account by electronic means". EFTs include customer category and debit/credit transfer category. The subcategories of customer category are non-consumer-activated EFT and consumer-activated EFT. The bank activates the payment in the non-consumer-activated EFT (wholesale EFT) by a credit transfer or a direct debit transfer. The customer-activated EFT, on the other hand, is activated by the customer by a debit transfer (Chawla & Singhal, 2010).

In the non-consumer-activated EFT, the payment is activated by the bank via a large fund transfer system. Whereas a consumer-activated EFT (retail EFT) is activated by the customer as a debit transfer generally by small amounts and the EFT is initiated by mobile phone, internet payment, or a card. Every consumer-activated EFT is based on a contract (Chawla & Singhal, 2010). These contracts confirm that the legal basis is very important for banks.

Credit transfer, which is the second main category of EFT, is the transfer of funds from the payer's bank account to the payee's bank account. The payer initiates the credit transfer with a payment order. When the payment is received, the amount is debited from the payer's bank account and credited to the payee's bank account. Conversely, a debit transfer can be initiated both by the payer and the payee. In that case, the payee asks his/her bank to send a request to the payer's bank to send the funds. An example of the debit transfer that is initiated by the payer is a cheque. After the request, the amount is temporarily transferred to the payee's account and the payee's bank forwards the orders to the payer's bank. At the final stage, the amount is deducted from the payer's account and the transfer becomes irreversible (Abdullah, 2014). The EFT system is designed to protect the bank, payer, and payee from conflicts, fraud, and unpredicted costs.

There are some security, privacy, and confidentiality issues regarding the EFT system. The information about an EFT transaction should be kept secret to third persons to avoid the misuse of the information of the users and/or unauthorized or illegal access to the transaction. There are legal gaps in EFT.

The vulnerable aspects of EFT can be expressed as follows (Abdullah, 2014):

- EFT data are economically valuable and therefore they can be used to destroy banks for different purposes such as terrorism, maliciousness, fraud, etc.,
- Unauthorized access to EFT transactions is possible because customers are directly involved in the system,
- The authorities can remove funds from the customer's bank account without notice,
- The legislation in many countries is not sufficient about crimes concerning EFT.

Since EFT is a financial tool with funds and data, both should be protected from misuse, loss, and theft. This protection is important for the customer and the bank because the reputation of the bank affects the banking industry and thus the economy of a country as a whole (Jain, 2019). If required by law or the authorities, banks disclose the personal and financial information of their customers. Under normal conditions, however, they are obliged to protect these data.

For EFTs to be secure, general suggestions can be made as follows (https://www.princeton.edu/~ota/disk3/1982/8223/822307.PDF; Access date: 01.09.2020):

- Institutional computers should be physically well-secured,
- The technologies that provide security against unauthorized access to relevant data should be adopted,
- The data should be encrypted properly for transmission and storage,
- The backup system should ensure the security of the data.

EFT is an important tool and product of banks and its use has increased in the pandemic period. This is an indicator that EFT will preserve its importance for many years until new technologies are introduced.

1.2.2. Automated Teller Machine (ATM)

Automated Teller Machine (ATM) is a computerized telecommunications device that serves the customers of banks and presents them the possibility to make financial transactions in a public space without the need for a bank teller. By using a card (debit or credit), bank customers can withdraw or deposit funds, make payments, check balances, or obtain account information without waiting in the line (Ebiringa, 2010). ATMs are the service points of banks in almost all neighborhoods in big cities worldwide.

The ATM was introduced in England in 1967. In Turkey, the ATM was introduced in 1982. In 1970, the technology that enabled the storage of a personal identification number (PIN) on bank cards was introduced. In 1977, ATMs were introduced that allowed financial institutions to serve 24/7. By 1984, there were 100,000 ATMs installed. As of 2020, there are 3 million ATMs in the world (https://www.ncr.com/company/blogs/financial/history-atm-innovation; Access date: 01.09.2020).

There are many advantages of ATMs for banks and customers. The major advantages of ATMs are as follows (Kalaiselvi & Chitra, 2020):

- Withdrawing money,
- Checking the balance and obtaining account information,
- Round the clock services: 24/7 banking services 365 days a year,
- Access to bank from anywhere in the world,
- Expansion of services of banks to any corner of the world.

There are also some disadvantages or some risks involved with ATMs (Kalaiselvi & Chitra, 2020):

- If a problem occurs, the customer cannot withdraw money,
- ATMs are open to hacks or observations of evil-minded people for stealing customers' information and using their cards,
- ATMs rarely exist in rural areas; they are mostly unavailable in those areas,
- Limited cash withdrawal,
- A cash deposit may be problematic due to technical problems,
- Loss of personal touch with the banks,
- Possibility of misusing the ATM card.

In the COVID-19 pandemic period, ATMs have another disadvantage of the risk of contamination. To avoid or at least minimize it, banks try to keep ATMs clean and disinfected and people try to pay attention. The ATMs of many banks in the world now has the "contact-free withdrawal" feature. Apart from the pandemic time, ATMs have always been risky places in terms of bacteria. There are studies about the types of bacteria found on ATMs (ex. Okunye, et.al., 2020).

There are many types of attacks against ATMs. In recent years, criminals started to be more interested in ATMs, and just like the banks, they use technology as well. The attacks of criminals include skimming, shoulder surfing, card cloning, shimming, card swapping, etc. To avoid these problems and enhance security, banks are using some methods. Many banks have initiated a two-tier authentication process. The consumer enters his/her PIN and then receives a one-time password to his/her mobile (Ansar, et.al., 2020). Some banks ask personal questions instead of the one-time password. However, in addition to all the security measures, the consumer should also be careful.

Although internet banking is more popular than ever, it seems like ATMs will be a part of our lives for a long time. On the other hand, as banks' branches continue

to close and banks downsize in terms of branches (as a trend accelerated by the COVID-19 crisis), their need to utilize ATMs increases.

1.2.3. Bank Cards and Credit Cards

Credit cards and bank cards (debit cards) have been used for a long time by consumers. Credit cards and bank cards are cards that are produced under the name of a brand by financial institutions that are members of a bankcard association (Mastercard and Visa) or by individual financial institutions. The features of the card including its credit limit of a bank card or a credit card are determined by the company, not by Mastercard or Visa. Some bank and credit cards are limited to the issuer's retail stores (ex. credit cards of stores) and thus, their functions are limited (Foscht, et.al., 2010). Mastercard and Visa are the issuers of the cards; they have nothing to do with the features specific to the bank or the customer.

Credit cards are a payment instrument that enables the buyer to buy a product or service instantly even if the buyer does not have any cash with him/her. The buyer can do this because a financial institution gives a certain amount of credit to him/her. When the buyer uses the credit card, he/she guarantees that he/she will pay the amount back completely in a certain period without interest (grace period) or in installments over time with interest. The feature that attracts most credit card users is that it gives the buyer the chance to buy a product or service immediately but does not require cash instantly (Foscht, et.al., 2010).

Credit cards contain a deeper meaning than being a simple payment tool. Credit card usage involves a great number of different features and motivations. These motivations include transactions, debts, loans, consumer benefits, etc. Another characteristic that makes credit cards a complicated financial instrument is that it involves a large number of prices such as annual fees, interest rates, grace periods, penalty fees, etc. These features and the related services are given by a

variety of different card providers and these providers are banks and non-bank institutions. Moreover, credit card markets are affected by consumer decisions and therefore, consumer behavior and rationality play a much greater role in this market compared to other financial markets (Scholnick et.al., 2008).

Credit cards can also become a tricky and problematic financial instrument for many consumers especially at times of an economic crisis. When a consumer has a small income and a large amount of credit card debt, he/she can afford only the minimum required amount every month. This situation not only makes the consumer pay a big amount of interest rate every year but also gets into a vicious cycle which can take the consumer to personal bankruptcy.

There is also another type of credit card which is known as charge cards. It is issued by certain firms (ex. American Express). Like a credit card owner, the owner of a charge card also does not need cash to make a purchase. However, the customer has to make the full payment on the due date. Recently, charge cards have started to have the feature of allowing customers to pay the debt over time with interest (Foscht, et.al., 2010). This takes charge cards closer to credit cards.

Bank cards (debit cards), on the other hand, requires the customer to have money or credit attached to the account in his/her account to be able to make a purchase. The main advantage of a bank card is that the buyer does not have to use cash for transactions. The amount spent is instantly deducted from the customer's account and this feature protects the customer from spending more than the amount that is in his/her account. Nevertheless, a service fee may be charged from the customer (Foscht, et.al., 2010).

1.2.4. Telephone Banking

Telephone banking allows the customers of financial institutions remote access to their accounts by telephone from everywhere. Most of these services partially

contain automated messages. When the customer calls the bank, he/she hears an automatic message. Then the customer is invited to react using the keys on his/her telephone keypad or his/her voice. The reaction type depends on service design. Furthermore, banks have started to give an increasing number of fully automated services. Thus, customers do not need to speak to a human agent anymore. These services are given 24/7 and include balance checks and fund transfers (Gunson, et.al., 2011). These services are diverse and therefore important for bank customers.

Internet banking is a rapidly growing area but telephone banking still plays an important role among the services of banks. Generally, banks encourage their customers to get service, not from a human agent but using different digital channels. Telephone banking is one of the major banking channels. The other three are branch banking, ATM, and internet banking. Telephone banking is a less costly and more easily accessible alternative compared to ATMs and internet banking (Anwer, et.al., 2016).

There are some security issues with telephone banking. Telephone banking is vulnerable to theft because PINs and passcodes, which telephone banking frequently uses, are the weakest credentials for the security of a remote system. Sometimes, security questions are easy to predict or search for. Moreover, both speakers (i.e. the customer and the agent) have no idea who is at the other end. It is also sometimes hard for customers to remember their PINs or passcodes when they have multiple ones. Customers mostly use the same PIN for many platforms to easily remember it but that creates a security problem (Anwer, et.al., 2016).

To ensure the security of caller authentication, banks have started using voice biometrics. Voiceprint is converted to a string consisting of numbers and symbols. This string is not accessible by hackers. Since security is vital in the banking industry, a voiceprint is a very strong security tool because everybody's voice is unique just like a fingerprint.

Telephone banking is also used for direct marketing by banks. Banks call customers to sell their various products or services like credit cards, insurance policies, loans, etc. It is important to call the right customer to avoid unnecessary costs and inconvenience of customers. Thus, banks use data mining to market the right product to the right customer (Akçetin and Çelik, 2015).

1.2.5. Internet Banking

Internet banking (also known as electronic banking or online banking) is a portal through which customers can use various banking services such as making bill payments, online transfers, and investments. By Internet banking, banks take the advantage of enhanced customer service and reduced costs. Customers can reach many banking activities from anywhere anytime with low handling costs. Thus, unlike conventional banking, Internet banking allows customers to interact with a website rather than an agent and makes the banking system less costly. Internet banking also enables better relations with customers. Since every bank is giving Internet banking services, there is intense competition in the field. Therefore, banks try to offer high-quality services on the Internet to gain a competitive advantage (Raza, et.al., 2020). Banks add more quality and features to their Internet banking services every day.

Customers have access to Internet banking services via PCs, notebook PCs, and mobile devices. Customers can use Internet banking without buying any software device and they do not need to download, store, or backup data because all information is stored at the bank terminal. However, if the Internet banking private information of customers is hacked then the rights and interests of customers will be endangered. Thus, Internet banking should offer customers a safe and convenient environment (Lin et.al., 2020). Banks are in a continuous defensive fight against cyber-attacks.

Internet banking started in the 1990s in the USA when Internet banking services such as making and viewing transactions and bill payments were expected to become widespread rapidly. However, things did not develop that way. The growth rate of Internet banking was slow for another decade. Initially, the proportion of customers using Internet banking was low because many of them did not find it secure, did not know how to use it, and did not want to spend time to learn it. In recent years, it has become the standard practice offered by all banks (Ngugi et.al., 2019).

Internet banking not only benefits individual customers by SMEs and big companies as well. There may be certain incentives to make people use Internet banking more. More Internet content may be offered, the Internet connection can be provided in more places, cities, towns, and rural areas, Internet training can be encouraged, a positive attitude can be promoted for the use of technology, financial service conditions can be enhanced, awareness about Internet banking can be created/raised, open-minded business culture can be created, and effective laws of Internet banking can come into force (Gorowara, 2020).

The major factors that affect customer satisfaction in Internet banking are responsiveness, service quality, perceived value, cost-effectiveness, ease of use, convenience, brand perception, security/assurance, and problem handling (Babu & Shamshuddin, 2020). Banks try to offer these features to their individual and commercial customers. These features are requested by all customers.

1.2.6. Mobile Banking

With the development of smartphones and other mobile devices, mobile banking has become widespread and a daily tool for bank customers. According to the data of The Banks Association of Turkey, there are 83 million mobile banking customers in Turkey as of 2020. This is a number equal to the population of Turkey. 52.5 million of these people logged in at least once in the January-March

2020 period (https://www.tbb.org.tr/Content/Upload/istatistikiraporlar/ekler/1289/Dijital-Internet-Mobil_Bankacilik_Istatistikleri-Mart_2020.pdf; access date 15.10.2020). There are an estimated 2 billion mobile banking users in the world. Various studies reveal that the factors that limit mobile banking adaptation are trust, security, perceived financial costs, perceived risk, computer and technology skills, a relative advantage that is perceived at a low level, complexity, and need for interaction. These factors should be understood by banks and problems perceived by customers should be solved (Doğan and Burucuoğlu, 2018). A study in Bangladesh reveals that the primary dimensions influencing the adoption of mobile banking are convenience, the handset operability, and security. The secondary dimensions are cost, reliability, network procedure, confidentiality, and knowledge (Deb, et.al., 2011). As the perception of quality is directly linked to the expectations of customers, these expectations should be met in mobile banking for the sense of quality and for retaining customers.

Researching the factors that facilitate and limit the adaptation of mobile banking plays an important role in explaining consumer behaviors in mobile banking. In addition to researches for these factors, customers' service quality perceptions and satisfaction levels can be studied as well so that these studies help the development of mobile banking services (Doğan and Burucuoğlu, 2018).

In today's intense competition environment, it is important to retain customers for banks. Customers want to reach banking services from their mobile devices more than ever. Customers want speed and easy access from anywhere, anytime. They mostly do not want to go to branches unless necessary, they accept new electronic channels quicker and they demand customized services (Doğan and Burucuoğlu, 2018).

Mobile banking is the service offered by a telecommunications company or a mobile network company (Doğan and Burucuoğlu, 2018). Mobil banking is the

channel in which customers interact with banks with mobile devices such as mobile phones or personal digital assistants (PDSs) (Barnes & Corbitt, 2003). Mobile banking is about providing financial information, communicating with the bank and checking account balances, transferring money, and having access to other banking products and services by using mobile devices at any time, from anywhere (Aboelmaged & Gebba, 2013). Mobile banking has brought mobility in its fullest sense allowing customers to make their transactions using mobile phones or other mobile devices without going to branches or going online via computers (Mohammadi, 2015).

Some customers do not see mobile banking as an alternative to branch banking but as a complement to it. To exploit the potential opportunities for mobile banking and achieve success in competition, banks can educate their customers regarding the benefits of mobile banking and improve the quality of their services. Understanding and maintaining service quality consist of the antecedents of customer satisfaction. If the managers and strategists of banks also consider the rate of market penetration of their mobile banking services then they can create effective marketing strategies and exploit potential opportunities (Sagib & Zapan, 2014).

1.2.6.1. Benefits of Mobile Banking for Banks

There are certain advantages of mobile banking for banks. These benefits have different dimensions for banks such as increasing revenue, reducing costs, increasing customer satisfaction, and enhancing the bank's image for having a prestigious product (Tiwari, et.al., 2006).

Tiwari et. al. (2006) categorize mobile banking services as mobile accounting, mobile brokerage, and mobile financial information services. Mobile accounting consists of banking services via mobile communication devices that are specific to a particular account (ex. Card management and remittance facilities). This type

of service is not based on information. Mobile brokerage is about buying and selling of financial instruments (ex. Stocks, bonds, and derivatives). Mobile financial information services are not based on transactions but on the information. The information may be about the person's bank account(s) or market developments (Tiwari, et.al., 2006).

