

# Availability of Modern E-Banking Services and its Impact on Customer Satisfaction: Evidence from Commercial Banks in Iraqi Kurdistan, Duhok Governorate as a Sample.

Omar H. Ibrahim

Department of Financial and Banking Sciences, College of Administration and Economics, University of Zakho, Kurdistan Region, Iraq.

## ABSTRACT

The banking sector is one of the most important pillars of any economy around the world, as it is the main source of financing and facilitating daily financial transactions. In Iraq, particularly in the Kurdistan Region, commercial and Islamic banks are progressing slowly. Since technology is a destiny rather than a choice, banks have to facilitate their services and reach customers faster and easier through e-banking practices. This study is attempting to shed light on the impact of these services combined (E-banking) on customer satisfaction in its five dimensions: security, privacy, cutting costs, simplicity & speed, and convenience. In addition, it intends to find out whether the commercial banks in Duhok provide up-to-date electronic services. To conduct this, questionnaires were used to gather responses from customers and managers of three commercial banks in Duhok. The statistical program (SPSS) is used to analyze (132) questionnaires. Results showed that there are modern e-banking practices performed by all three banks. Moreover, it demonstrated that customers are satisfied with these services, yet, on different levels. This study included some recommendations such as security considerations, improving marketing techniques, mobile banking is a core element in e-banking. In addition, customers should be more connected to up-to-date e-services as an international request.

**KEY WORDS:** Commercial banks, E-banking services, customer satisfaction, Internet banking, Mobile banking.

## INTRODUCTION:

Technology has advanced significantly in the banking sector, playing an extremely important role in developing and delivering of services. Customers used to stop in long queues in bank halls to pay their utilities and other transactions. However, today, they can do that more easily, by pulling their cards from their wallets,

they can deposit, withdraw, and pay for any transaction. With a few easy clicks on bank websites or mobile applications, tens of financial and non-financial transactions can be done (Valchev, 2021). This is globally; however, locally we are steps late.

E-Banking is on the rise since decades, banks and customers must adapt to this ever-changing environment. Consequently, it is crucial for banks to know whether their customers are satisfied or not. Depending on their knowledge of their customers, banks can improve, provide better services and win their trust. Dealing with new technologies is more of a destiny than a mere choice. Here, banks seek the most acceptable channels to provide their services to customers, and they have to. Mobiles play a remarkable role in this story; applications are there in your hands to bring your bank transactions home (techfunnel.com).

Koya University Journal of Humanities and Social Sciences (KUJHSS), Volume 6, Issue 1, 2023.

Received 13 Aug 2023; Accepted 29 Oct 2023,

Regular research paper: Published 30 Nov 2023

Corresponding author's e-mail: [omar.ibrahim@uoz.edu.krd](mailto:omar.ibrahim@uoz.edu.krd)

Copyright ©2023. Omar Hamid Ibrahim, this is an open access article distributed under the Creative Commons Attribution License.



This paper deals with the availability of e-banking services of some commercial banks in Duhok City. As these banks are new in this area, they are attempting to attract more customers and gain a bigger market share. They are in a race to provide better e-services. However, are customers satisfied with these services? Are these services modern enough to meet customers' expectations? Thus, the goal of this paper will be to answer these questions. This study will examine the impact of e-banking on customers' satisfaction, which could lead to a stronger relationship with customers, using variables such as security, privacy, cost, simplicity & speed, and convenience.

In addition to the existing literature, this research could significantly contribute to providing evidence on e-banking's effects in terms of satisfying customers. Furthermore, this study could provide rich information for managers and decision-makers in the banking sector, which could be helpful for improving these services and having more loyal customers. Broader studies can be conducted on the topic, specifically to measure the impact of every single E-banking service on customer satisfaction. This could lead to improvements in these services by knowing weaknesses of each service.

## 2. RESEARCH METHODOLOGY

### 2.1. Statement of the Problem

Rapid technological advancement has significantly altered the world's economy and commercial environment. The financial technology used in the banking sector is also in continuous and rapid development, which requires local banks in Iraq and Kurdistan region in particular to keep pace with these developments. Therefore, banks must adopt more technology to serve their customers and even attract customers who are still using traditional banking. Globally, banking is on the peak of using financial technologies, however, locally it still straggling. Therefore the problem of the study lies in knowing conditions of e-banking in Kurdistan Region commercial banks. Whether the current e-banking services provided by commercial banks are up-to-date.

Not keeping pace with new technological services in the banking sector can affect customer satisfaction and restrict banks from expanding their operations. Since modern technological services in banking could have a serious impact on the bank's share by satisfying

customers and attracting more customers. Therefore, this research will attempt to shed light on the recent E-banking services provided by commercial banks in Duhok city and whether they meet customer expectations.

### 2.2. Research Significance

The significance of the research derived from the significance of the subject matter, as electronic banking services play a significant role in the development of the financial system and in facilitating user access to these services. In addition to their significance, these services also play a crucial role in promoting financial inclusion and streamlining both domestic and international financial transactions. The researcher observed the lack of sources on this topic locally, so it is important to discuss electronic banking services to shed more light on these services provided by commercial banks. Furthermore, this study could contribute in presenting important information which can be useful for banks and customers. Furthermore, the shortage of studies conducted to determine the level of customer satisfaction and its determinants in the KRI banking sector is the argument that supported our research and the significance of our findings.