1.2.6.1.1. Managing High Volume Transactions

Mobile banking can serve as a source of revenue for banks. Banks can offer premium mobile services so that they maintain customer satisfaction, even can attract new customers (Tiwari, et.al., 2006). By mobile banking, banks can access a broader customer base with a higher profit per person (Asfour & Haddad, 2014).

With mobile banking, banks also have the opportunity to cross-sell. This is an important factor to increase revenue. Banks also can strengthen the bank-customer relationship (Mullan et.al., 2017). These factors are also thought to provide higher volume transactions.

Banks can target customers better and offer personalized services. This makes banks target customers more effectively and achieve better results which enable higher volume transactions (Goyal et.al., 2012).

1.2.6.1.2. Reducing Distribution Cost

Banks can reduce their distribution costs by mobile banking. Mobile banking adds to the number of a bank's distribution channels and therefore provides a potential competitive advantage. Therefore, mobile banking can contribute to a bank's business by increasing its sales volume mainly by stimulating demand (Tiwari, et.al., 2006). In developing countries, mobile banking can be a primary

distribution channel for banks and have an influence on economic development and increase financial inclusion (Agwu & Carter, 2014).

1.2.6.1.3. Increasing Customer Satisfaction

Most bank customers today love to use technology. They want to organize their bank transactions and gather information about their transactions and services offered without a limit of time and space. Banks are reacting to this demand by mobile banking services. Banks also want to attract younger generations as they are their prospective customers (Tiwari, et.al., 2006).

Leon et.al. (2020) found that the service quality of a mobile banking application has a positive and significant impact on customer satisfaction. Many studies reveal this fact. Examples of this kind of study are Tung (2004), Kim et.al. (2004), and Turel and Serenko (2009).

Goyal et.al. (2012) indicate that banks inform their customers via mobile banking. For instance, customers are transiently informed about how much they have spent that month. That increases customer satisfaction.

1.2.6.1.4. Having a Prestigious Product

Mobile banking can be used as a prestigious product to gain strategic advantages. A bank can gain or maintain a positive image in the society and enhance its brand image of being innovative and visionary. Also, the bank can utilize the first-mover advantage by shaping technological standards (Tiwari, et.al., 2006).

1.2.6.2. Benefits of Mobile Banking for Users

Mobile banking has certain advantages for customers. Billions of mobile banking customers in the world are a good indicator of this. Chandran (2014) states these advantages as follows:

- Time-saving: Mobile banking is time-saving since the customer does not have to go to a branch or ATM. By using a mobile device, the customer can make his/her transactions, check account balances, and organize his/her accounts.
- Convenient: The customer can use mobile banking from anywhere, at any time. The customer does not have to wait in queues and can choose the right time and place.
- Secure: Good mobile apps generally provide security. These apps send a verification code to the customer's mobile phone or device by SMS. The customer then logs into his/her account. For many customers, mobile banking is even more secure than internet banking.
- Easy access to the customer's finances: The customer can have access to his/her financial information outside the working hours as well. The customer then has the option to have access to services beyond mobile banking by calling the bank.
- Increased efficiency: Mobile banking features are functional, efficient, and competitive. Mobile banking increases efficiency by also decongesting branches. Paperwork is also reduced.
- Fraud reduction: Customers have real-time control over their accounts.
- Connection advantage: The mobile banking system utilizes the connection infrastructure of the mobile operators and therefore does not require internet connection.
- Service variety: Customers can reach many services except cash withdrawal such as paying bills, transferring money, locating ATMs, etc.

- The advantage for rural areas: Most mobile phone owners in the rural areas can access to their accounts, organize their financial moves, and gather relevant information.

Sampaio et.al. (2017) also state the benefits of mobile banking for customers. They indicate that security is one benefit of mobile banking. It is the main feature that customers emphasize. Ease-of-use is another benefit for customers. Ease-of-use is a combination of the perception of the user and the service quality of the bank. The authors claim that ease-of-use is directly related to customer satisfaction. For the authors, convenience is another benefit for bank customers. Customers perceive mobile banking as a time-saving instrument that allows them to allow them to organize their banking transactions easily. Mobile banking uses mobile technology and therefore people from almost every country benefit from mobile banking including people from low-income countries.

Despite its advantages, there are some problems in mobile banking for customers such as security issues, network availability, heavy charges, identity theft, inadequate guidance, etc. (Chandran, 2014).

CHAPTER 2

BANKING INDUSTRY IN TURKEY: TECHNOLOGY AND CUSTOMERS

The banking industry in Turkey goes back to the Ottoman Empire. The republic of Turkey today has a modern banking sector that is integrated with the world. This, on the other hand, does not mean that the banking sector in Turkey had no crises or turmoil. Some periods of the Ottoman times and the republic times have been complex and with ups and downs. This chapter discusses the Turkish banking sector with its history, new technologies, and types of customers.

2.1. History of Turkish Banking Industry

Banking in Turkey started in Ottoman times. The banking sector in the Ottoman Empire could not develop like in Europe because the empire missed the Industrial Revolution. Moreover, the problematic economy of the empire in the 18th, 19th, and 20th centuries which was dependent on a great amount of debt also prevented a healthy development of a banking sector (Akgüç, 1992).

Since the interest rate is considered a sin in Islam, the Turkish citizens of the empire had occupations like soldier, manager, and bureaucrat, and the occupations dealing with money, loans, and interest rate were performed by the Greek, Jewish, and Armenian citizens of the empire. The moneylending profession developed since the middle ages in the Ottoman Empire. The profession was mostly performed by minorities in the empire. They were later called bankers. Their tasks were to exchange foreign currencies Ottoman money, lend money to the state, etc. (Yazgan, 1973).

From the 18th century, the empire's financial condition started to deteriorate. This caused a rise in the importance of bankers. With their good relationships with the financial environments in Europe, the bankers found short-term debts for the

Ottoman Empire. These bankers replaced the French merchants after the French Revolution and specialized in money and credit business in Istanbul. They established international relationships and became big capitalists. Bankers organized the tax collection process as well and took their commission from the income. Also, many bankers managed the personal fortunes and finances of Ottoman Sultans and high bureaucrats (Pamuk, 2003).

After the industrial revolution, the role of the bankers became more important because Europe saw the Ottoman Empire as an important market for standardized and mass-produced goods. The bankers were the natural agents of the Europeans and expanded their business volume (Pamuk, 2003).

In 1847, the first bank in the Ottoman Empire "Bank of Istanbul" was established by two bankers. Then the bank went bankrupt 5 years later. After the Crimean War, the Ottoman Bank was established in 1856 by the British headquartered in London. It is the first bank of issue in Turkey with the privilege of issuing banknotes. The French capital joined the bank in 1863. The incident started the period of foreign banks in the Ottoman Empire (Akgüç, 1992). At the time, the Ottoman Bank had the authority to audit the state budget, collect the income of the state, make the foreign and domestic payments of the state, and sell the stocks and bonds of the state. After World War I started, the bank did not export banknotes for the needs of the state. Therefore, the government removed the authority of the bank to export banknotes and authorities as a state bank and the National Bank started issuing banknotes (Ulutan, 1957).

In 1923, The Republic of Turkey was founded. Shortly after the incident, the government signed contracts with the Ottoman Bank which removed some of the privileges of the bank and imposed obligations. The Central Bank of Turkey was established in 1930. The Ottoman Bank, which was a foreign bank in the Ottoman Empire, functioned as the central bank for a long time. The Central

Bank of Turkey is the end of the foreign bank issuer period in the history of the Turkish economy.

In the second half of the 19th century, many foreign banks were established for various reasons. Since the privileges of the Ottoman Bank had limited the activity fields of the Galata bankers, they started to establish new banks with their capital or foreign capital. One was established in 1964 and survived almost 30 years (Artun, 1979).

The Civil War in the USA between 1861-1865 caused the British textile sector to experience a shortage of raw materials. In 1865, a British bank was founded that aimed to supply raw materials to the British textile sector. For that purpose, the bank aimed to increase cotton production in the Ottoman Empire. The bank was closed a few years later (Artun, 1979).

The French bank Société Générale established another bank with the bankers in the 19th century. The bank played an important role in foreign borrowing. The bank joined the Ottoman Bank at the end of the century (Artun, 1979).

After the defeat of France in the Franco-German War of 1870 and the public infrastructure investments, a few banks were established with the Austrian, Italian, and Russian capital. Also, Germany became an important ally for the Ottoman Empire in those years. However, in the 1870s, the stock exchange crisis in Vienna and the termination of payments of the Ottoman Empire caused the small-scale banks to shut down (Ekren, 1986).

In 1881, The Ottoman Public Debt Administration was founded by the European countries to organize the debt payments of the Ottoman Empire. As the foreign capital started inspecting the debts of the empire, a more secure environment was created for foreign capital. The administration was established because the empire could not pay its foreign debts. The administration encouraged European investors. Many banks were founded in the country after 1881 (ex. Deutsche Bank in Izmir) (Yazgan, 1973). The establishment of the administration was a

milestone in the history of the Ottoman Empire since it started the process of the financial collapse of the empire.

The foreign banks established at the time financed the infrastructural investments or other investments of the foreign countries in the empire and served the minorities in the empire. A little proportion of the deposits in the empire was transferred to the government so a need arose for the establishment of national banks (Aksoy, 1998).

The first national bank in the Ottoman Empire was founded in 1863 in the town of Pirot (today's Bulgaria). Ordinary people constituted the capital of the bank. Some difficulties in the collection of the capital and the problems in the repayment of loans caused the government to raise agricultural taxes. The bank was reorganized as a modern financial institution of the time in 1888 and was named "Ziraat Bank". The second constitutional era began in 1908 in the empire. After that and World War I, the process of the establishment of national banks accelerated. The main reason for the movement of national banks was to take the capital away from foreigners and minority banks. They aimed to use the national capital to develop national commerce. Also, foreign banks had branches only in big cities. Therefore, national banks had to open and become widespread across the country (Artun, 1979).

Between the years 1909-1923, 21 national banks were established. Since the Ottoman Empire was not industrialized at the time, these banks were mainly banks giving trade and artisan loans, agriculture loans, real estate, and consumer loans. However, most of these banks could not bear the competition with foreign banks with far more capital power and closed down (Oksay, 2003).

The Republic of Turkey was founded in 1923. The new state was aware that national banks had to be established and they had to be supported by the

government. There were very few industrial plants in the country at the time (Aksoy, 1998).

The main purpose of the republic was to industrialize the country. The republic also aimed to increase agricultural production and accelerate economic development. In the first years of the republic, the foreign banks financed foreign trade. Izmir Economic Congress was held in 1923 to develop a national banking system that was to support economic development. The minister of economy gave the opening speech and said that Turkey would be colonized and could not sustain economic development if it did not establish a national banking system (Artun, 1979).

Iş Bank was founded as a private sector bank in 1924. The banks in France were taken as an example while establishing the bank. The birth of a new country required the presence of banking activities across the country, an incentive for industrial development, reviving national savings, financing basic economic breakthroughs, and the instruments to meet financial borrowings. Turkey also lacked innovative businesses and processes and skilled human resources (isbank.com.tr; access date: 28.10.2020).

In 1925, the Turkey Industry & Mine Bank was established. It was Turkey's first development bank. The bank's duties were to manage industrial enterprises until they were transferred to new enterprises, establish industry enterprises, mine or join the capitals of mines, give mid or long-term loans to private industry enterprises and perform all kinds of bank transactions (Küçük, 1980).

The participants of the Izmir Economic Congress requested Ziraat Bank to be strengthened. At the time, Ziraat Bank did not have the authority to carry out all the bank transactions. The bank only gave loans to farmers. As a bank established in the Ottoman era, the bank was given the corporation status and its authorities were expanded (TBB, 1998).

The real estate sector had also to be supported. To fulfill this need, the Real Estate and Orphanage Bank was founded in 1927. The bank aimed at the reconstruction of the country (Ekren, 1986).

Until the 1930s, the majority of the banks in Turkey were local banks with one branch. These banks met the needs of the merchants in an area. After branch banking and the Great Depression of 1929, these banks lost favor and went out of business (Ekren, 1986).

An important consideration of the administration of the new republic was issuing banknotes. Giving the issuing authority away to a private bank caused problems especially at the time of World War I so the administration started planning a national Central Bank. The relevant preparations started in the 1920s. However, problems about the balance of payments and other financial difficulties at home and limited external financing opportunities avoided the establishment of the Central Bank in the 1920s. The Great Depression of 1929 forced countries to expand their money supplies by using banknotes more extensively and abandon the gold stocking and exchange. The Central Bank of Turkey was established in 1930. The bank was granted autonomous status and the shares of the state were limited to 25% (Ulutan, 1957).

Despite the promotions of the government, the private sector could not leap forward in industrialization in the 1920s. To initiate industrialization extensively, the first five-year development plan was made in 1934. To finance and physically establish factories, Sümerbank was founded in 1933. Sümerbank took over many partnerships and also joined many partnerships to support the industrialization efforts of the country. Subsequently, Sümerbank put many factories into operation in various sectors including leather and shoes, chemicals, cotton weaving, wool weaving, soil and ceramic, paper, and iron and steel (sumerholding.gov.tr; access date: 29.10.2020).

As the complements of the above-mentioned state policy, a few more state banks were established in the 1930s. One of these banks aimed to support the public services in cities and towns, construction of facilities, and help the realization of city development plans. Another bank was founded aiming to actualize, build and support electrification and mining in Turkey. Also, a bank was founded in 1937 to support maritime lines and the relevant institutions. The young republic had the policy to support and increase the number of craftsmen and artisans. For this purpose, Halkbank was established (Ulutan, 1957).

To avoid usury, the government introduced a law limiting interest rates. Another law was introduced to protect deposits and the required reserve was made obligatory for banks (Ertuğrul & Zaim, 1996).

After World War II, the state decided to give serious support to the private sector and accelerate economic development. Turkey was a neutral country in World War II and inflation and speculation environment of those years, a wealthy class emerged in trade and agriculture. As the USA emerged as a superpower after World War II, Turkey decided to take sides with the USA. As a result of the policy to support the private sector and the increasing need for money and loans in the economy, many private banks were established between 1944 and 1959. Also, The Industrial Development Bank was founded in 1950 (Artun, 1979). In 1950, a more liberal government came to power. In the meantime, branch banking became widespread (Oksay, 2003).

In 1958, The Banks Association of Turkey, which is the regulatory body, was founded (Oksay, 2003). In 1960, The Bank Liquidation Fund was established in the presence of the Central Bank. Banks were obliged to put the thousandth of their total saving and commercial deposits. The fund aimed to close the financial gap of the banks which were decided to be liquidated. This fund later became The Saving Deposit Insurance Fund. The total number of banks in Turkey was limited at the time and banks concentrated on branch banking (Akgüç, 1992).

The Export Credit Bank of Turkey (Eximbank) was founded in 1964. The bank aimed to meet the medium- and long-term credit needs of the Public Economic Enterprises. The bank was reorganized in 1987. Then, the aims of the bank were diversified. The Turkish Eximbank intends to develop exports, diversify the exported goods and services, gaining new markets for the export articles, increase the share of Turkish exporters in the international trade, supporting them for their enterprises, providing competitive power and guarantee for exporters, Turkish contractors abroad and investors in international markets, and supporting and encouraging the production and sales of investment goods that are intended to be exported. To contribute to balanced and healthy export policies that are open to international competition, The Turkish Eximbank achieves its purposes by:

- Giving loans for fulfilling the needs and providing competitive power,
- Making more domestic and foreign finance companies participate in the financing of these activities,
- Insuring the receivables resultant of the exporting of goods and services against commercial and political risks (Eximbank.gov.tr; access date 29.10.2020).