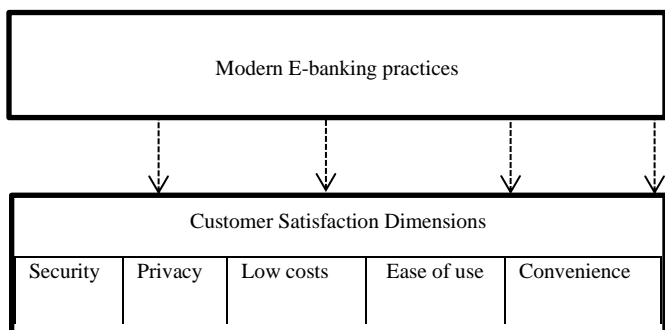
### 2.3. Research Objectives

1. This study will attempt to shed light on e-banking services in commercial banks (RT, KIB, and Cihan)
2. Whether they are meeting customers' expectations and satisfying them
3. In addition, it is attempted to show if the current e-banking is at the required level.

### 2.4. Theoretical Framework and Research Hypothesis

It is assumed that there are modern E-banking services that commercial banks in KRI use to operate. Therefore, E-banking services combined as independent variables contribute to facilitating banking services and thus satisfying customers with its five dimensions (Security, Privacy, Costs, Simplicity & Speed, and Convenience). The research results are derived from the opinions of the research sample to indicate to what extent customers are satisfied with these E-banking services combined. Furthermore, due to the lack of local relevant references, literature from different geographical areas reviewed.

Figure1. Model of the research



Source: Prepared by the Author

Depending on the model of the study researcher formed the following hypothesis:

1. (H1) The security of E-banking services positively affects customer satisfaction.
2. (H2) The privacy of E-banking services positively affects customer satisfaction.

3. (H3) The costs of E-banking services positively affect customer satisfaction.

4. (H4) The simplicity and speed of E-banking services positively affects customer satisfaction.

5. (H5) The convenience of E-banking services positively affects customer satisfaction.

### 2.5. Research Sample and Population

The researcher chose the banking sector in Duhok city as community by selecting three main commercial banks in the city (Region Trade Bank, Kurdistan Islamic Bank, and Cihan Islamic Bank). Questionnaires were distributed among customers of these banks manually and electronically. In addition, three of the major officers of these banks were interviewed to confirm the availability of modern E-banking practices. There were no specific questions asked but a table to confirm the availability of E-banking services at these banks. The results are shown in table number 4.

**Table 1:** Number of questionnaires distributed

Categories	Questionnaires distributed		Questionnaires Received		Valid questionnaires		Invalid questionnaires		Validation percentage	
	M.Q	E.Q	M.Q	E.Q	M.Q	E.Q	M.Q	E.Q	M.Q	E.Q
Customers	300	11	250	11	132	0	118	11	44%	0%
Managers	3	N/A	3	N/A	3	N/A	0	N/A	100%	N/A
<b>Total</b>	<b>303</b>	<b>11</b>	<b>253</b>	<b>11</b>	<b>135</b>	<b>0</b>	<b>118</b>	<b>11</b>		

Source: Output of data by author depended on SPSS (M.Q= manual questionnaire, E.Q= electronic questionnaire)

### 2.6. Research Boundaries

**Time boundaries:** the research started on May 1st, 2022 and ended on June 5, 2023.

**Place Boundaries:** the spatial area of research represented by three commercial banks in Duhok Governorate, (Region Trade Bank, Cihan Islamic Bank, Kurdistan Islamic Bank).

**Human boundaries:** more than a hundred customers of these banks, especially those who use e-banking services, were selected. Also, three managers of these banks were selected to ensure the existence of modern e-banking practices.

**Objective and scientific boundaries:** the research was restricted to showing the existence of

contemporary e-banking services and the impact of these services on customer satisfaction.

### 3- LITERATURE REVIEW

Banks have been able to boost transparency and competition in the financial sector through digitalization. As well as, cutting costs and expanding into new markets. Many researchers conducted studies on the topic to find how digitalization could be effective on customer satisfaction.

Gunawardana (2020) found that mobile banking has a negative influence on customer satisfaction. However, the other dimensions; internet banking, ATMs, and credit & debit cards have a positive influence on consumer satisfaction. Locally, Zanooum & Marhoum (2010) concluded in their paper that the E-banking

services could increase security and confidentiality of customer transactions.

In another study, due to some problems and challenges, banks as e-banking providers and customers as beneficiaries are still not making adequate use of e-banking. Some of these challenges include lack of infrastructure and technical advancements (Jayasiri & Weerathunga, 2008). Because e-banking services are still relatively new in some middle-eastern countries, they are still in the early stages of development and adoption (Hamoud et al, 2018). The factors of modernity and time of adapting to these services play a significant role. Wai-Ching Poon (2008) and Fassnach & Kose (2007) state that modernity and quality of these services has an important role in spreading e-banking and strengthening customer trust.

In terms of final outcomes, e-banking services and customer satisfaction have a statistically significant positive link. The dimensions used were (convenience, cost, privacy, ease of use, personalization, and security). The variables showed a positive influence on customer satisfaction (Altobishi, Erboz, & Purozsik, 2018).

E-banking series is the leading indication of customer satisfaction, as it encourages customers to stay loyal to the banks and maintain long-term and healthy relationships. This study emphasizes the impact of customer satisfaction levels on future purchase intentions by focusing on the moderating role of customer satisfaction (Khatoun, Zhengliang, & Hussain, 2020).

According to the Czech Republic General Consulate in Erbil, the banking sector in KRI plays a limited role in the financial market, consequently, in the economic growth of the region. Due to the instability of the economy and politics in Iraq, the banking sector is trembling and people hardly trust it. While, there is quick maintenance to getting people to trust the financial system. (<https://www.mzv.cz/erbil>).