In the 1970s, most private trade banks became holding banks. In such a case, an industry or trade capital group owns an important portion of the capital of a bank. By thinking that it would accelerate the private sector investments, holding banking was encouraged by the state at the time with tax exemptions and various privileges (Oksay, 2003).

1980 is an important date for the Turkish economy. On 24 January 1980, a stabilization program was initiated. The program aimed at economic and financial liberalization and international expansion. Within the scope of the program, new domestic and foreign banks were allowed to operate. As a result, 24 new domestic banks and 16 foreign banks were opened in the 1980-1994 period. This state accelerated competition in the banking sector. Turkish banks opened

branches in foreign countries or purchased foreign banks and thus kept up with the international expansion principle of the program. Meanwhile, after 1980, the high inflation rate in Turkey, relatively low interest rates, and lack of alternative financial instruments caused bankers to appear. These bankers collected money free from all kinds of inspection and risk management. Then they started lending the money. There were no criteria for operating as a banker. While banks could charge a certain maximum interest rate, bankers did not have to obey that rule. That state created unfair competition. The huge amount of money collected by bankers created a kind of Ponzi Scheme which the bankers could not handle anymore. After the public authority gave messages about the depositor to the bankers that they were gambling, the trust in the bankers collapsed and a mass withdrawal rush started. This caused the bankers to go bankrupt rapidly at the end of the year 1981. Subsequently, five banks went bankrupt as well. The Central Bank of Turkey avoided a system crisis by using its "lender of last resort" function. Since the firms of the bankers and the bankrupt banks were of small size, the negative effects of the crisis were limited as compared to the economy as a whole. After the crisis, the Capital Markets Board was established. Also, to avoid such liquidity problems in the future and protect depositors, a saving deposit insurance fund was created in 1983 (Uluyol, 2019).

The first step of liberalization in the Turkish economy started on 24 January 1980 with the decisions. The decisions freed interest rates. The banking sector then reached instrument abundance with a more liberal economy. Flexible exchange rates and positive real interest rates started and regulations for liberalizing and deepening of financial markets (Korukçu, 1998).

In the 1980s, the Turkish banking sector developed rapidly with legal, structural and corporate changes and developments. After 1980, the Turkish government started to encourage and support export-focused manufacturing. The positive interest rates charged aimed to increase savings. Banks were authorized to open foreign currency accounts. Banks were also allowed to hold foreign currency

positions. This aimed to increase foreign currency reserves, encourage the entrance of foreign currency to the country, and provide the transfer of the foreign currency, which had been kept outside the banking system, to the banks. The Interbank market became operational as well (Bulut, 2015).

In 1985, a banking law came into force in Turkey. Under this law, an international auditing system and banking standards were introduced to the system. Moreover, the system of a uniform chart of accounts was introduced, balance sheets were subjected to external auditing, and a deposit insurance fund was established. Istanbul Stock Exchange was established. The Central Bank started open market operations in 1987. In 1988, the foreign currency market was founded. In 1989, foreign currency transactions capital movements were liberated. With a government order published in the Turkish Official Gazette, the amount limits of foreign capital were removed, foreign exchange import to Turkey was freed, Turkish citizens were allowed to hold foreign currencies, open bank accounts, buy foreign currencies, and foreigners were allowed to make purchases in capital markets. Also, the convertibility of the Turkish Lira (TRY) was confirmed by the IMF. The regulations regarding the foreign exchange regime were then completed. Aiming to increase the predictability and decrease the uncertainties in financial markets, the Central Bank introduced its monetary policy and started its application. In 1992, the electronic fund transfer (EFT) system was initiated. In the same period, many goods and services such as ATMs, home and office banking services, consumer credits, and credit cards were introduced (Keskin, 1993).

1994 crisis was a milestone in the Turkish economy. The path taking the country to a deep crisis started with the government's decision to choose domestic borrowings instead of foreign borrowings and taxes. In that period, the government's exploited this method and borrowed with extremely high interest rates. This reached such a state that 50% of the profit of the top 500 Turkish companies, of which the main function was to manufacture, consisted of the

income from the government in 1994. This rate was 88% in 1999. Thus, the industrial progress of Turkey was relinquished. Subsequently, short-term financial capital, in other words, "hot money", started coming to the country. The tools of these transactions were treasury notes and government bonds. Banks mediated these transactions and the treasury notes and government bonds with high interest rates pushed banks to make easy money. Since banks used their resources in such operations, their loan volumes contracted. Therefore, the open positions of banks enlarged. These developments caused the Central Bank to lose its opportunity to use the foreign exchange, quotation, and interest rates as political tools and it became an institution that just manages foreign exchange reserves. The national Turkish finance markets became dependent on speculative foreign capital movements and they were taken to an area of capitalism that included making money from money. The high amount of capital entering the country caused the increase of public deficits, an increase of the value of the Turkish Lira against the foreign currencies, an increase of interest rates, and expansion of money supply and thus creating macroeconomic imbalance. This imbalance caused the crisis. Some structural problems contributed to the expansion of the money supply. No regulations were introduced to decrease capital entrance or extension (Yentürk, 2003).

In addition to these developments, governments insisted on lowering interest rates in that period. Credit rating agencies decreased the credit score of Turkey. This increased the demand for foreign currencies. The interventions to meet the demand for foreign currencies melted the Central Bank's exchange reserves and led to an inevitable devaluation. The banking system became vulnerable to a crisis in any bank in the system (Yentürk, 2003).

The 1994 crisis had dramatic consequences such as the quick downsizing of the banking system. The banks lost a remarkable portion of their equities (about 35%). After the crisis, important regulations that shaped the banking sector came into force. All the deposits were guaranteed, liquidity requirements were

introduced for an important portion of the resources apart from deposits, and repurchase agreements were included in a legal framework. In 1995, banks were required to limit their open positions to 50% of their capital bases (Seymen & Seymen, 1996).

Turkey signed a Stand-By Arrangement with the IMF in 1998. The arrangement included solutions to main macro problems, regulations for more control in the financial sector, and the tax law draft to become a law. In 1999, the banking law entered into force. (https://www.tbmm.gov.tr/tutanaklar/KANUNLAR_KARARLAR/kanuntbmmc083/kanuntbmmc083/kanuntbmmc08304389.pdf). The law included articles regarding the following subjects:

- The Turkish Banking Regulation and Supervision Agency was established,
- The minimum capital requirements of banks were increased,
- The procedures and principles regarding the measurement and evaluation of capital requirements were changed,
- The application of general reserve started for bank loans,
- Special reserves for loans with difficulty in the collection were regulated,
- The precautions to be taken about the banks with a disrupted financial structure were determined,
- The criminal and personal liabilities of bank owners exploiting the bank resources and bank managers who made unlawful transactions were determined and the relevant penalties were made deterrent,
- Administrative fines entered into force.

As a result of extensive debates on public opinion in Turkey, amendments were made to the law above at the end of 1999. According to the amendments, sentences regarding the bank loans were aligned with the EU directives and the process from the establishment of banks until liquidation became under the

authorization of the Turkish Banking Regulation and Supervision Agency (Peçen, 1999).

This period denotes the privatization of certain state banks such as Etibank. The banking activities part of Etibank was divided into three as Etibank, Denizbank, and Anadolu Bank. The government sold the royalties of these banks. Also, in this period, some banks passed into other hands, some changed names, and some foreign banks were purchased by Turkish groups (Uyar, 2003).

The overvaluation of USD in Turkey especially in the second half of the 1990s put the banks, which had huge amounts of open positions, in a very difficult position and caused them to experience difficulty repaying. This problem of the banking sector in Turkey caused the economic crises of 2000 and 2001 which were mostly related to banks. After these incidents, some banks were transferred to the Saving Deposit Insurance Fund in Turkey (Günal, 2001).

After the 2001 crisis, foreign capital showed more interest in investing in Turkey. Especially American, English, German, French, Russian and Italian banks from G-20 countries and foreign capital from countries like Qatar, Kuwait, Iran, and Israel purchased banks in Turkey, opened branches, or established partnerships (Demir & Çakır, 2015). Also, the Banking Sector Restructuring Program was applied in 2001 to grant a healthy structure to the banks in Turkey. The program aimed the restructuring of public banks, analysis of the banks transferred to the Saving Deposit Insurance Fund, rehabilitation of the private banking system, empowering of the supervision framework of the banks, and increasing the competition and efficiency in the sector (Sarı, 2020). Subsequently, asset management companies were established, consistency in the collection of loans was provided, and the Turkish banking sector entered a fast consolidation process. The consolidation in the system and the taking over of the problematic banks by the Saving Deposit Insurance Fund increased the equities of banks and strengthened their capital adequacy. The share of loans in the total current assets increased and the share of non-performing loans in the total loans decreased.

While the consolidation process allowed easier inspection of banks, the facts that supervisions were conducted on a consolidation basis, the required reserve was initiated for problematic loans and reporting according to international accounting standards allowed bank balance sheets to reflect their true financial states. The deposit protection was limited with TRY 50,000 in 2004 and that provided a disciplined structure to the sector (Köksel & Yöntem, 2014).

These regulations increased the resilience of banks against crises and made the Turkish banking sector experience fewer negative effects of the 2008 mortgage crisis started in the USA. The global crisis caused many big and small banks in the world to lose millions of dollars. The reflections of the global crisis on the Turkish economy were mostly observed in the real sector as the increases of external loans and production decreases (Şimşek & Altay, 2009).

In the 2010's, there were a few incidents that unsettled the Turkish economy. In 2013, Gezi Park incidents and the "jurisdiction" coup attempt of a religious terrorist organization had a burden on the Turkish economy. These two crises had a cost of 157 billion dollars to the economy. In 2016, the religious terrorist organization attempted a military coup. This coup attempt had economic, political, judicial, and sociological consequences. After this incident, public finance discipline deteriorated and the Turkish economy came to a vulnerable state. On top of that, approximately 4 million immigrants from Syria came to Turkey and have been living in the country for 8-9 years. The open-door policy has had a cost of approximately 40 billion dollars as of 2019 (Sezal, 2020).

The most recent crisis in the Turkish economy was in 2018. Policy changes of the central banks of the developed countries had some negative effects on the developing countries and the Turkish financial markets had a severe fluctuation in August 2018. The tendency to exit from the developing countries, an increase of oil prices and the statements of the USA about sanctions against Turkey were the foreign factors that backed the negative developments in the Turkish financial

markets. Subsequently, the Turkish Lira (TRY) lost significant value, inflation rose, and interest rates went up. These developments downgraded the growth rate in Turkey to 2.6% in 2018 compared to 7.2% in 2017. The growth rate continued its downward trend and went down to 0.9% in 2019 (Sezal, 2020). 2020 has been the year of pandemic and this year is expected to present a negative growth rate in Turkey.

The return on assets of the Turkish banking sector in the June 2019 period was 0.49% in the public banks which was almost half of the previous year (0.93% in 2018). The return on assets of the private and foreign-invested banks in Turkey had a fall in that ratio as well in the aforementioned period (from 1.05% to 0.71%) (Sezal, 2020).

An important indicator of the banking sector is the branch and employee numbers. In 2018, the number of branches operating in Turkey was 10,454 and this number decreased to 10,289 in September 2019 (165 branches less). As of January 2020, the number of branches was 10,158 (131 branches less). This is a remarkable decrease in a short time. The number of employees in the banking sector was 192,313 in 2018 and went down to 189,507 in September 2019 (2,806 people less) (Sezal, 2020). As of November 2020, there are 9,929 active branches (229 less than September 2019) in Turkey. The total number of employees is 186,654 as of September 2020 (2,853 less than the previous year) (tbb.org.tr). It seems that mostly the pandemic will determine (how long will it last, how intense will it be, etc.) the numbers of branches and employees in 2021. However, it should be noted that technology is another factor that causes the number of branches and employees to decrease.

2.2. Use of New Technologies In Turkish Banking Industry

The Turkish banking sector has always tried its best to adapt to new technologies. The sector is aware that technology has many advantages of cost reduction to customer satisfaction and fast services. The banking sector in Turkey started using technology long before internet banking. The sector first used ATMs then credit cards, debit cards, and EFT as technological tools for better services and more income. These technologies came after a long time from the developed countries but the Turkish banking sector has been very successful in using them and set a very good example in the world with some products.

2.2.1. Use of Technologies Before Internet Banking

Technologies were used before the Internet in Turkey by banks. However, the periods between the introductions of new technologies and products were very long compared to today's dizzying speed. The first technology used was not about the consumers but the system of banks. Computers were introduced by Yapı Kredi bank in Turkey in 1967. In 1984, the first online banking application was adopted between the branches of Yapı Kredi Bank. In 1987, Yapı Kredi was again the first bank to establish an online connection with its branches abroad.

As mentioned in the history of the Turkish banking industry, the 1980s were the developing years of the sector. ATMs were the first technological product in the sector. Isbank introduced the product with the name "bankamatik" in 1987. The product was a revolution at that time because it allowed cash withdrawal and deposits 24/7. Some ATMs opened with a ceremony in those years like a bank branch with the participation of a city or district governor. Before ATMs, people used to rush to the bank branches on Fridays not to run out of cash on the weekend. Because of the annual costs of ATMs, banks switched to the common ATM system in 2009 in Turkey (sabah.com.tr – 10.12.2011). As of 2020, there are 53,000 ATMs in Turkey (bkm.com.tr).

In 1988, Yapı Kredi Bank introduced Turkey's first debit card (Telecard) and Visa credit card (https://www.yapikrediinvestorrelations.com/). The cards had huge demand and, in a few years, thousands of people started to use credit cards, and millions of them debit cards. They became very important instruments for the Turkish people since they made life easier.

In 1991, Yapı Kredi bank introduced telephone banking in Turkey. Also, in 1991, Yapı Kredi Bank introduced the POS machine (https://www.yapikrediinvestorrelations.com/). The introduction of the POS machine paved the way for widespread credit card usage in Turkey. Although credit card was introduced in Turkey almost 40 years after its invention in 1950, Turkish people have internalized it as an indispensable payment tool and a lifebuoy at financially hard times. There are 71.4 million credit cards as of May 2020 (digitalage.com.tr). Telephone banking also initiated a new era in banking since customers could make many transactions from home. In the early 1990s, the ATMs were not widespread as today so it was attractive for bank customers to make transactions from home.

In the 1990s, credit cards acquired the features of giving points to customers and allowing installments. This was remarkable progress because credit cards becoming attractive started to benefit banks, consumers, economy. Credit cards then became a more sophisticated payment means for the consumer. This increased the demand for them. Also, telephone banking allowed 24/7 transactions. Before the Internet era, this was important because the notion of 24/7 started. This would expand and continue in the digital era.

Another technology used in the Turkish banking sector before internet banking was the electronic fund transfer (EFT). The system was initiated in Turkey in 1992. EFT system is the payment system that enables the payment transactions with Turkish Lira (TRY) electronically between banks. The second-generation EFT system started with the restructuring in 2000. The third-generation EFT

system was developed by the Central Bank of Turkey technical staff and was activated in 2013 (tcmb.gov.tr).

2.2.2. Use of Digital Banking

Digitalization is one of the most important elements of the Industry 4.0 era. Especially after the year 2000, the Internet, digital tools, new technologies have changed people's lives radically. People started to make all kinds of transactions from their homes or offices. With the rapid development of mobile devices, it is possible to be online everywhere with an Internet connection. Digital banking is the total of internet banking and mobile banking.

The use of digital banking in Turkey started in 1997 with the Internet. Garanti Bank and Is Bank started Internet banking in 1997. In the following years, other banks joined them as well. With digital banking, customers make many transactions from anywhere 24/7. These transactions include opening and closing deposit and drawing accounts, displaying account information and balance, depositing and withdrawing money, transferring funds to domestic and foreign accounts, opening an investment account, using various investment instruments (gold, foreign currency, funds, stock exchange, etc.), applying for a loan or a credit card, monitoring the applications, setting limits, creating virtual cards and canceling them, updating personal and contact information, and making payments of invoices, taxes, fees and donations (Esen, 2020).