Although the acceptability of e-banking services in the KRI may be a new field for research, e-banking is not a new topic, as not many studies have been conducted on it in KRI. Individual factors influence user

behavior in a favorable way, (Hamakhan, 2020). Through the findings of the conducted research, we can observe that the reliability, security, and speed of transactions of e-banking services positively influence customer satisfaction, (Kurtishi, & Hadzimusafa, 2020). No doubt, researchers might state different points of view, with the changes in technology and the emergence of new techniques as time passes by. This is not a matter of right or wrong but it's a matter of adapting to rapid development. Such as many other fields, the banking sector has undergone and is still going through changes in the techniques of servicing customers.

### 3.1. E-Banking

High technology applications have a long time in the banking sector, which has long depended on computers to operate and process checks, run automated teller machines, store data and information, and evaluate risks. However, specialists in the banking sector agree that the move to the internet has been the biggest and most rapid changes in history, driven by new and more powerful technologies (Nixon & Dixon, 2000).

#### E-Banking Definition

Historically, using the first Automated Teller Machine in Finland established a new era of banking services, and made Finland the leading country in e-banking, after that it is used by other developed and developing countries (Sharma, 2011). E-banking has been defined in a variety of ways. A personal computer, a mobile phone with a browser or desktop software, a telephone, or a digital television are just a few examples of terminal devices that can be used with different delivery platforms to deliver bank information and services to customers (Daniel, 1999). Lustsik (2004) describes E-banking services as a range of e-channels for carrying out financial transactions over the Internet, phone, TV, mobile, and PC. As technology develops and improves, banking clients' needs and expectations for service are growing. E-banking, or the provision of financial services through electronic systems, has become more popular among consumers as a result of rapid advancements in IT and bank competition (Hamoud et al, 2018). Today customers want to operate and conduct banking

business without physically visiting a bank, at any time without being constrained by bank operating hours, and in a quick and affordable manner for all of his or her payments (purchases, bills, and stocks).

E-banking is sometimes considered in the form of (ATMs) and telephone transactions. Through different practices and technological devices e-banking passes traditional banking to lead the financial industry. Also, it could be considered automated delivery of both new and traditional banking products and services to customers using electronic communication channels (Sidkar& Makkad, 2015). Hertzum (2004), defines it as web-based banking.

However, according to a report by the Basel Committee on Banking Supervision (2003), e-banking is to include the provision of retail and low-value banking products and services via electronic channels as well as a high-value electronic financial transactions (payments) and other wholesale banking services delivered electronically. With respect to the field of banking and financial services, e-banking has been described as a product of e-commerce.

Recently, e-banking has been changed by the internet. The Internet offers faster access to bank services for customers that is more appropriate and available 24/7 (Chavan, 2013). By visiting any regular bank website, we can find a menu titled: E-banking, which contains several electronic services, like mobile banking, internet banking, credit & debit cards, and etc. Like other areas, the banking sector is constantly inventing new techniques to provide easier and faster services.

E-banking systems grow, and customers adapt to the modern ways of conducting their financial transactions (Shah& Clarke, 2009). One of the fast-growing e-banking services is mobile banking, which allows customers to handle their financial transactions while lying at home. (Ahmadi & Narci, 2022), says that mobile banking has a positive and significant influence on customer satisfaction, thus, improved mobile banking can be indispensable services nowadays. Technology will never stop surprising us. In Sweden in 2018, thousands of people have had microchips inserted under their hands. This new technology replaces bank cards, cash, and even keys (Brown, 2019).

Actually, providing banking services electronically is not a new topic. But, in KRI, it appeared recently (Hamakhan, 2020). Some commercial banks in KRI use common e-banking practices, for example, RT bank in Erbil, which has branches in five big cities across Iraq; they place tens of their ATMs in banks and commercial centers. Also, it has an application on mobile; customers can do their financial transactions through it. However, (Kurdish society) are still a cash society, and banks are still struggling to attract new customers, unfortunately. Despite providing new technologies in banking service, banks in KRI still suffer from absence of banking awareness and distrust of people against bank activities.

### **The significance of E-Banking**

Number of customers who prefer E-banking is growing according to Forbes Advisor U.S. Consumer Banking Statistics study (Strohm and Horton, 2023). Traditional banking services aren't appealing anymore; therefore local banks must do fundamental changes in providing banking services. Unquestionably, cutting-edge technology and data-driven insights can significantly enhance the banking experience for clients, making it simpler, easier, and more secure. As Gates says: "Banking is necessary; banks are not" (De Silva, 2019). Many other platforms provide fast banking services on internet, even not all services, but important ones. Fast Pay which I paid this research's fees is an active platform for transferring money locally. The threats coming from online platforms are crucial for banks, thus improving banking services for commercial banks is persistent. Those services are significant for customers because:

1. They save time and effort.
2. Available 24/7 day once internet is accessible.
3. Secure and private.
4. Manage funds in more sufficient ways.
5. Connect financial institutions together.
6. Accessible to international finance.
7. Many others.

### **The Objectives Of E-Banking**

E-banking is a system that uses the internet and telecommunication networks to offer users a variety of online banking services. Customers can use this

method to access their bank accounts online and carry out different financial transactions.

#### **To attract customers**

Attracting consumers is one of the key goals of e-banking. By offering online services, e-banking benefits the users. It is drawing in clients and making the banking process simpler and cheaper.

#### **To Provide Liquidity**

Due to consumer online transactions, which prevent cash withdrawals, e-banking aids in the provision of liquidity to the banks.

#### **To boost economy:**

Because internet transactions keep money in circulation, which can be used during economic downturns, e-banking contributes to economic growth.