Although digital banking presents various facilitated transactions, some customers still do not use it or rarely use it. Digital banking is a technological development that has emerged and become widespread with the acceleration of the Internet and becoming more secure (Esen, 2020). Digital banking is becoming more and more popular every day in Turkey.

The statistics reveal that there are 56 million active digital banking customers in Turkey as of March 2020. 27 banks in Turkey offer Internet banking and 22

banks offer mobile banking. In the January-March 2020 period, 4 million people made only Internet banking transactions and 44 million made only mobile banking transactions. 8.4 million people made both Internet and mobile banking transactions. Of the 56 million digital banking customers, approximately 54 million of them are active individual customers and 2.3 million of them are active corporate customers. 37 million of these people are men (69%) and 16.8 million of them are women (31%). The data regarding age groups reveal that the 36-55 group has the biggest number with 21 million people. 26-35 group is the second and 18-25 is the third group with 16 million and 11 million respectively. 56-65 group is the fourth group with almost 4 million people (tbb.org.tr). These data show that young and middle-aged people constitute the vast majority of digital banking users.

Table 2.1. Number of Active Digital Banking Customers

	January – March 2019	January – March 2020
Total Active Individual Customers	44,303,000	53,981,000
Total Active Corporate Customers	1,994,000	2,343,000
Total Active Digital Customers	46,297,000	56,324,000

Source: TBB Dijital, Internet ve Mobile Bankacılık İstatistikleri: Mart 2020, 2020, s. ii

Digital Banking Customers = The customers who use internet banking only + The customers who use mobile banking only + The customers who use the internet and mobile banking both

The development process of digital banking continues in Turkey and the world. Despite the rapid development of information security norms and technologies, fraud can take place and users are suffered. The greatest obstacle against this technological tool becoming widespread is the users seeing fraud incidents on media and the Internet and abstaining from using digital banking (Esen, 2020).

Even so, with the help of the pandemic of 2020, digital banking continues to develop.

When compared to Europe, Turkey has a way to go regarding digital banking. In Europe, the rate of digital banking users is higher, Internet access is easier and people's general education level is higher.

2.2.3. Use of Internet Banking

As mentioned above, Internet banking in Turkey started in 1997 with Garanti Bank and Is Bank. The number of Internet banking users is increasing day by day in Turkey. Today, customers can make almost all transactions online that they make by going to the branch. Thanks to Internet banking, customers can make transactions 24/7 from anywhere. Online transactions are faster, easier, and cheaper. Developments in Internet banking is mostly dependent on technological advances. Although Internet banking is a mode advanced and more widely used in developed countries, the rate of using Internet banking has constantly been increasing in recent years. From the point of view of banks, it is a tool that helps them reach more customers, reduce their costs, and increase the volume of their deposits. They can also increase their service and product varieties which ultimately raise their prestige. Customers do not have to wait in line. Customers' main concern is security. The banks that have the image of providing a "secure Internet banking system" are generally ahead of others. Internet banking also enables banks more transactions per customer.

The statistics in Turkey reveal a high number of people using internet banking. In Turkey, there are 69.3 million Internet banking users as of March 2020. This means that 83% of people at least made one transaction on the websites of banks. In the last year, almost 22 million people went online for banking transactions. In the period of January-March 2020, 111 million financial transactions were made online in Turkey which reached a volume of TRY 1.5 trillion. The first five types

of online transactions are money transfers, payments, investment transactions, credit card transactions, and other financial transactions. There is an interesting fact that the number of financial transactions decreased by 9 million compared to the previous period but their volume increased by TRY 40 billion (tbb.org.tr). This means that the volume of every transaction has increased.

In the pandemic period of 2020, digitalization in the world and also in Turkey has become more popular. On top of the well-known advantages of Internet banking, customers also try to protect their health. Internet banking is the best way to stay away from other people and make banking transactions. It seems like the pandemic will continue in 2021. This will probably mean more customers and transactions for Internet banking. Thus, Internet banking has the potential of becoming a habit of more people soon.

2.2.4. Use of Mobile Banking

Some time ago, Internet banking was the most prevalent digital banking type. However, this has changed in recent years. Today, mobile banking users in Turkey has exceeded Internet banking users. As the banking system develops, the infrastructures of banks also develop and that enables the real-time services of mobile banking systems. Mobile banking services include the ones given with Internet services and also the location information of branches and ATMs (Seyrek & Akşahin, 2016). Using a mobile phone is easier to use than a computer, therefore, people have started to use mobile banking more than Internet banking. Mobile banking is rapidly developing in parallel with the development of smartphones. Even if the customer does not sign in at a given moment, he/she can receive the information that he/she has received an EFT or an announcement from the bank. In mobile banking, the application is also important. It should be user-friendly, fast and secure as well as present superior technical specifications and rich content. Since a mobile banking application of bank functions as the

showcase of the bank therefore the application is important for the prestige of the bank.

In Turkey, there are 83 million mobile banking customers as of March 2020. This number equals the population of the country. In the last one year, 62.6 million people used mobile applications at least once. In contrast to Internet banking users, mobile banking users increased by 3.2 million. This is clear evidence of a shift from Internet banking to mobile banking in Turkey. 3.1 million of the total number denotes the corporate customers. In the January-March 2020 period, 578 million transactions took place via mobile banking. The value of these transactions was TRY 1.8 trillion. The number one type of transaction was money transfers which constituted 52% of the financial transaction volume. The second type of transaction was investment transactions which constituted 37% of the total transaction volume (tbb.org.tr).

In the pandemic period, many banks shortened their working hours, closed branches and took other precautions. In such an environment, banks concentrated on developing their digital services. According to the Deloitte Banking Maturity 2020 research, Turkey ranked as one of the digital champions with the variety and accessibility of the services banks offer. The research included the examination of 1108 functions under 6 headings. According to the report, Turkey leads in 5 of these 6 categories. These 5 categories are “gathering information”, “user participation”, “daily banking”, “improve relationships” and “closing accounts”. The research was conducted in 39 countries (aa.com.tr).

The pandemic is fostering the two digital banking branches – mobile banking and Internet banking. Fewer people go to branches or ATMs every day. From a more detailed perspective, the trend indicates that more people are using mobile banking and fewer are using Internet banking in Turkey.

2.3. Types of Customers In Banking Industry

Rapid developments in the IT sector have caused many concepts to change in the financial area such as business, trade, and profitability. Since banks have millions of customers, they have billions of data of these customers and these data have to be processed. That is why, banks have attached more importance to solutions that are focused on IT (Zerbino et.al., 2018). Today, most banks use high-tech solutions for their systems and operations.

Data mining is a tool that is used for extracting important information and making better decisions in the banking sector. Banks have billions or hundreds of millions of raw data and they have to gather valuable and functional information. Another powerful of banks is the CRM application. If banks support their CRM application with well-managed data mining then they can gain a competitive advantage (Kasemsap, 2018).

CRM (customer relationship management) is a strategy that helps to establish long-term relationships with customers and increasing income and profits. CRM is more important in the banking sector than in other sectors. CRM focuses on gaining customers, retaining customers, customer loyalty and managing the relevant resources of time, money, and management (Hasan, 2018). Banks can easily lose customers therefore; they have to understand customers' needs very well and this is possible with the support of data science.

CRM applications consist of four stages (Anshari, et.al., 2018): (1) Customer Identification, (2) Customer Attraction, (3) Customer Retention, and (4) Customer Development.

After Customer Identification, the Customer Attraction stage includes one-to-one relationships with the customers and direct marketing. Customer Retention is the main focus of CRM applications. Customer Retention is important because satisfying customers and measuring the level of customer satisfaction mostly take

place at this stage. Customer Development can also be expressed as increasing the number of customers (Anshari, et.al., 2018).

Customer segmentation is grouping buyers with the same needs and buying behaviors in a certain market. Customer segmentation helps marketing, finding niche markets, and ensuring productivity. In the Turkish banking sector, customers are divided into three groups by most banks:

- Individual customers,
- Retail customers,
- Commercial customers,
- Corporate customers

These four groups are explained in detail below.

2.3.1. Individual Customers

Individual customers include individuals and their sole proprietorships. They are served under the Individual Banking Department by banks. Banks give certain services, especially for individual customers. These services include consumer loans, credit cards, call centers, Internet and mobile banking, etc. Individual banking can be defined as all the banking activities for fulfilling the ever-changing and increasing needs of individuals by using banking services and technology with a modern understanding of marketing. The varying purchasing power of different segments of society has caused the arising of different needs and intense competition in loans of banks has made banks diversify their services and introduce ways of presentation. These developments have led to a decrease in the products and services of traditional banking and individual banking services have become more popular (Gümüş, 2014). Today, banks try their best to customize their products and services because every customer is aware of the fact that they are valuable and can change their bank instantly.

Since banks have millions of individual customers, they give customized services to fulfill their financial needs. Individual customers consist of the bottom of the pyramid with the greatest number of people and lower income compared to commercial and corporate customers (Gümüş, 2014). Individual customers are all the customers of a bank without a firm. They are not corporate citizens but private persons. Thus, they do not have a turnover limit to be in that category.

From the point of view of banks, there are three advantages of individual banking. There is a great number of individual customers so the name of the bank is used extensively and this is good for the prestige of the bank. Secondly, credit risk is spread because of this great number. Thirdly, individual banking is more profitable than the other banking areas of activity (Gümüş, 2014). Thus, millions of individual customers contribute greatly to the brand value of banks.

A typical bank gives a great number of loans for individuals and their average amount is usually low. This implies a low risk for the bank because typically not the majority of the loanees have difficulty in paying their loans back unless there is a general economic crisis. Also, individual customers are more profitable for banks. Banks can offer many products and services to one customer. Millions of customers mean constant cash flow to banks. This great number also creates an advertising effect. Individual banking allows banks cheap fund procurement (Gümüş, 2014).

Individual banking is run by banks mostly with branches and digital banking. Average banks have many branches that host the operations of borrowing and lending money. İndividual banking officials and tellers work in branches. Within the scope of individual banking, all kinds of account and investment transactions, insurance policies, automatic payment orders, credit card transactions, etc. are followed and the bank tries to make the individual customers effectively use all the products and services (Gümüş, 2014). Many SMEs in Turkey run their banking transactions in branches or on digital banking as individual customers.

Individual customers mean millions of customers to banks in Turkey. That is why there is intense competition to win them. Many customers work with a few banks. As technology advances, credit notes of customers have been visible by every bank. That is why, banks also attach importance to the objective criteria of customers like income level, credit note, and behaviors.

2.3.2. Retail Customers

In Turkey, banks consider customers like retail customers if their firms' annual volume of transactions is between zero and TRY 25 million. These are the micro or small-sized firms.

In Turkey, 99.8% of companies are SMEs. SMEs provide 76.7% of employment. These figures indicate the importance of SMEs in the country's economy (mfa.gov.tr). A great number of SMEs means great potential for banks because SMEs need the support of banks to grow and employ people. This strategic position requires special policies designed for them. The state encourages banks to support SMEs.

Most SMEs in Turkey are not institutionalized enough so that they need support, especially from the government and banks. A state-owned bank is a good example that gives special services to SMEs. This is a developed version of retail banking. The bank has special products and services for SMEs. The bank offers support packages for its retail banking customers. Some of these packages are Export Support Package, Production Support Package, Machine Production Support Package, SME Tourism Sector Support Package, Franchising Support Package, Agriculture Support Package, etc. The bank has also designed loans special to retail banking firms. These loans are with variable or fixed interest rates. The bank supports the export operations of its retail banking customers. Another service of the bank is the payment of customs duty with an SMS. The bank offers guaranteed cheques as well. If the balance of the retail customer's

account is not adequate for the cheque then the bank pays it. The bank gives consultancy services especially for SMEs doing business with foreign countries and offers cards and insurance services specifically designed for SMEs (halkbankkobi.com.tr).

In a world full of crises and uncertainty, retail banking and SMEs in Turkey has a great potential to develop because these firms are flexible, agile, and easy to reorganize. The government should design special policies for them and banks should design special products and services for them.

2.3.3. Commercial Customers

Commercial banking aims to serve corporate citizens. Banks group corporate citizens according to turnover criteria. In this way, banks treat companies with commercial or corporate banking. Commercial banking addresses firms with less annual turnover than that of corporate customers. Therefore, commercial banking customer firms are relatively smaller than corporate customers (Kaya & Aslan, 2016). In Turkey, most large banks treat customers as commercial customers if their firms' annual turnover is above TRY 25 million up to TRY 200 million.

Due to the intense competition for commercial customers, banks employ crowded marketing teams to gain and retain those customers. These marketing professionals both run the existing customers' transactions and find potential customers in various ways, visit them, and try to make them the new customers of the bank (Kaya & Aslan, 2016). In Turkish culture, visiting commercial customers is more important than in many other countries because face-to-face communication and having tea or coffee together can make big differences in terms of gaining customers. This is seen as the best way of establishing a dialogue.

Under the commercial banking category, the following services are offered by banks (Kaya & Aslan, 2016):

- Current accounts (money order, money transfer, cheque payment, cash transactions, etc.)
- Investment transactions (foreign exchange transactions, funds, term deposits, etc.)
- Loan usage (cash loans, non-cash loans, etc.)
- Foreign trade operations (counter-guarantee, external guarantee, letter of credit, export, import, etc.)

Sometimes commercial customers get special discounts, interest rates, or good deals due to their transaction volumes. Decisions regarding special pricing and customized transactions are made by commercial customer representatives. Corporate citizens are an important customer group for banks. Banks try their best to gain them. Mainly, there are two reasons for commercial customers changing banks: the service given to the customer is not enough or some services are on paper but not realized (Kaya & Aslan, 2016). Customer dissatisfaction may be very costly to banks if the commercial customer decides to change banks because that customer may have millions of dollars of transactions every year.

Commercial customers expect some additional supports from their banks while applying new investment decisions (low-cost loans, financial consultancy, etc.). Also, they expect their banks to make the necessary effort for their retention. This type of effort may include invitations for lunch and new year gifts (Kaya & Aslan, 2016).

With special treatment, banks aim commercial customers to make transactions in a fast and practical way. To ensure this, banks make improvements in their branches and digital service channels. Thus, most of the customers are satisfied with short transaction times and a joyous process.

2.3.4. Corporate Customers

Corporate customers are corporate citizens like commercial customers. The difference is that their companies have greater annual turnovers. These firms are at the top of the pyramid of customers. In Turkey, customers owning firms with an annual turnover of TRY 200 million and more are considered corporate customers.

Corporate banking aims to fulfill all the needs of corporate customers. Thus, in addition to traditional banking products and services, banks provide other financial services such as insurance, leasing, and investment services. Corporate customers generally make a great number of transactions, do international activities, and have complicated and a wide range of needs (Heffernan, 2005). As the transaction volume and turnover of the corporate customers increase, their needs get more complicated and diversify and this state mostly requires special treatment and marketing approach (ex. more discounts, special interest rates, gifts).

Corporate customers are the group that creates the greatest value for banks. Thus, banks give universal banking and financial services with creative solutions. Subsequently, banks follow the satisfaction and loyalty levels of corporate customers and make the necessary corrections and improvements. The most successful banks with their corporate customers keep this success as their core competence and therefore these banks are hardly imitated. If a bank has an integrative strategic perspective to corporate customers together with their inner facts, environmental conditions, stakeholder preferences, competition circumstances, and customer needs then they will probably get the best of corporate banking and have satisfied corporate customers (Heffernan, 2005).

Digital banking channels not only serve individual customers but also corporate customers. Especially in the collection periods, firms do not want to spend time

and energy in branches. Thus, they use digital banking channels for saving time and have other advantages. Employees make transactions from their office; this reduces costs and allows faster transactions and monitoring accounts at all times. Also, firms can follow all the steps of transactions instantly, make remittances, EFTs, and transfer money to other countries, and make future-dated EFTs (Zeybek, 2018). These findings imply that corporate customers use digital banking more than individual customers both in terms of frequency and amount of money.

It is possible to indicate that corporate customers are invaluable for banks because, in Turkey, these companies shape and direct the economy since they are at the top of the pyramid. Research indicates that the loyalty of corporate customers is higher than that of individual customers (ex. Çankaya & Çilingir, 2008). This is a good expression of the view of corporate customers that they see their banks as their professional associates that they can receive help anytime.

CHAPTER 3

SERVICE QUALITY AND CUSTOMER SATISFACTION

Banks have various goods and services. Banks also have millions of customers. The Internet and digitalization allow the rapid dissemination of information. If banks have a dissatisfied group of customers then dissatisfaction can be disseminated quickly via social media, websites, etc. Satisfied customers, on the other hand, is the best way for banks to profitable operations.

In this chapter, customer satisfaction, service quality, the difference between product and service quality, dimensions of service quality and SERVQUAL, and the relationship between service quality dimensions and customer satisfaction will be covered.

3.1. Customer Satisfaction

The Covid-19 pandemic process has accelerated the shift of many customers from branches to digital banking. Therefore, digital banking has become a more important indicator of customer satisfaction.

Satisfaction is a person's comparison of his/her expectation of a product or service and the performance of the product or service (Noyan & Gavcar, 2020). Customer satisfaction is important to banks because, in the long term, the cost of retaining customers is lower than gaining new customers (Mishra, 2009). The factors that affect customer satisfaction in the banking sector are expectations, product quality, performance, reliability, convenience, service quality, reputation, perceived quality, ease of use, low cost, and transaction speed (Bilir, 2010). Banks offer both products and services so, from the perspective of banks, customers should be satisfied on both sides.

Businesses aim to increase the number of loyal customers. Loyal customers mean repeating sales for businesses. Digital banking allows more frequent visits and transactions, thus sales for loyal customers than a branch or ATM banking. Banks should accurately analyze and know what kind of service customers expect. In other words, banks should work in a customer-focused way.

Analyzing whether a product or a service satisfies customers includes an evaluation process. Customer satisfaction is about the perceived performance of the service the customer receives. There are various qualitative and quantitative methods for measuring customer satisfaction. Qualitative methods include group interviews, individual interviews, questionnaires, etc. Using qualitative and quantitative methods together increases the validity and reliability of the research (Taşkın & Hacıömeroğlu, 2010).

The liberalization trend in the Turkish economy and banking sector after 1980 has caused intense competition in the banking sector. In this period, new banks entered the sector, the sector opened to international markets, banks were allowed to make foreign currency transactions, technological advances, and product range expanded. As these factors caused intense competition, the need for banks for satisfied customers also increased (Demirhan, 2009). Under these intense competition circumstances, these two main questions came to the minds of the top managers of banks:

- Are the customers satisfied?
- What are the factors that cause customer satisfaction in individual banking?

The answers to these two questions are the keys for banks to survive and compete more successfully. When banks analyze the needs of customers accurately and fulfill these needs in the right ways then they will gain strength in various terms (Mishra, 2009).

Customer satisfaction is very important in services because a nice product may make up for some small problems in the complementing service. Customer satisfaction may be classified as general customer satisfaction and customer satisfaction specific to buying. In specific satisfaction, the customer decides whether to be satisfied according to the specific buying action. The general customer satisfaction, on the other hand, is the satisfaction of the customer resulting from the evaluation of him/her of the total of his/her purchases and uses of goods or services in time (Anderson, 1994). For customer satisfaction based on one buying and general customer satisfaction to be realized, it is very important to know what the customer wants and expects from the service. By exceeding or fulfilling their customers' expectations, firms and brands can ensure customer satisfaction and be perceived as firms offering high-quality services (Mutlubaş & Soybalı, 2017).

To ensure customer satisfaction, firms should earn their customers' trust, smile at them, be customer-focused, be nice to them, welcome them inside and outside the workplace, treat them equally, be aware that salaries of the employees are paid by the customers, remove customer complaints, and be aware that the most important factor for the business is the customer (Onurlubaş & Gümüş, 2020).

Firms must create a corporate culture that prioritizes customer satisfaction. All the employees must be told that their job is to ensure customer satisfaction without preconditions. Firms have to have a service vision that is based on the perfect service and customer satisfaction and is internalized by all the employees. Training sessions may help a lot by teaching employees how to treat customers and ensure customer satisfaction (Şahin & Şen, 2017). Service quality is also very important in ensuring customer satisfaction. This is mentioned in the below section.

3.2. Service Quality

Service quality is about the expectations of the customer before and during receiving the service and the service quality he/she perceives after the service

(Zun et.al., 2018). Service quality is the priority of customer loyalty together with customer satisfaction.

Service quality emerges as a result of the interaction between the customer and the elements in a service organization. The concept of service quality reveals the necessity of a perspective that is based on customer needs. In other words, quality perception is not based on the service provided but on the customer's point of view or perception. Thus, service quality is a comprehensive evaluation of the offered advantages of the service by the customer (Sanyal & Hisam, 2016).

Service quality of banks may differ by customers' expectations and the channel the service is offered. The service variety of banks has increased with technological advances in IT and communication. In the 1990s, banking services were given only from branches. Today, the Internet has become widespread and more and more customers prefer Internet and mobile banking. The transactions on the Internet have decreased the workload of banks and banks have started to attach more importance to basic banking services. As banks strive to increase their service quality, they diversify their and distribution channels (Dayı & Yıldız, 2020).

3.2.1. Difference Between Product and Service Quality

The share of services in economies has increased remarkably in the last few decades. Starting from the 1960s, Total Quality Management (TQM) principles used to emphasize only the quality issues about products. However, services have gained importance, especially in developed countries. This has brought forward the service quality issue.

There are certain differences between product quality and service quality. Service is something intangible. Unlike products, consumers cannot see the service or touch it. Also, service is consumed as it is produced. Thus, while measuring

service quality, the quality of something intangible is measured. Besides, the quality of production and at the same time the consumption process is measured.

Works of describing and measuring quality have come mostly from the measurement of the quality of products. However, information about the quality of products is not enough to understand service quality. Services have three characteristics to be considered to fully understand service quality: intangibility, heterogeneity, and inseparability (Parasuraman et.al., 1985).

Most services are intangible. Since services are performances, not objects, displaying the same performance more than once is very difficult. Thus, setting exact production specifications for a standard quality is very hard. Before selling the service, most services cannot be tested, measured, kept as inventory, and verified. These features avoid quality assurance before the sale. Since services are intangible, it is hard for the firm to understand customers' perceptions about their services and thus evaluate service quality (Zeithaml, 1981).

Services, especially the labor-intensive ones are heterogeneous. In other words, the quality and performance of services may change according to different points of view of customers and producers. Service quality may also differ daily. The behaviors of the service employees may not achieve a certain standard either. Thus, the firm's intention about the service to be delivered and the service the customer receives may be completely different (Parasuraman et.al., 1985). Especially when training levels of employees are low, control of the management is low, or coordination is bad between the management and employees then this problem may easily be observed.

In many services, production and consumption processes cannot be detached. This means that planning and delivery of the service should be right because making corrections afterward may be difficult (Parasuraman et.al., 1985). The

management should make robust descriptions and set firm standards since in-process control may be difficult and/or late.

It is more difficult for customers to assess service quality than the quality of products. The customer can feel the package, color, style, label, etc. of the product whereas cannot easily feel the intangible service. The factors that the customer feels the service may be equipment, facility, and employees (Parasuraman et.al, 1985).

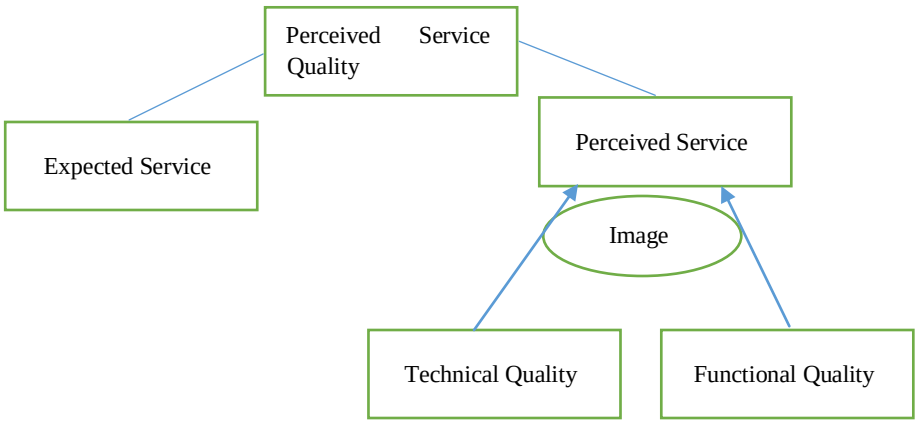
The customer compares the service quality with his/her expectations and therefore, his/her perception of the service quality occurs. In other words, service quality is closely related to confirmation of expectations of them (Parasuraman, 1985).

3.2.2. Dimensions of Service Quality And SERVQUAL

Researchers have long been reflecting on the concept of service quality. One of the most logical ways to describe and measure it is to divide it by dimensions. Researchers have found and suggested some models for this purpose. This study examines the models that stand out in the literature and are widely used. Then the SERVQUAL model, which is used as the data collection tool in this study, is introduced.

One perspective of service quality involves technical quality and functional quality. Technical quality is about "what customers are actually received from the service". Functional quality is "the manner in which the service is delivered" (Gronroos, 1982). This is called the Nordic Model of service quality and is exhibited in Figure 3.1.

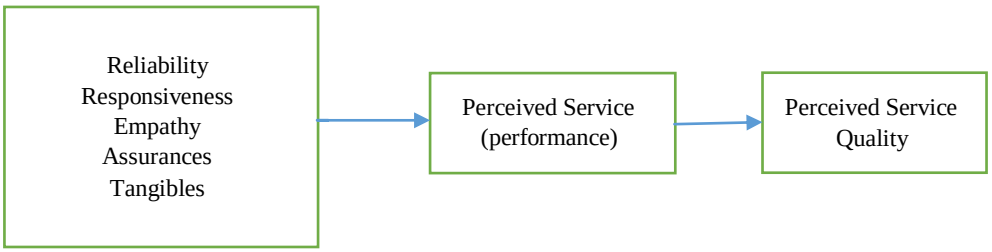
Figure 3.1. The Nordic Model of Service Quality (Gronroos, 1988)



The Nordic Model is based on customer perceptions. On the other hand, the model does not contain a practical measurement tool. The Nordic school prioritizes theory generation rather than practice (Polyakova & Mirza, 2015).

After the Nordic Model was criticized, the SERVPERF model was introduced. Some researchers indicated that (ex. Carrillat et.al., 2007) both SERVQUAL and SERVPERF are valuable. However, SERVQUAL presents a more detailed model of service quality (Polyakova & Mirza, 2015). Figure 3.2. below shows the SERVPERF model.

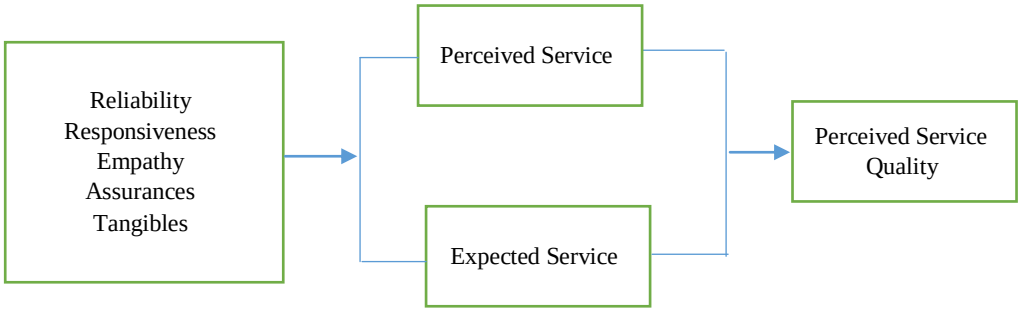
Figure 3.2. The SERVPERF Model of Service Quality (Cronin & Taylor, 1992)



This study used the SERVQUAL Model to measure service quality. The model is also known as the American Model. The main idea of the model is that service quality is the difference between the perceptions of the customer about the expected service level and the received service level. In their original work,

Parasuraman et.al. (1985) introduced ten dimensions of service quality and called them "determinants of service quality". These dimensions were access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles, and understanding/knowing the customer. After their subsequent study, the researchers narrowed down the dimensions into five: reliability, responsiveness, tangibles, assurance, and empathy (Parasuraman, et.al., 1988). Assurance and empathy dimensions were narrowed down from the remaining seven dimensions since they were the components of these two elements (Polyakova & Mirza, 2015). The model is revealed in Figure 3.3. below.

Figure 3.3. The SERVQUAL Model of Service Quality (Parasuraman et.al., 1988)



This study used the model of Sagib and Zapan (2014) who adapted the SERVQUAL model to the banking industry. In the model, the five dimensions of service quality are reliability and responsiveness, assurance and security, convenience of location, efficiency, and easiness of operation.

3.3. The Relationship Between Service Quality Dimensions and Customer Satisfaction

Service quality dimensions by the SERVQUAL model and customer satisfaction is a relationship that has been shown and proved many times in the literature. The firms that implement all the service quality dimensions in their services expect more customer satisfaction. In theory, all customers want reliable, responsive, and tangible services with empathy and assurance.

By adapting the SERVQUAL model to the banking industry, Sagib and Zapan (2014) did a study in the banking sector in Bangladesh. The study examined the Bangladeshi mobile banking service quality and customer satisfaction and loyalty. The authors indicate that the model they developed based on the SERVQUAL model is a result of a "comprehensive and critical literature review". The authors found all the dimensions related to customer satisfaction. They found that mobile banking services should prioritize reliability and responsiveness and then empathy, efficiency and convenience. Their study concluded that these five dimensions predict customer satisfaction regarding the mobile banking services of banks. Also, the authors concluded that customer satisfaction with mobile banking services predicts customer loyalty.

A similar study was conducted in Iran by Aghdaie and Faghani (2012). The study confirmed that the SERVQUAL dimensions predict customer satisfaction in the banking industry.

Another study in Bangladesh is also about mobile banking service quality and customer satisfaction. Rahman et.al. (2017) used SERVQUAL dimensions to measure service quality and examined how they influenced customer satisfaction. The authors found a positive and significant relationship between the four dimensions of the model customer satisfaction. Only the assurance dimension was found to have no significant relationship with customer satisfaction. Tangibles, responsiveness, reliability, and empathy were found to have a significant relationship with customer satisfaction.

Some studies examined the SERVQUAL dimensions and customer satisfaction in Turkey as well. One of them is that of Banar and Ekergil (2010). This study was conducted among accounting professionals. The service quality of accountants was found to be positively related to customer satisfaction. The dimensions that mostly influenced customer satisfaction were found to be reliability, empathy,

and tangibles. Accounting and auditing firms and their employees should be reliable.

It is important to reveal many similar studies conducted in various cultural contexts. One study was carried out in the banking sector in Kazakhstan (Avcı & Kerim, 2020). The study verified that all the dimensions of the SERVQUAL model predicted customer satisfaction. The findings also revealed that when the service quality of the bank decreased, customer satisfaction, and also the volume of transactions decreased.

All these studies reveal that the SERVQUAL model is a valid and reliable measurement tool of service quality and the dimensions of the model are predictors of customer satisfaction. The lack of dimensions causes a lack of customer satisfaction. This fact is a clear indication that this study used the right model to measure the mobile banking service quality of banks and predict customer satisfaction.