#### **To Provide 24/7 Service**

People are conducting business abroad, and the global economy is expanding. 24/7 banking service is necessary. The same 24-hour service is provided by e-banking. It ranks highly among e-banking's key goals.

#### **Basic E-Banking Services**

For some people, e-banking means 24/7 access to cash through an ATM or paycheck into an account or direct deposit. However, e-banking contain many other transactions and practices, like:

##### **Automated Teller Machine (ATM)**

It's an electronic machine located in public places like malls, city centers, and banks. This machine is connected to a data system and related equipment and activated by the bank; a customer can receive withdrawal cash and other banking transactions. According to Kass (1994), it was the first form of e-banking.

##### **Bank Cards**

With 16-digit card numbers, expiration dates, EMV chips, and magnetic strips, debit cards and credit cards typically look almost identical. However, when using a debit card, you can only spend the money in your current account. While, with credit cards customers are allowed to borrow money from the bank, but then repay it with interest charged on the

surplus amount borrowed. By using these cards, customers can withdraw cash from ATMs and make cashless transactions online and offline.

#### **Internet Banking**

Internet banking can be used from the home or anywhere you like. In order to handle their accounts, users just need a personal computer or any other devices. Customers can pay bills, view account balances, request transfer of money between accounts with effortless and rapid clicks on the keyboard. This service lets clients access their information and data at any moment (Okiro & Ndungu, 2013), by some easy click on the bank's website at any time.

#### **Mobile banking**

It refers to the provision and use of banking and financial transactions and services with the help of mobile telecommunication devices (Nicoletti, 2014). Customers can perform many transactions by using applications downloaded on their smartphones, like; paying bills, transferring money between accounts, remote check deposits, managing overdraft, and many others.

#### **E-Banking Evolution**

E-banking has evolved from practically insignificance to millions of users around the world (Christiansen, 2001). Moreover, it's a product of different generations of electronic transactions. Today's web-based internet or e-banking is the latest in several systems generations, including ATMs, telephone banking, PCs and house banking. An (ATM) is the first known machine to provide electronic access to customers and users, and like telephone banking, users can call the bank's computer system with a regular phone. Used to execute banking transactions, PC banking has replaced telephone banking, allowing users to interact with banks via a computer with a dial-up modem connection to the telephone network. Phone and PC Banking had maintenance costs associated with keeping various modems up to date and avoiding complex installation procedures.

After this mutation, Deutsche Bank established the first internet banking project in Latin America in 90s. Also, Citibank developed an e-toolkit used in all its branches around the world. However, in 1995, Wells Fargo (American Bank) became the first bank in the world to start offering their customers access to their

accounts via the internet, (according to the Online Banking Report), (Nixon & Dixon, 2000). With the coming of the internet and the launching of online banking, customers started to do their transactions from home without visiting offices and waiting in lines, (SCN, 2001).

E-banking has undergone major shifts, from calling customers to sharing information, to placing microchips under the hand's skin. In order to satisfy customers and increase their market share, banks are always trying to provide cheap and on-time services.

### 3.2. Customer Satisfaction

#### Definition Of Customer Satisfaction

The search for a high level of quality services has a long history and tradition in history (Zeithaml, Parasuraman, & Berry, 1990). Yet, scholars and specialists have different points of views on customer satisfaction concepts. In the 1970's, hundreds of researches came out on customer satisfaction, various theories that have tried to explain how it works and what affects customer satisfaction (Clinton & Wellington, 2013). The most and widely remarkable theory was the expectancy disconfirmation paradigm developed by Oliver (1980), Churchill and Surprenant (1982) or Tse and Wilton (1988), which establishes that customer satisfaction can be considered as the difference between expected and perceived product performance, expectations as predictions of future performance.

In the advent of new millennia, technology uprising has an impact mostly on all areas of human life. The coming new technological practices have changed service concepts (Gautam, 2013). Oliver (1980) defined customer satisfaction as the higher levels of customer fulfillment of expectations on the product or service. However, Kotler (2012) defines it as "a person's feeling of pleasure or disappointment which resulted from comparing a product's perceived performance or outcome against his/her expectations".

Banks like other institutions are in a race to provide the best services to customers; a happy and satisfied customer became a priority. Higher the quality of services the more loyal customers, the more loyal customers the higher market shares and profitability. Customer satisfaction most of the time is connected to the quality of services provided. Furthermore, the quality could surround institutions with more loyal

customers. In advertising services, loyalty is considered the most important. According to Gremler and Brown (1990), loyalty behavior refers to the repeated buying of goods/services of a specific brand for a long period of time. Therefore, satisfaction could lead to a lasting relationship between banks and customers. Then, customers will be more loyal, when satisfaction grows to higher levels.

#### Factors influencing customer satisfaction in banking sector

Customer satisfaction gives businesses insight into areas that require development or other opportunities to enhance services and build a solid reputation. A satisfied customer means business could continue longer. They considered more than just a chain's end. One could argue that a company's customers are its most important asset. Customer satisfaction matter for banks because it has direct influence on his/her loyalty. In addition, it can predict future intentions (Rana, 2022). However, customers need factors to be satisfied such as:

1. Accessibility: 24/7.
2. Response time: the readiness to assist clients and render fast service.
3. Convenience:
4. Simplicity: ease of conducting transactions.
5. Quality: providing high quality services.
6. Reasonable prices: reducing costs of these services.
7. Security: strengthening security of financial transactions
8. Privacy: keeping customer data and transactions in private.
9. Empathy: giving clients compassionate customized attention (could be excluded in this research, because regularly, e-banking transactions are conducted remotely).
10. Others.

#### Importance of customer satisfaction

Making sure customers are satisfied is no longer an optional chore, but rather a requirement for any successful firm in today's fiercely competitive industry (Patil & Rane, 2023). Customer satisfaction is crucial because it shows whether your target audience approves of what you're doing. Excellent customer satisfaction increases customer retention, increases customer lifetime value, and boosts business

reputation. In addition, it drives customer loyalty, which means repeating purchases (Franklin, 2023). Moreover, it boosts customer acquisition.

#### 4. DATA ANALYSIS AND FINDINGS

##### Introduction

This part deals with presenting and analyzing the results of the respondents of the study sample by presenting the frequencies, percentages. In addition, the regression analysis tests have been entered and conducted.

##### 4.1 Descriptive Statistics of Study Sample Characteristics

The table 2 shows that (71.2%) of participants were males, while (28.8%) were females. This could indicate the participation of the females in the trading field is progressing and thus the use of E-banking channels in conducting financial transactions. While, age factor shows that (40.9%) of them were younger than (35) years, (43.9%) were between (35-45) years, and (15.2%)

were older than (45) years, which might show that younger generations prefer E-banking. The education factor shows that education plays a good role in using e-banking services. (52.3%) of participants were bachelor degree holders, (24.2%) of them were school certificate holders, and (18.9%), (4.5%) were Master degree and Phd holders, respectively. (74.2%) of customers are dealing with one bank, while (25.8%) are dealing with more than one bank. Regarding experience with banks transactions, (53%) of participants have short experience in dealing with banks. While, (32.6%) of them had longer history, which was (5-10) years, and (14.4%) of them were bank customers for longer than (10) years. Only (16.7%) of these customers are employees, (25%) are working in the commerce sector. (18.2%) were working for organizations, while (40.2%) of them are from different occupations.

Table 2: Individual characteristics of research sample

No			Frequencies	Percent %
1	Gender	Male	94	71.2
		Female	38	28.8
2	Age	Less than 35	54	40.9
		35-45	58	43.9
		More than 45	20	15.2
3	Educations	School	32	24.2
		Bachelor	69	52.3
		Master	25	18.9
		PHD	6	4.5
4	Number of banks dealing with	1	98	74.2
		More than 1	34	25.8
5	Experience with banks	Less than 5	70	53
		5—10	43	32.6
		Above 10	19	14.4
6	Work area	Employee	22	16.7
		Commerce	33	25
		Organizations	24	18.2
		Others	53	40.2
		<b>Total</b>	<b>132</b>	<b>100%</b>

Source: Output of data analysis by author depended on SPSS.



## 4.2. Descriptive Statistics of the Study Variables

It is worth noting that the questions were formulated to include E-banking as independent variable and customer satisfaction dimensions with these services. The reason is that this research investigates E-banking as a single variable that includes multiple services without studying each one separately. For example, question number 20 is related to one of the E-banking services provided by banks which are (ATMs). The availability of these services in nearby makes customer conduct financial transactions more conveniently.

### Descriptive Statistics of E-banking and Customer Satisfaction

Table (3) shows the responses of respondents and the level of satisfaction across all three banks in the study sample on the dimensions of customer satisfaction on e-banking services (X1-X20).

Indicators (X1-X4) show how respondents value security of their financial transactions in banks. We can observe that in the (X1) indicator, respondents tend to trust e-banking security (65.2%) with mean (3.46) and standard deviation (23.14). However, due to unethical hacking in the financial sector, they are hesitant to fully trust. In (X4) indicator, (48.5%) of respondents see they don't believe that banks can defend against cyber-attacks, despite the fact that only 2 of the 132 respondents revealed they had been exposed to cyber problems. In other words, they trust banks but can't trust the risks coming from cyber-attackers with mean (2.45) and standard deviation (19.55). Another critical bank priority is customer privacy. Indicators (X5-X8) show how respondents value the privacy that banks offer; indicator (X8) shows that, (64.4%) of respondents think that their data privacy is a bank priority and with the mean was (3.65), standard deviation (20.57). They believe that their data is protected, at least for this moment. However, indicator (X7) shows that (46.2%) of them believe that this data is vulnerable to cyber-attacks with mean (3.46) and standard deviation (23.14).

Price can have a significant impact on a bank's share in any market. Providing cheap services can attract more customers, indicators (X9-X12) showing

customers' satisfaction on price paid for receiving e-banking services. Most customers are satisfied with the prices e-banking offers compared to traditional banking services with (89.4%), mean (4.06) and standard deviation (34.73) in indicator (X9). On the other side, providing devices and machines such as (POS) and (ATMs) are still at the lowest level, as shown in indicator (X12) with (28%) with mean (3.46) and standard deviation (13.75). According to the indicators (X13), and (X14), the majority of respondents believe that e-banking services can be completed easily and quickly, with percentages (90.2%) and (96.2%), mean (4.18) (4.31) and standard deviation (32.02) (35.61) respectively. But, lack of fully-instructed services, can make it difficult for new e-banking users with (36.4%), mean (3.20) and standard deviation (9.01) in indicator (X15).

You can conduct your financial transactions at home with a few easy clicks or anywhere you desire. Respondents agree that if E-banking is available you are able to do your financial transaction everywhere at any moment, with (92.4%) in indicator (X19) with mean (4.28) and standard deviation (32.43). This could be applied to internet banking and mobile banking, but to withdraw some cash you may need to reach ATMs, which are placed in public places. Customers are bothered with the bank card (credit and debit) service with a 19.7% indicator (X20), mean (2.44), and standard deviation (14.36), due to the lack of ATMs in many locations.