CHAPTER 4

PERCEPTION OF CORPORATE CUSTOMERS

4.1. About The Research

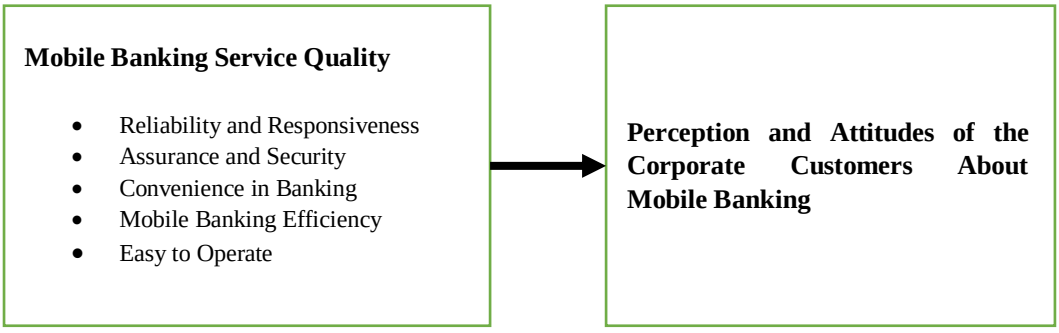
This study was carried out on the corporate customers of a private capital bank. The name of this bank will not be mentioned and the bank will be called at this research X Bank because of the confidentiality of the data provided by this bank. X Bank is among 9 private capital banks and 39 banks in total in Turkey (TBB, 2020). The Bank attaches great importance to digital banking like the others. It has also stated that they consider their technological development and innovation as the digital transformation journey which gives trust, deployment, and time advantages.

4.2. Purpose of The Research

This study aims to find out the perceptions and attitudes of the corporate customers about mobile banking and also to define opinions of the users about the level of satisfaction, transaction security, user-friendly interface, and easiness.

4.3. Research Model

Figure 4.1. The Research Model



The research model includes the dimensions of the mobile banking service quality and their effect on the perceptions and attitudes of corporate customers.

4.4. Population and Sample

Table 4.1. Population and Sample

X Bank Corporate Customers	Turkey	Istanbul
Total	30,600	9,500
Digital Banking	18,500	6,700
Internet Banking	17,000	6,200
Mobile Banking	15,500	5,700

Source: X Bank Annual Reports and Digitalization Reports

The term 'Corporate Customer' includes both commercial and institutional customers. This research is limited to corporate mobile banking customers of X Bank in Istanbul, so the population of this research is 5,700 corporate mobile banking users. The questionnaire was conducted on a sample of a minimum of 314 corporate users of mobile banking of X Bank in Istanbul.

4.5. Data Collection Tool

The perception of corporate mobile banking customers was searched using a tool that is commonly used for measuring service quality. Service quality is defined as the outcomes of the customer's overall evaluation of the differences between service expectations and the actual service performance. Therefore, service quality is conceptualized as a multidimensional construct consisting of five dimensions.

The SERVQUAL tool, which was developed and used by Parasuraman, Zeithalm, and Berry has been used for a long time to measure the expectation of the customer and actual perception about the service given. Parasuraman et al. developed a multi-item scale for assessment of electronic service quality, which they named E-S-QUAL. Using all dimensions and factors measuring service

quality, a survey was developed and used by Sagib and Zapan (2014) and Malviya (2015) to measure mobile banking service quality (Sagib and Zapan, 2014, p. 335), (Malviya, 2015, p. 245).

This scale was used in this research to explore the quality of the mobile banking service and the perception of the customer. These survey questions were used to measure the perception of corporate mobile banking users of X Bank. The survey was translated into Turkish for application. The scale has 28 questions and all items were rated on a 7-point Likert type scale ranging from 1 for 'strongly disagree' and 7 for 'strongly agree'. The questionnaires were codified and analyzed with the SPSS program.

4.6. Data Analysis

Reliability and Validity Analyses

To test the reliability of the measurement method applied to 314 people in total, the Cronbach's Alpha Test was applied and the results are given below.

Table 4.2. Results of the Reliability Analysis

Cronbach's Alpha	Number of Items
0.959	28

An examination of Table 4.3. reveals that the general reliability level of the questionnaire is as high as 95.6% (0.959).

The table showing the demographic characteristics of the participants is given below.

Descriptive Statistics

Table 4.3. Demographic Distribution of the Participants

		Number	Rate (%)
Gender	Male	227	72.3%
	Female	87	27.7%
Age	20-29	14	4.5%
	30-39	109	34.8%
	40-49	127	40.6%
	50-59	54	17.3%
	Over 59	9	2.9%
Education	High School	21	6.7%
	Bachelor's Degree	157	50.0%
	Master's Degree	127	40.4%
	Ph.D.	9	2.9%
The Sector in which the Company Operates	Information Technology	14	4.5%
	Other Services	27	8.6%
	Education Services	7	2.2%
	Finance and Insurance	20	6.4%
	Service	23	7.3%
	Manufacturing	74	23.6%
	Construction	22	7.0%
	Public Administration	1	0.3%
	Accommodation and Food Services	14	4.5%
	Mining, Quarrying, Oil and Gas Extraction	11	3.5%
	Professional, Scientific, and Technical Services	3	1.0%
	Retail Trade	34	10.8%
	Healthcare and Social Assistance	8	2.5%
	Art, Entertainment and Recreation	4	1.3%
	Management of Companies and Enterprises	5	1.6%
	Agriculture, Forestry, Fishing, and Hunting	14	4.5%
	Transportation and Warehousing	11	3.5%
	Wholesale Trade	22	7.0%
Annual Revenue of the Company (TRY)	25,000,000 – 100,000,000	90	28.7%
	100,000,001 – 200,000,000	29	9.2%
	200,000,001 – 300,000,000	19	6.1%
	300,000,001 and above	176	56.1%
Which distribution channel do you prefer for banking services?	Face to face contact at the branch of the bank	8	2.5%
	Internet Banking	231	73.6%
	Mobile Banking	69	22.0%
	Telephone Banking	6	1.9%
What is your frequency of usage of Internet banking services?	Everyday	230	73.2%
	1-3 times per week	68	21.7%
	Once per month or more	16	5.1%
What is your frequency of usage of Mobile banking services?	Everyday	182	58.0%
	1-3 times per week	96	30.6%
	Once per month or more	36	11.5%
For what purpose do you use mobile banking?	Get information about the accounts	235	74.80%
	Money transfer, EFT	274	87.30%
	Payment of invoices	195	62.10%
	Credit Card transactions	183	58.30%
	Buying or selling foreign currency	73	23.20%
	Stock exchange transactions	5	1.60%

	Time deposit transactions	90	28.70%
	Supplier payments	78	24.80%
	Staff salary payments	97	30.90%
	Import payments	43	13.70%
	Tax payments	111	35.40%
	Others	38	12.10%
What kind of application do you use in mobile banking transactions?	IOS (for Apple devices) application	210	66.90%
	Android application	102	32.50%

Observations exhibited that 72% of the participants were men. Considering the educational status of the participants, it is possible to see that their education level is quite high. Accordingly, 90% of the participants have a bachelor's degree or master's degree. The participants use the bank branch at a very low rate of 2.5%. This shows that corporate firms do not need to physically go to branches for banking transactions. Participants were observed to use Internet banking and mobile banking channels at a total rate of 95%. This state confirms that the research was done in the correct field. An examination of internet banking and mobile banking usage rates shows that while the internet banking usage rate is at a high level of 73.6%, the rate of mobile banking usage is 22%. This shows that internet banking is used extensively in corporate companies and mobile banking is still far below these rates. It is seen that banks have a way to go in technological works aimed at making mobile banking system infrastructure easier and more practical as well as launching products and applications that encourage mobile banking. The investments that banks will make in this direction will increase the rate of use of mobile banking application by corporate companies. In the last 5 years, banks have developed many products presented in mobile banking such as buying or selling foreign currency.

73.2% of the participants stated that they use mobile banking every day, 21.7% of them use it 1-3 times per week. Considering that banking transactions take place every day in corporate companies, observations revealed that internet banking is widely used. In mobile banking, on the other hand, 58% of the participants stated that they use it every day and 30.6% of them use it 1-3 times per week. The

frequency of mobile banking usage was seen to be lower than internet banking. This confirms that banks have a way to go in the field of mobile banking and that more investment is needed in this field.

An examination of the transactions using mobile banking exhibited that the participants make the money transfer and EFT transactions with a very high rate of 87.30%. 74.80% of the participants use mobile banking to get information about their accounts and 62.10% use it to make bill payments. These transactions are easy to use in the mobile banking system and of which the screen view is the simplest. Its high usage by the participants also supports this. This state guides banks in this field. The easier and more understandable banks make transactions through mobile banking, the more transactions using mobile banking will take place. This will play an important role in decreasing the operational costs of banks while increasing customer satisfaction. Lowering costs will enable banks to invest more in different areas.

An investigation of the transactions that the participants use less mobile banking revealed that the ratio of import transactions is 13.70%, the ratio of foreign currency buying or selling transactions is 23.22% and the ratio of supplier payments is 24.80%. These transactions require more complex and detailed information to be entered into the mobile banking system. This requires the persons who will perform these transactions on the part of corporate companies to have a certain level of knowledge and to be authorized to perform these transactions. Company managers prefer to carry out special transactions such as imports by sending an order to the bank. Since the operations departments of banks are experts in these transactions, they also provide some kind of consultancy service to companies by warning companies when necessary. This state is more evident in foreign trade transactions. The research results also support this state.

Supplier payments can be made to a single supplier, as well as to as many suppliers as 20 or 30. It is possible to carry out these transactions in a single file,

instead of being made one by one, by electronic file transfer to the bank. To be able to make those transactions from mobile banking, individuals who will transfer files must be authorized by the company management. Company managers may abstain from authorization. Also, the maximum amount application, which changes in each bank in these transactions, may negatively affect mobile usage.

The results of the 5 variables examined to evaluate the Mobile Banking Service Quality are shown in the table below. The SPSS 23 Program was used to make the calculations and reveal the results in tables.

Descriptive statistics for the calculated dimensions are given in the table below;

Table 4.4. Descriptive Statistics for the Dimensions

	Mean	Std. Dev.	Skewness	Kurtosis
Mobile Banking Service Quality	5.5919	.90921	-1.580	4.632
Reliability and Responsiveness	5.3844	1.01793	-1.339	2.735
Assurance and Security	5.4032	1.20812	-1.093	1.143
Convenience in Banking	5.7718	1.03811	-1.782	4.672
Mobile Banking Efficiency	5.7389	1.02965	-1.649	4.142
Easy to Operate	5.7803	1.05324	-1.763	4.398
Valid N (listwise)	314			

In Table 4.5., the mean score of 5 variables used to measure Mobile Banking Service Quality is 5.59 out of 7. This shows that corporate customers have a high perception of mobile banking service quality. It is possible to observe that Easy to Operate and Convenience in Banking variables have the highest mean scores among these 5 variables (5.78 and 5.77, respectively). Again, based on these average values, the features that corporate participants like the most in the mobile banking application are:

* Performing transactions faster than other channels (bank branch, ATM, Internet banking),
* Having access to accounts and transaction information at any time, and
* Mobile banking service is simple and easy to use.

On the other hand, it is noteworthy that the mean score of Reliability and Responsiveness is 5.38 and the mean score of Assurance and Security is 5.40. An examination of the responses given to the questions under these two variables reveals that the expectations of the participants to respond quickly and solve the problem as soon as possible in case of any problem or error in the transactions made through the mobile banking application of the bank could not be fully met.

Also, the research showed that while using mobile banking applications, corporate customers fully trust the reputation of Bank X, which they evaluated, but do not feel fully secure in sharing sensitive information in the mobile banking application. Based on this result, it is possible to indicate that it will be effective for banks to invest in the system infrastructure and strengthen their security systems so that the mobile banking system can be more secure and customers feel safer while using mobile banking.

Table 4.5. Numbers of Firms According to Their Fields of Operations

	Number	Rate (%)
Service	106	33.76%
Production/Manufacturing	99	31.53%
Sales/Warehousing/Logistics	67	21.34%
Finance and Insurance	20	6.37%
Construction	22	7.01%
Total	314	100.0%

Table 4.6. Mobile Banking Intended Use According to Sector

The Preferred Mobile Banking Service	Service		Production/Manufacturing		Sales/Warehousing/Logistics		Finance and Insurance		Construction		Total		p
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	
Get information about the accounts	79	33.60%	80	34.00 %	46	19.60 %	14	6.00%	16	6.80%	235	100.00 %	0.472
Money transfer, EFT	96	35.00%	83	30.30 %	57	20.80 %	18	6.60%	20	7.30%	274	100.00 %	0.597
Payment of invoices	77	39.50%	54	27.70 %	34	17.40 %	14	7.20%	16	8.20%	195	100.00 %	0.013 *

Credit Card transactions	66	36.10%	52	28.40 %	41	22.40 %	13	7.10%	11	6.00%	183	100.00 %	0.513
Buying or selling foreign currency	8	11.00%	42	57.50 %	15	20.50 %	3	4.10%	5	6.80%	73	100.00 %	0.001 *
Time deposit transactions	32	35.60%	27	30.00 %	18	20.00 %	9	10.00 %	4	4.40%	90	100.00 %	0.391
Supplier payments	15	19.20%	38	48.70 %	17	21.80 %	1	1.30%	7	9.00%	78	100.00 %	0.001 *
Staff salary payments	30	30.90%	40	41.20 %	17	17.50 %	2	2.10%	8	8.20%	97	100.00 %	0.042 *
Import payments	11	25.60%	24	55.80 %	4	9.30%	1	2.30%	3	7.00%	43	100.00 %	0.005 *
Tax payments	34	30.60%	44	39.60 %	20	18.00 %	4	3.60%	9	8.10%	111	100.00 %	0.120
Others	18	47.40%	9	23.70 %	8	21.10 %	0	0.00%	3	7.90%	38	100.00 %	0.198

*p<0.05

An analysis of the purposes of using mobile banking by sectors exhibits that bill payments, foreign currency buying or selling, supplier payments, staff salary payments, and import payments statistically differ according to sectors with 95% reliability. In this context, observations in the Service and Manufacturing/Production sectors revealed that bill payments are made more in these sectors through mobile banking.

Again, it was seen that foreign exchange buying or selling, import payments, and staff salary payments services made through mobile banking are used at a much higher rate in the Service and Manufacturing/Production sectors compared to other sectors. Considering that foreign trade (import, export) transactions are intense in the Manufacturing/Production and Service sectors, the results of the research support this fact.

Considering the number of companies according to their fields of activity, money transfer, EFT service is the most used service (84% -90%) in all sectors. This service is one of the simplest and most common services in digital banking. The results of the research support this fact.

Table 4.7. Mobile Banking Intended Use According to Annual Revenue

The Preferred Mobile Banking Service	25-100 M TRY		100-200 M TRY		200- 300 M TRY		300 Million and Above		Total		p
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	
Get information about the accounts	69	29.40 %	20	8.50%	15	6.40%	131	55.70%	235	100%	0.831
Money transfer, EFT	86	31.40 %	27	9.90%	15	5.50%	146	53.30%	274	100%	0.014*
Payment of invoices	55	28.20 %	21	10.80 %	15	7.70%	104	53.30%	195	100%	0.229

Credit Card transactions	57	31.10 %	19	10.40 %	13	7.10%	94	51.40%	183	100%	0.252
Buying or selling foreign currency	19	26.00 %	8	11.00 %	6	8.20%	40	54.80%	73	100%	0.729
Time deposit transactions	22	24.40 %	11	12.20 %	6	6.70%	51	56.70%	90	100%	0.554
Supplier payments	27	34.60 %	6	7.70%	6	7.70%	39	50.00%	78	100%	0.442
Staff salary payments	34	35.10 %	9	9.30%	9	9.30%	45	46.40%	97	100%	0.080
Import payments	10	23.30 %	4	9.30%	5	11.60 %	24	55.80%	43	100%	0.381
Tax payments	40	36.00 %	10	9.00%	6	5.40%	55	49.50%	111	100%	0.197
Others	8	21.10 %	5	13.20 %	2	5.30%	23	60.50%	38	100%	0.617

*p<0.05

The table above shows the transactions made through mobile banking according to company revenue. As a result of the $\chi 2$ test, it was observed that money transfer and EFT transactions differed with 95% reliability according to company turnover. The ratio of making money transfer and EFT transactions with mobile banking is over 90% in companies with a turnover between TRY 25-100 million and TRY 100-200 million. In companies with a turnover of TRY 200 million or more, this rate decreases to 80%. As the revenue increases, the volume and number of money transfer transactions of corporate firms also increase. Since companies find it safer, they make these transactions by sending instructions to the bank (if the number of transfers is low) or by sending an electronic file (if the number of transfers is high). For this reason, the usage rate of mobile banking is lower in transactions with high amounts and numbers. Research results also support this fact.

Tests

Independent sample t-test results that investigate the service quality perceptions of the participants according to their genders are given below;

Table 4.8. Service Quality Perception Averages of the Participants According to Their Genders

	Gender	N	Mean	Std. Dev.
Mobile Banking Service Quality	Male	227	5.6051	.84716
	Female	87	5.5576	1.05877

Reliability and Responsiveness	Male	227	5.3979	.96511
	Female	87	5.3493	1.14970
Assurance and Security	Male	227	5.3850	1.23329
	Female	87	5.4506	1.14535
Convenience in Banking	Male	227	5.8033	1.00099
	Female	87	5.6897	1.13121
Mobile Banking Efficiency	Male	227	5.7665	.96567
	Female	87	5.6667	1.18350
Easy to Operate	Male	227	5.7874	.98508
	Female	87	5.7615	1.21934

Table 4.9. Independent Sample t-test Results that Examine the Service Quality Perception According to Gender

Service Quality Perceptions	Levene's Test				
	F	p.	t	S.d	p
Mobile Banking Service Quality	0.765	0.382	0.414	312	0.679
Reliability and Responsiveness	0.388	0.534	0.378	312	0.706
Assurance and Security	2.376	0.124	-0.43	312	0.668
Convenience in Banking	0.529	0.468	0.868	312	0.386
Mobile Banking Efficiency	1.917	0.167	0.769	312	0.443
Easy to Operate	1.169	0.28	0.195	312	0.845

*p<0.05; $H_0: \mu_1 = \mu_2$

As a result of the independent sample t-test that investigates whether there is a statistically significant difference between the participants' perceptions of mobile banking service quality according to their gender, it is seen that the null hypothesis, which claims that the difference between the participants' mean scores is statistically insignificant, cannot be rejected with 95% reliability for all dimensions (p> 0.05). Thus, it was found that gender does not have a statistically significant effect on participants' perceptions of the quality of mobile banking services.

The results of one-way analysis of variance (ANOVA), which investigates the perception of service quality according to the age of the participants, are given below.

Table 4.10. Service Quality Perception Average of the Participants According to Their Age Groups

	20-29		30-39		40-49		50-59		Above 59	
	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d
Mobile Banking Service Quality	5.61	1.42	5.71	.74	5.51	.90	5.55	1.11	5.60	.27
Reliability and Responsiveness	5.31	1.49	5.54	.80	5.26	1.07	5.40	1.16	5.35	.58
Assurance and Security	5.46	1.44	5.49	1.14	5.33	1.19	5.39	1.40	5.33	.85
Convenience in Banking	5.76	1.41	5.89	.88	5.69	1.08	5.73	1.17	5.97	.32
Mobile Banking Efficiency	5.84	1.44	5.86	.91	5.72	1.01	5.56	1.23	5.67	.31
Easy to Operate	5.89	1.52	5.88	.96	5.73	1.04	5.70	1.19	5.72	.38

Table 4.11. The Results of the ANOVA Test that was Carried Out According to Age Groups

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	2.500	4	.625	.756	.555
	Within Groups	254.714	308	.827		
	Total	257.214	312			
Reliability and Responsiveness	Between Groups	4.744	4	1.186	1.150	.333
	Within Groups	317.661	308	1.031		
	Total	322.405	312			
Assurance and Security	Between Groups	1.547	4	.387	.262	.902
	Within Groups	454.932	308	1.477		
	Total	456.479	312			
Convenience in Banking	Between Groups	2.758	4	.689	.641	.634
	Within Groups	331.405	308	1.076		
	Total	334.163	312			
Mobile Banking Efficiency	Between Groups	3.629	4	.907	.859	.489
	Within Groups	325.174	308	1.056		
	Total	328.803	312			
Easy to Operate	Between Groups	1.907	4	.477	.429	.788
	Within Groups	342.126	308	1.111		
	Total	344.033	312			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

The above table indicates that the null hypothesis, which claims that the difference between the average scores of the participants regarding their perceptions of mobile banking service quality according to their ages is statistically insignificant, cannot be rejected with 95% reliability in terms of all dimensions as a result of the ANOVA test (p> 0,05). Thus, it is possible to observe that age does not have a statistically significant effect on participants' perceptions of the quality of mobile banking services.

The effect of the education status of the participants on the perception of mobile banking service quality was evaluated by one-way analysis of variance (ANOVA).

Table 4.12. Service Quality Perception Averages of the Participants According to Their Education Status

	High School		Bachelor's Degree		Master's Degree		Ph.D.	
	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d
Mobile Banking Quality	5.32	1.31	5.72	.79	5.50	.94	5.27	.99
Reliability and Responsiveness	5.16	1.36	5.48	.95	5.33	1.04	4.96	.80
Assurance and Security	5.38	1.25	5.51	1.15	5.32	1.21	4.71	1.79
Convenience in Banking	5.46	1.41	5.92	.87	5.65	1.12	5.59	1.14
Mobile Banking Efficiency	5.36	1.49	5.88	.87	5.64	1.11	5.61	.91
Easy to Operate	5.29	1.49	5.95	.89	5.66	1.12	5.69	1.07

Table 4.13. The Results of the ANOVA Test that was Carried Out According to Education Status of the Participants

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	6.264	3	2.088	2.564	.055
	Within Groups	252.480	310	.814		
	Total	258.744	313			
Reliability and Responsiveness	Between Groups	4.603	3	1.534	1.488	.218
	Within Groups	319.725	310	1.031		
	Total	324.328	313			
Assurance and Security	Between Groups	7.191	3	2.397	1.653	.177
	Within Groups	449.646	310	1.450		
	Total	456.837	313			
Convenience in Banking	Between Groups	8.034	3	2.678	2.521	.058
	Within Groups	329.278	310	1.062		

	Total	337.312	313			
Mobile Banking Efficiency	Between Groups	7.467	3	2.489	2.379	.070
	Within Groups	324.369	310	1.046		
	Total	331.836	313			
Easy to Operate	Between Groups	11.674	3	3.891	3.595	.014*
	Within Groups	335.538	310	1.082		
	Total	347.213	313			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

The table above reveals that the null hypothesis, which claims that the difference between the participants' mean scores for their perceptions of mobile banking service quality according to their education status is statistically insignificant, can be rejected in terms of the 'easy to operate' dimension as a result of the ANOVA test (p <0.05). However, the hypothesis cannot be rejected with 95% reliability in terms of other dimensions (p> 0.05). It is possible to indicate that the educational status of individuals has a statistically significant effect on the perception of the ease of use of mobile banking applications. The results of the post-hoc test performed to determine the group that caused the difference are given below;

Table 4.14. Post-Hoc Least Differences Test Results

(I) Education	(J) Education	Mean Difference (I-J)	Std. Error	P
High School	Bachelor's Degree	-.66492*	.24174	.006
	Master's Degree	-.37177	.24508	.130
	PhD.	-.40873	.41450	.325
Bachelor's Degree	High School	.66492*	.24174	.006
	Master's Degree	.29316*	.12416	.019
	Ph.D.	.25619	.35659	.473
Master's Degree	High School	.37177	.24508	.130
	Bachelor's Degree	-.29316*	.12416	.019
	Ph.D.	-.03696	.35887	.918
Ph.D.	High School	.40873	.41450	.325
	Bachelor's Degree	-.25619	.35659	.473
	Master's Degree	.03696	.35887	.918

As a result of the Least Differences (LSD) post hoc test conducted in terms of the 'easy to operate' dimension, it is possible to observe that the difference between bachelor's degree-high school and bachelor's degree-master's degree groups is statistically significant. Thus, it was seen that the 'easy to operate' dimension of mobile banking was effective among the participants who had a bachelor's degree.

With the ANOVA analysis, the perception of mobile banking service quality of the participants according to firm revenue was also examined. Analysis results are given below.

Table 4.15. Mobile Banking Service Quality Perception Averages of the Participants According to their Company Revenue

	Annual Revenue of the Company (Millions of TRY)							
	25-100		100-200		200-300		300 and above	
	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d
Mobile Banking Service Quality	5.48	1.09	5.89	.55	5.58	1.11	5.60	.82
Reliability and Responsiveness	5.32	1.22	5.58	.69	5.31	1.13	5.39	.94
Assurance and Security	5.33	1.44	5.76	.85	5.46	1.29	5.38	1.11
Convenience in Banking	5.61	1.31	6.10	.55	5.72	1.10	5.80	.92
Mobile Banking Efficiency	5.60	1.25	6.15	.73	5.71	1.13	5.74	.92
Easy to Operate	5.66	1.25	6.08	.81	5.86	1.13	5.79	.96

Table 4.16. The Results of the ANOVA Test that was Carried Out According to the Company Revenues of the Participants

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	3.675	3	1.225	1.489	.218
	Within Groups	255.069	310	.823		
	Total	258.744	313			
Reliability and Responsiveness	Between Groups	1.594	3	.531	.510	.675
	Within Groups	322.734	310	1.041		
	Total	324.328	313			
Assurance and Security	Between Groups	4.377	3	1.459	1.000	.393
	Within Groups	452.460	310	1.460		
	Total	456.837	313			
Convenience in Banking	Between Groups	5.586	3	1.862	1.740	.159
	Within Groups	331.726	310	1.070		
	Total	337.312	313			
Mobile Banking Efficiency	Between Groups	6.507	3	2.169	2.067	.105
	Within Groups	325.329	310	1.049		

	Total	331.836	313			
	Between Groups	4.013	3	1.338	1.208	.307
Easy to Operate	Within Groups	343.199	310	1.107		
	Total	347.213	313			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

As a result of the ANOVA test, which investigates whether there is a statistically significant difference between the participants' perceptions of mobile banking service quality according to their company revenue, it is seen that the null hypothesis, which claims that the difference between the participants' average scores is statistically insignificant, cannot be rejected with 95% reliability in terms of all dimensions (p> 0.05). Therefore, company revenue does not have a statistically significant effect on participants' perceptions of the quality of mobile banking services.

Mobile banking service quality perceptions of the participants were also evaluated by ANOVA analysis in terms of company activity areas.

Table 4.17. Mobile Banking Service Quality Perception Averages of the Participants According to their Company Activity Areas

	Service		Production/Manufacturing		Sales/Warehousing/ Logistics		Finance and Insurance		Construction	
	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d	Mean	S.d
Mobile Banking Service Quality	5.60	1.03	5.65	.65	5.59	.93	5.56	1.14	5.31	1.01
Reliability and Responsiveness	5.41	1.10	5.47	.85	5.34	1.03	5.21	1.17	5.14	1.15
Assurance and Security	5.56	1.23	5.36	1.07	5.39	1.25	5.50	1.22	4.80	1.42
Convenience in Banking	5.71	1.28	5.87	.69	5.77	1.00	5.79	1.23	5.60	1.01
Mobile Banking Efficiency	5.70	1.21	5.81	.71	5.79	1.02	5.78	1.21	5.45	1.16
Easy to Operate	5.75	1.27	5.84	.71	5.81	1.07	5.74	1.21	5.66	1.07

Table 4.18. The Results of the ANOVA Test that was Carried Out According to the Company Activity Areas of the Participants

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	2.084	4	.521	.627	.643
	Within Groups	256.660	309	.831		
	Total	258.744	313			
Reliability and Responsiveness	Between Groups	2.821	4	.705	.678	.608
	Within Groups	321.507	309	1.040		
	Total	324.328	313			
Mobile Banking Efficiency	Between Groups	2.624	4	.656	.616	.652
	Within Groups	329.212	309	1.065		
	Total	331.836	313			
Easy to Operate	Between Groups	.840	4	.210	.187	.945
	Within Groups	346.373	309	1.121		
	Total	347.213	313			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

As a result of ANOVA, which investigates whether there is a statistically significant difference between the participant' perceptions of mobile banking service quality according to the fields of activity of their companies, it was found that the null hypothesis, which claims that the difference between the participants' average scores is statistically insignificant, cannot be rejected with 95% reliability in terms of all dimensions (p> 0. 05). Thus, the results of the research reveal that the company's field of activity does not have a statistically significant effect on the participants' perception of the quality of mobile banking services.

Whether the perception of mobile banking service quality changes according to the usage channels of banking services was evaluated by ANOVA analysis. Analysis results are detailed below.

Table 4.19. Mobile Banking Service Quality Perception Averages of the Participants According to their Preferred Service Channel

	Branch		İnternet Banking		Mobile Banking		Telephone Banking	
	Mean	**S.d**	**Mean**	**S.d**	**Mean**	**S.d**	**Mean**	**S.d**
Mobile Banking Service Quality	5.80	.59	5.55	.93	5.73	.83	5.45	1.17
Reliability and Responsiveness	5.64	.77	5.35	1.08	5.49	.81	5.27	1.14
Assurance and Security	6.03	.77	5.35	1.23	5.53	1.13	5.13	1.57
Convenience in Banking	5.84	.96	5.75	1.04	5.84	1.05	5.60	1.19
Mobile Banking Efficiency	5.81	.78	5.68	1.06	5.93	.95	5.67	1.16
Easy to Operate	5.78	.82	5.71	1.10	6.04	.88	5.71	1.28

Table 4.20. The Results of the ANOVA Test that was Carried Out According to the Preferred Service Channel of the Participants

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	2.156	3	.719	.868	.458
	Within Groups	256.588	310	.828		
	Total	258.744	313			
Reliability and Responsiveness	Between Groups	1.678	3	.559	.537	.657
	Within Groups	322.650	310	1.041		
	Total	324.328	313			
Assurance and Security	Between Groups	5.285	3	1.762	1.209	.306
	Within Groups	451.552	310	1.457		
	Total	456.837	313			
Convenience in Banking	Between Groups	.627	3	.209	.192	.902
	Within Groups	336.685	310	1.086		
	Total	337.312	313			
Mobile Banking Efficiency	Between Groups	3.407	3	1.136	1.072	.361
	Within Groups	328.429	310	1.059		
	Total	331.836	313			
Easy to Operate	Between Groups	5.839	3	1.946	1.767	.153
	Within Groups	341.374	310	1.101		
	Total	347.213	313			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

The above table exhibits that the null hypothesis, which claims that the difference between the participants' mean scores for their opinions is statistically insignificant, cannot be rejected with 95% reliability in terms of all dimensions as a result of the ANOVA test that examined whether there was a significant statistical difference between the participants' mobile banking service quality perceptions of service channel preferences (p. > 0.05). The analysis showed that the service channel choice does not have a statistically significant effect on the participants' perception of the quality of mobile banking services.

One-way analysis of variance (ANOVA) results that examine the service quality perception according to the frequency of using mobile banking services are given below.