**Table 3.** Frequencies Distribution

Variables	Strongly agree		Agree		Neutral		Disagree		Strongly Disagree			
	Frequencies	Percent%	Frequencies	Percent%	Frequencies	Percent%	Frequencies	Percent%	Frequencies	Percent%	Mean	Standard Dev.
<b>Security</b>												
X1	19	14.4	67	50.8	21	15.9	16	12.1	9	6.8	3.462121	٢٢,١٤
X2	13	9.8	41	31.1	38	28.8	24	18.2	16	12.1	3.083333	١٢,٦٦
X3	8	6.1	45	34.1	45	34.1	24	18.2	10	7.6	3.128788	١٨,٠٦
X4	5	3.8	10	7.6	53	40.2	36	27.3	28	21.2	2.454545	١٩,٥٥
<b>Privacy</b>												
X5	10	7.6	66	50	25	18.9	24	18.2	7	5.3	3.363636	٢٢,٥٦
X6	10	7.6	71	53.8	29	22	17	12.9	5	3.8	3.484848	٢٦,٥١
X7	6	4.5	7	5.3	58	43.9	30	22.7	31	23.5	2.44697	٢١,٦٦
X8	26	19.7	59	44.7	29	22	12	9.1	6	4.5	3.659091	٢٠,٥٧
<b>Cutting costs</b>												
X9	34	25.8	84	63.6	4	3	9	6.8	1	0.8	4.068182	٣٤,٧٣
X10	22	16.7	65	49.2	14	10.6	25	18.9	6	4.5	3.545455	٢٢,٨١
X11	50	37.9	66	50	12	9.1	3	2.3	1	0.8	4.219697	٢٩,٦٨
X12	9	6.8	28	21.2	40	30.3	16	12.1	39	29.5	2.63634	١٢,٧٥
<b>Simplicity and speed</b>												
X13	45	34.1	74	56.1	6	4.5	7	5.3	0	0	4.189394	٣٢,٠٢
X14	48	36.4	79	59.8	3	2.3	2	1.5	0	0	4.310606	٣٥,٦١
X15	24	18.2	42	31.8	22	16.7	25	18.9	19	14.4	3.204545	٩,٠١
X16	26	19.7	46	34.8	33	25	15	11.4	12	9.1	3.44697	١٢,٨٣
<b>Convenience</b>												
X17	42	31.8	72	54.5	6	4.5	12	9.1	0	0	4.090909	٣١,١٧
X18	37	28	71	53.8	10	7.6	12	9.1	2	1.5	3.977273	٢٨,١٦
X19	51	38.6	71	53.8	6	4.5	4	3	0	0	4.280303	٣٢,٤٣
X20	9	6.8	17	12.9	40	30.3	24	18.2	42	31.8	2.44697	١٤,٢٦
Total percent				59.66	18.71		21.625					

Source: Output of data analysis by author depended on SPSS

### 4.3. Testing Research Model and Its Hypothesis

The aim of this study is to identify the impact of e-banking services on customer satisfaction with its five dimensions, and to verify their validity as following:

#### Availability of E-Banking Services In Duhok Banks

To confirm the availability of modern e-banking, 3 major officers in these banks were asked to fill the following table. In addition, websites and app stores on the mobile of these banks were inspected; the result is shown in table (4):

Table 4: Availability of E-banking practices

E-banking practices	Cihan Islamic bank	Region trade bank	Kurdistan Islamic bank	Status of service
ATMs	✓	✓	✓	Active
Bank cards	✓	✓	✓	Active
Internet banking	✓	✓	✓	Active
Mobile banking	✓	✓	✓	Active
Microchips	X	X	X	X

Source: Output of Data by Author

**Analyzing Study Variables**

in this part of analysis, linear correlation analysis (Pearson Correlation) has been conducted for each of; dependent variable (e-banking) and independent variable (customer satisfaction with its five dimensions). Also, the five hypotheses have been tested as shown in the table (5):

Table 5 illustrates that there is an impact relationship between e-banking and combined customer satisfaction dimensions. This is in relation to the value of coefficient correlation between them, which is (0.72) at level (0.01). This means that any advancement and update in e-banking delivery channels could increase customer satisfaction.

While, in the case of testing the impact of e-banking services on the dimensions of customer satisfaction individually, it was noted that there were varying impact relationships with significant indications, as a clear effect was observed on the level of security alone and e-banking services combined, based on the value

of the correlation coefficient between them, which was (0.675) at the significance level (0.01). And this means that customers are satisfied with the security of e-banking services commercial banks provide by (67%). As for the rest of the individual customer satisfaction dimensions (privacy, costs, ease of use & speed, and convenience), we observed a varying impact, based on their correlative and extreme values (0.728, 0.588, 0.543, 0.489) respectively at the level of significance (0.01). These results indicate that the more banks develop their e-banking services; bank could have much more satisfied customers will be. In other words, customers prefer developed e-banking rather than traditional ones with percentages (73%, 56%, 54%, 49%) respectively within the limits of the sample taken. However, it has a moderate impact and has significant indications. Hypotheses (2-6) are supported by preceding analysis of the impact outcomes between the key research variables.

Table 5. Impact of E-banking on customer satisfaction

Independent v.	Security	Privacy	Cutting costs	Simplicity and speed	Convenience	Customer satisfaction dimensions (combined)
Dependent v.						
Customer satisfaction	0.675**	0.728**	0.588**	0.543**	0.489**	0.721**
** impact is significant at 0.01 level						n=132

Source: Output of data analysis by author depended on SPSS

Moreover, we depended on the values of the coefficient of determination (R<sup>2</sup>) and (F) test to detect the extent of the impact of e-banking services on customer satisfaction with its five dimensions combined as shown in Table No. (6).