Table 4.21. Mobile Banking Service Quality Perception Averages of the Participants According to their Mobile Banking Service Usage Frequency

	Every day		**1-3 Times a Week**		**Once a Month or Less**	
	Mean	**S.d**	**Mean**	**S.d**	**Mean**	**S.d**
Mobile Banking Service Quality	5.71	.87	5.43	1.03	5.42	.65
Reliability and Responsiveness	5.53	.96	5.22	1.12	5.10	.95
Assurance and Security	5.46	1.28	5.36	1.11	5.23	1.11
Convenience in Banking	5.86	1.01	5.63	1.18	5.72	.71
Mobile Banking Efficiency	5.91	.93	5.48	1.22	5.56	.73
Easy to Operate	5.93	.99	5.54	1.22	5.64	.68

Table 4.22. The Results of the ANOVA Test that was Carried Out According to the Mobile Banking Usage Frequency of the Participants

		Sum of Squares	df	Mean Square	F	Sig.
Mobile Banking Service Quality	Between Groups	6.098	2	3.049	3.753	.025*
	Within Groups	252.646	311	.812		
	Total	258.744	313			
Reliability and	Between Groups	9.331	2	4.665	4.606	.011*

Responsiveness	Within Groups	314.997	311	1.013		
	Total	324.328	313			
Assurance and Security	Between Groups	1.828	2	.914	.625	.536
	Within Groups	455.008	311	1.463		
	Total	456.837	313			
Convenience in Banking	Between Groups	3.282	2	1.641	1.528	.219
	Within Groups	334.030	311	1.074		
	Total	337.312	313			
Mobile Banking Efficiency	Between Groups	13.186	2	6.593	6.435	.002*
	Within Groups	318.650	311	1.025		
	Total	331.836	313			
Easy to Operate	Between Groups	10.295	2	5.147	4.751	.009*
	Within Groups	336.918	311	1.083		
	Total	347.213	313			

*p<0.05; $H_0: \mu_1 = \mu_2 \dots \mu_n$

An evaluation of the results in the table above shows that the null hypothesis, which claims that the difference between the average scores of the participants' opinions on banking service quality according to the frequency of using mobile banking is statistically insignificant, can be rejected with 95% reliability in terms of mobile banking service quality (p <0.05). Therefore, it was concluded that the frequency of mobile banking usage of the participants affects the perception of mobile banking service quality. An analysis in terms of sub-dimensions reveals that the frequency of using mobile banking services affects the dimensions of reliability and responsiveness, application efficiency, and ease of use.

CONCLUSION

The banking sector is one of the leading sectors that closely follow technological developments. Digital banking (internet banking + mobile banking) is the area where banks have invested the most in recent years. Especially, the development of mobile banking services is remarkable. The pandemic in 2020 has further spread the use of mobile banking. According to the report of the Banks Association of Turkey containing 2019 March data, the number of active (logged in once in the last 3 months) customers using mobile banking was 41.8 million people, while the March 2020 data reveal that this number reached 52.5 million with a 25% increase. The main reasons for this increase are the desire of users to access banking services regardless of time and place, the increase in Internet usage with smartphones, the increase in the variety of transactions offered by the banks via mobile, the lower cost of mobile transactions, and the technological investments of banks for simpler and more reliable transaction menus. According to the March 2019 data, 40.5 million of 41.8 million users were individual and 1.3 million were corporate users. According to the March 2020 data, on the other hand, 50.8 million of 52.5 million users were individual and approximately 1.7 million were corporate users (tbb.org.tr). According to these data, 97% of mobile banking users in Turkey are individual customers and 3% are corporate customers. Developments in technology are also effective in mobile banking in Turkey where the young population is concentrated. However, the use of mobile banking in corporations is still far behind individual use.

In this study, the perception of corporate banking customers regarding mobile banking service quality was examined. For that purpose, the corporate clients of a bank, which has the authority to collect deposits, in Istanbul, Turkey were examined. A survey was conducted on 314 customers selected among these customers. The name of this bank is not mentioned because of the commercial concerns of confidentiality and the bank is named in this research as X Bank.

The perception of corporate mobile banking customers was searched using a tool that is commonly used for measuring service quality. Service quality is defined as the outcomes of the customer's overall evaluation of the differences between service expectations and the actual service performance. Therefore, service quality is conceptualized as a multidimensional construct consisting of five dimensions.

The SERVQUAL tool, which was developed and used by Parasuraman, Zeithalm, and Berry has been used for a long time to measure the expectation of the customer and actual perception about the service given. Parasuraman et al. developed a multi-item scale for assessment of electronic service quality, which they named E-S-QUAL. Using all dimensions and factors measuring service quality, a survey was developed and used by Sagib and Zapan (2014) and Malviya (2015) to measure mobile banking service quality (Sagib and Zapan, 2014, p. 335), (Malviya, 2015, p. 245).

This scale was used in this research to explore the quality of the mobile banking service and the perception of the customer. The survey questions consist of five dimensions which are Reliability and Responsiveness, Assurance and Security, Convenience, Efficiency, and Easy to Operate. The survey was translated into Turkish for application. The scale has 28 questions and all items were rated on a 7-point Likert type scale ranging from 1 for 'strongly disagree' and 7 for 'strongly agree'. The questionnaires were codified and analyzed with the SPSS program.

90% of the participants in the research have bachelor's and master's degrees. This shows that employees working in managerial positions in corporate companies have a high level of education and are conscious of using digital banking. The effect of the educational status of the participants on mobile banking service quality was evaluated by one-way analysis of variance (ANOVA). As a result of the Least Differences (LSD) post hoc test conducted in terms of the 'Easy to Operate' dimension, it was observed that the 'Easy to Operate' dimension of mobile banking was effective among the participants having a bachelor's degree.

In the study, the rate of using the bank branch is very low, which is 2.5%, while the rate of using the Internet and mobile banking channels is 95%. However, an examination of the breakdown of these reveals that the rate of internet banking usage is around 74% and mobile banking usage rate is around 22%. These rates revealed that the use of mobile banking in corporate firms is far behind internet banking. The low rate of mobile banking usage in corporate firms creates an opportunity for banks. Banks that make mobile applications simpler and more reliable and can offer tailor-made products and applications for the needs of companies will increase the share of corporate firms in mobile banking transactions.

The average of the 5 dimensions used to measure the mobile banking service quality was 5.59 out of 7 (SPSS 23 statistics program was used). A high average indicates that the perception of mobile banking service quality is high among the participants. An examination of the weights of 5 dimensions exhibits that Easy to operate (5.78), Convenience in Banking (5.77), and Mobile Banking Efficiency (5.74) appear to be the top 3 dimensions with the highest weight. The answers given to the questions about these variables in the questionnaire show the fact that in mobile banking, transactions are carried out faster than other channels (bank branches, ATMs, Internet banking), mobile banking is simple and easy to use, and access to accounts and transaction details at any time are among the most favorite features of users. Banks continue to invest in making mobile banking system login screens and transaction menus simpler and easier to direct their customers to mobile banking. Also, banks implement new applications to increase the speed of transactions and to ensure that the details of the transactions are made available at any time. In money transfers, services such as sending the receipt (in TRY transfers) and swift message (in foreign currency transfers) to the customer by e-mail after the transaction, and informing the recipient by e-mail or SMS that the money has been transferred have become routine. The survey results also confirm that the participants are satisfied with these services provided by banks. If banks

want to get ahead of the competition and increase customer satisfaction and loyalty, they should invest more in these areas.

In the survey, the weight of Reliability and Responsiveness was 5.38 and the weight of Assurance and Security was 5.40 where these were two of the dimensions used to measure mobile banking service quality. The details of the questions about these two dimensions revealed that the expectations of the participants for a quick response by the bank in case of any error or problem in the transactions made with mobile banking and the solution to be resolved as soon as possible were not fully met. Also, corporate customers were observed not to feel completely safe when sharing sensitive information in the mobile banking application.

An analysis of the transactions where mobile banking is mostly used exhibits a very high rate of money transfer and EFT transactions, such as 87.30%. Approximately 75% of them are used to get information about accounts and 62.10% for invoice payments. These transactions have simple screen usage in mobile banking and take a short time. These results are in parallel with the fact that the average of Easy to Operate, Convenience in Banking and Mobile Banking Efficiency dimensions, which have the highest weight among the 5 dimensions affecting the mobile banking service quality, is much higher than the others.

In the survey, an investigation of the transactions where mobile banking is used less shows that import transactions (13.70%), foreign exchange buying or selling transactions (23.22%), and supplier payments (24.80%) rank first. These operations are more complex, involve a higher amount of risk, are more difficult to correct when an error is made, take more time, and their control mechanism is more important. These results also support that the average of Reliability and Responsiveness, and Assurance and Security, which are among the variables used to measure mobile banking service quality, are lower than the others. Firms should delegate authorities at various levels within themselves to perform more complex transactions with mobile banking. At this point, company managers may

behave timidly. Since the risk increases as the transaction amount increase, it is considered safer to send an order to the bank, especially for transactions with high amount and requiring expertise such as foreign trade.

Banks have been focusing more on investments in digital banking in recent years. In the Covid-19 process, these works have gained importance. Due to the pandemic, banks closed their branches for certain periods and had to provide services remotely. In this process, banks have faced important responsibilities such as adapting their employees to the remote working system and ensuring the continuity of the services provided to their customers. Banks provided technical equipment such as laptops and iPads to branches and operation teams who had to work remotely to avoid disruption in services. As the remote working system reduces the cost of office and human resources, it is expected to continue and be more widely available in 2021. However, due to remote access, cybersecurity investments are also gaining importance day by day.

The uneasiness caused by the transmission of the virus with money also led customers to perform their banking transactions through digital channels instead of using physical money. QR code withdrawal and contactless payment methods are preferred more. The use of contactless credit cards has increased. With their digital credit card product, banks have offered their customers the opportunity to create a credit card electronically and shopping on the internet and mobile environment with this card. While the rate of payments made by credit card before the pandemic was around 45%, this rate increased to 65% after the pandemic. Due to hygiene concerns and health conditions, 6 million people have switched to digital payments to make contactless transactions. The share of contactless payments increased from 14% in 2019 to 44% in 2020. This rate is expected to rise to 80% in 2021 (Interpress, 29.12.2020, page 4).

Another development is that the new payment system of the Central Bank of Turkey, FAST (Fonların Anlık ve Sürekli Transferi), will be implemented on January 8, 2021. With this system, the hour limit of 17:00 in money transfer

(EFT) transactions between accounts will be removed, and EFT transactions will be made 24/7.

Banks seem to continue to invest to direct their customers to digital channels in the upcoming period. Along with the investments, various advantages should be offered to users to make mobile transactions more encouraging. Various relevant practices draw attention to the sector. For example, in foreign currency buying or selling transactions made via mobile phone, customers are given a more attractive exchange rate than a bank branch. A higher deposit rate is given in time deposit transactions made on mobile compared to a bank branch. Again, in money transfers made via mobile phone, very low expense rates are applied compared to the bank branches.

Banks have also started chatbots applications to further direct their customers to mobile banking. Thus, customers can communicate with a virtual customer representative who will assist them in the mobile application. In the future, the scope of such artificial intelligence applications will expand. Besides, banks have started to cooperate with fintech companies to develop digital applications. All these developments will increase the efficiency of banks and reflect positively on customer satisfaction.

While experiencing the fastest change in the digital field in recent years, legal regulations to be made in this field are also of critical importance. In this process of change, new regulations are needed in terms of legislation. In this context, the Regulation on Information Systems and Electronic Banking Services of Banks was published by the Banking Regulation and Supervision Agency of Turkey (BDDK) on 15 March 2020 and entered into force on 1 July 2020. With this regulation, various regulations were made in terms of legislation in the field of electronic banking, where developments such as Internet banking and mobile banking are taking place very quickly. Also, the things to be done regarding the storage, transmission, and security of personal data and sensitive information are determined by this regulation. From time to time, the legislation should continue

to be updated by the relevant legal institutions. This will positively affect users' trust in mobile banking.

Investments in mobile applications continue in the banking sector, which is one of the most important application areas of technological developments. Banks should closely monitor the service quality perception created by the mobile services they offer to corporate customers and the factors that make up customer satisfaction and develop strategies accordingly. Banks that can do this will have leading positions in the competition.

This research was carried out with a sample selected from the corporate customers of one of the private banks operating in the banking sector in Turkey. This state constitutes the most important limitation of the study. In the future, if researchers study a sample that will represent corporate firms at a higher rate then they will contribute to the development of the literature.

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APPENDIX

SURVEY QUESTIONNAIRE

A. Demographic Questions

1. Gender	
Female	
Male	
2. Please check the range that includes your age	
Under 20	
20 - 29	
30 - 39	
40 - 49	
50 - 59	
Over 59	
3. Education	
High School	
Bachelor's Degree	
Master's Degree	
Ph.D.	

B. General information

1. In which sector does your Company operate? Choose from the list below.	
Agriculture, Forestry, Fishing and Hunting	
Mining, Quarrying, and Oil and Gas Extraction	
Utilities	
Construction	
Manufacturing	
Wholesale Trade	
Retail Trade	
Transportation and Warehousing	
Information Technology	
Finance and Insurance	
Real Estate and Rental and Leasing	
Professional, Scientific, and Technical Services	
Management of Companies and Enterprises	
Administrative and Support and Waste Management and Remediation Services	

Educational Services	
Health Care and Social Assistance	
Arts, Entertainment, and Recreation	
Accommodation and Food Services	
Other Services (except Public Administration)	
Public Administration (not covered in economic census)	
2. Annual Revenue of the Company (TL)	
25.000.000 – 100.000.000	
100.000.001 – 200.000.000	
200.000.001 – 300.000.000	
300.000.001 and above	
3. Which distribution channel do you prefer for banking services?	
Face to face contact at the branch of the bank	
Telephone banking	
ATM	
Internet banking	
Mobile banking	
Other	
4. Frequency of usage of Internet banking services	
Everyday	
1-3 times per week	
2-3 times per month	
One time per month	
2-6 times per year	
One time per year	
One time in my life	
Never	
5. Frequency of usage of Mobile banking services	
Everyday	
1-3 times per week	
2-3 times per month	
One time per month	
2-6 times per year	
One time per year	
One time in my life	
Never	
6. For what purpose do you use Mobile banking? Please thick the type of transactions you do on mobile application.	
Get information about the accounts	
Money transfer, EFT	
Payment of invoices	
Credit Card transactions	
Buying or selling gold	

Buying or selling foreign currency	
Stock Exchange transactions	
Time deposit transactions	
Supplier payments	
Staff salary payments	
Import payments	
Tax payments	
Others	
7. What kind of application do you use in mobile banking transactions?	
IOS (for Apple devices) application	
Android application	

C. Mobile Banking Service Quality

Reliability and Responsiveness		**1.Strongly Disagree**	**2.Disagree**	**3.Somewhat Disagree**	**4.Neither Agree nor Disagree**	**5.Somewhat Agree**	**6.Agree**	**7.Strongly Agree**
1	My mobile banking provides prompt responses if my transaction is not processed.							
2	If there is a mistake, my mobile makes it right quickly and effectively.							
3	The bank quickly resolves mobile banking related problems.							
4	Mobile banking charges related to transaction, taxes etc. are clearly informed to me.							
5	I know exactly when my transaction will be performed.							
6	Mobile banking provides me the services exactly as promised.							
7	My mobile banking provides accurate records of all my transactions							
8	My mobile banking transaction are processed accurately.							

Assurance and Security								
9	I have full trust in my bank's mobile banking services.							
10	I feel safe in my transactions while doing mobile banking.							
11	The bank's name is well-known and has good reputation, so I have full confidence in the bank's mobile banking services.							
12	I feel secure in providing sensitive information while doing mobile banking transaction.							
13	I am sure that Bank does not misuse my personal information.							
Convenience in Banking								
14	Mobile Banking enables me to complete a banking transaction quickly.							
15	Using Mobile Banking saves time compared to going to branch, ATM or using Computer.							
16	It is easy to look for banking information.							
17	The bank provides all communication medium like SMS, email, toll free no. to communicate problems related Mobile banking.							
18	I can speak to customer service representative if there is a problem related to mobile banking transaction.							
19	All my mobile banking relevant transaction confirmation details are sent by SMS or e-mail within 24 hours.							
20	Mobile Banking is available all the time.							
Mobile Banking Efficiency								
21	It is easy to navigate i.e. get anywhere on the mobile banking site.							
22	Using Mobile Banking does not require much efforts.							
23	The Mobile Banking registration process is simple.							

24	Mobile Banking creates a positive experience for me.							
Easy to Operate								
25	Mobile Banking transaction /services are quite simple and easy to use.							
26	Using Mobile Banking it is easy to do what I want to do, for example transferring funds from my account to any other account, bill payments, etc.							
27	The interaction with the mobile banking systems is clear and understandable.							
28	Mobile Banking screen incorporates a good colour scheme, easy on the eye, visually attractive and have an effective layout.							

Source : Sagib, G. K. and Zapan B. (2014) Bangladeshi Mobile Banking Service Quality and Customer Satisfaction and Loyalty. P. 335.

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