As shown by the value of (R<sup>2</sup>), which is (0.941), that e-banking impact customer satisfaction with its five dimensions (94.1%). On the other hand, there are (5.9%) of other factors that may affect customer

satisfaction, but were not taken into account in this study. Likewise, the calculated value of (F) was high, as it reached (76.24) at the level of significance (0.05) and the degree of freedom (4), which means that there is a relationship with a significant impact of electronic banking services on the dimensions of customer satisfaction combined.

Table 6: Impact relationship of e-banking on customer satisfaction dimensions (combined)

Dependent v.	Customer satisfaction					
	R square	B <sub>0</sub>	B	F Test		F
T				t sig.		
Independent v.						76.24 0.015 sig.
e-banking	0.941	0.347	0.320	4.704	0.003	
Significant at 0.1 level						

Source: Output of data analysis by author depended on SPSS

Moreover, we depended on the values of the coefficient of determination (R<sup>2</sup>) and (F) test to detect the extent of the impact of e-banking services on customer satisfaction with its five dimensions combined as shown in Table No. (6).

As shown by the value of (R<sup>2</sup>), which is (0.941), that e-banking impacts customer satisfaction with its five dimensions (94.1%). On the other hand, there are (5.9%) of other factors that may affect customer satisfaction, but were not taken into account in this study. Likewise, the calculated value of (F) was high, as it reached (76.24) at the level of significance (0.1) and the degree of freedom (4), which means that there is a relationship with a significant impact of electronic banking services on the dimensions of customer satisfaction combined.

## 5. CONCLUSION AND RECOMMENDATIONS

### 5.1. Conclusion

E-banking is on the rise, and banks are not the only providers. Therefore, banks are in a race to satisfy customers more, and customers must adapt to this ever-changing environment. Consequently, it is crucial for banks to know whether their customers are satisfied or not. For that purpose, in the last few pages we attempted to answer some questions to illustrate

whether these banks have modern common e-banking practices, and whether customers are satisfied with e-banking of three studied banks. Regarding the availability of modern e-banking, it was confirmed by banks that the basic e-banking practices are available and active. Also, websites and mobile app stores are inspected to confirm the bank's statement.

The statistical analysis showed that there is a significant impact of e-banking on customer satisfaction. However, it was observed that there were varying impact relationships with significant indications, as a clear effect was observed on the level of security alone and e-banking services combined, based on the value of the correlation coefficient. The results of this study suggest that there is considerable work to be done in the area of raising awareness about the E-banking. Furthermore, banks should organize public exhibitions and talk shows and make products accessible to all customers. In addition, they should improve their service delivery to justify the benefits. Lastly, the government should establish an effective regulatory framework to guarantee customer protection and transaction security. Bank clients' trust in online banking would be preserved in this way. Empirical analysis and results of the findings prove that all hypotheses are verified, however at different levels.

## 5.2. Recommendation

1. Banks must take the security of e-banking seriously since cyber-attacks are on the rise. Implementing efficient strategies of defence is crucial to gaining customer trust and satisfaction. In addition, providing instructions and guidelines that increase customers' awareness of how to secure their financial data against theft and hacking.
2. Educating customers about e-banking and teaching them how to use them is crucial. Teaching customers how to use these services increases their confidence in these banks and increases the possibility of attracting many other customers.
3. Spreading more ATMs and making them more easily accessible. It allows customers to withdraw and deposit without visiting banks when needed.
4. Commercial banks in KRI lack professional marketing; as some bank officers have stated they depend on social media to promote their services to the public. These banks must spend much more money on marketing to attract more customers.
5. Banks must distribute more (POS) machines in the market to ease using bank cards in financial transactions such as (buying and selling). One of the most important reasons for not using smart cards is the lack of point-of-sale devices, which undermines the use of these cards, which are one of the most important means of using E-banking services.
6. Using mobile banking is much cheaper than in-person financial transactions. This is another impressive reason for customers to adapt to e-banking.
7. Government should assist commercial banks and the public to be more adoptable to E-banking services. These banks lack popularizing E-banking, more latest marketing tools should be used to introduce these services to public.
8. This research aimed to shed light on E-banking services in Dohuk city and to demonstrate the impact of these services combined on customer satisfaction. It may suffer from some shortcomings, as there are various E-banking services and the impact of these services can vary, therefore more research can be conducted, especially on each individual service separately which might show more accurate results.

## 6. REFERENCES

### Research and Studies

- Altobishi, T, Erboz, G, & Podruzsik, S. (2018). E-banking Effect on Customer Satisfaction: A Survey on Clients in Jordan Banking Sector. *International Journal of Marketing Studies*, Vol. 10 No 2. (7).
- Brown, L. (2019). Swedes are getting implants in their hands to replace cash, credit cards: A report from [www.nypost.com](http://www.nypost.com).
- Christiansen, H. (2001). Electronic finance: Economics and institutional factors, OECD Financial Affairs Division Occasional Paper No. 2.
- Chavan, J. (2013). Internet banking- Benefits and Challenges in an Emerging Economy. *International Journal of Research in Business Management (IJRBM)*, Vol 1, 19.
- Clinton, A. & Wellington, T. (2013). Theoretical framework of users' satisfaction\ dissatisfaction, theories and models. 2nd International Conference on Arts, Behavioral sciences and economic issues, 17-18, 2013 Pattaya (Thailand).
- Daniel, E. (1999) Provision of Electronic Banking in the UK and the Republic of Ireland. *International Journal of Bank Marketing*, 17, 72-82.
- Fassnacht, M. & Kose, I. (2007). Consequences of Web-based Service Quality: Uncovering a Multi-faceted Chain of Effect. *Journal of Interactive Marketing*, 21 (3), 35.
- Gunawaradna, T.S.L.W, (2020). The Impact of E-Banking on Customer Satisfaction in Private Commercial Banks in Sri Lank. Conference Paper, 17.
- Gautam, V. (2013). Measuring the impact of new technologies through electronic banking on profitability of banks: Evidence from Indian banking industry. *Research scholar*.
- Gremler, D.D., & Brown, S.W. (1999). The loyalty ripple effect: appreciating the full value of customers. *International Journal of Service Industry Management*, 10(3), 271-291.
- Hamoud, J, Bizri.R.M, & El Baba. I (2018). The Impact of E-Banking Service Quality on Customer

- Satisfaction: Evidence from the Lebanon Banking Sector. (9).
- Hamakhan, Y.T.M. (2020). The Effect of Individual Factors on User Behavior and the Moderating Role of Trust: An Empirical Investigation of Consumers' Acceptance of Electronic Banking in the Kurdistan Region of Iraq. (23).
- Hertzum, M., Juul, C.N., Jorgensen, N., & Norgaard, M. (2014). Usable security and e-banking: Ease of use vis-à-vis security. Technical report from [www.ruc.dk](http://www.ruc.dk).
- Jayasiri, N.K. & Weerathunga, W.A. (2008). Popularity of E-Banking in Sri Lanka. (323).
- Khatoon, S., Zhengliang, X., & Hussain, H. (2020). The mediating Effect of Customer Satisfaction on the Relationship between Electronic Banking Service Quality and Customer Purchase Intention: Evidence from the Qatar Banking Sector. (10).
- Kurtishi, T.V., & Hadzimustafa, Sh. (2020). Digitization of Banking Services and its Impact on Customer Satisfaction: Case, Republic of North Macedonia. Management International Conference. (8).
- Kotler, P., Keller, K., Brady, M., & Goodman, M. (2012). Marketing Management. Harlow Pearson Education.
- Kass, R. (1994). Looking for the link to customers. Bank System and Technology, 31 (2), 64.
- Nicoletti, B. (2014). Mobile banking: evolution or revolution. 1st edition, pp.25.
- Nixon, B., Dixon, M., (2000). E-banking: Managing your money and transactions online. First edition, February, 2000. (9).
- Okiro, K. & Ndungu J. (2013). The impact of mobile and internet banking on performance of financial institutions in Kenya. European Scientific Journal, edition Vol 9, No. 13, May 2013.
- Oliver, R.L. (1980). A cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. Journal of Marketing Research, 17(4), 460-460.
- Patil, D. & Rane, N. (2023). Customer experience and satisfaction: Importance of customer reviews and customer value on buying preference. International Research Journal of Modernization in Engineering Technology and Science. Vol 05, Issue 03. March, 2023.
- SCN Education, B.V. (2001). Electronic banking: The Ultimate Guide to Business and Technology of Online Banking, 1st edition. (16).
- Sikdar, P., Kumar, A., Makkad, M. (2015). Online Banking Adoption: A Factor Validation and Satisfaction Causation Study in the Context of Indian Banking Customers. International Journal of Bank Marketing, 33, 760-785.
- Sharma, H. (2011). Bankers' Perspectives on E-Banking. Global Journal of Research in Management, 1(1), 71-85.
- Shah, M. & Clarke, S. (2009). E-banking Management; Issues, Solutions, and Strategies. pp.29
- Tiba, A. & Muhammed, T. N. (2022). The Impact of Mobile Banking Service on Customer Satisfaction and retention; A Study of Turkish Banks. International Journal of Innovation and Economic Development, Vol 8, issn 1849-7551, August, 2022.
- Wai-Ching, P. (2008). Users Adoption of E-banking Services; The Malaysian Perspective. Journal of Business and Industrial Marketing, 23 (1).
- Zanoum, N. & Marhoum, M. (2010). Obstacles to the Application of E-banking in the Arab Banking Sector, Baghdad Journal of Economic Sciences, No (25).
- Zeithaml, V.A., Parasuraman, A., & Berry, L. (1990). Delivering Service Quality. New York; the free press.

#### Internet Links

[https://www.mzv.cz/erbil/en/trade\\_and\\_economy/business\\_guide\\_for\\_czech\\_companies/banking\\_system\\_and\\_process\\_of\\_opening/index.html](https://www.mzv.cz/erbil/en/trade_and_economy/business_guide_for_czech_companies/banking_system_and_process_of_opening/index.html).

[Accessed on 23 June 2022].

Valchev, M. (2021). 10 Innovations That Deliver the Digital Banking of the Future. Retrieved from: <https://www.softwaregroup.com/insights/blog/article/10-innovations-that-deliver-the-digital-banking-of-the-future-today>. [Accessed on 29 June 2022].

<https://www.techfunnel.com/fintech/mobile-banking/>.

Strohm, M. and Horton, C. (2023). 5 Benefits of Digital Banking. Retrieved from: <https://www.forbes.com/advisor/banking/benefits-of-digital-banking/>. [Accessed on 23.09.2023].

De Silva, T. (2019). Banking is necessary; banks are not. Retrieved from: <https://taamarad.medium.com/banking-is-necessary-banks-are-not-bill-gates-2ce424b9fb75>. [Accessed on 24.09.2023].

Rana, J. (2022). 12 Key Factors That Affect Customer Satisfaction Level. Retrieved from: <https://www.revechat.com/blog/factors-affecting-customer-satisfaction/#:~:text=The%20three%20big%20things%20that,service%20they%20received%20from%20you>. [Accessed on 27.09.2023].

Franklin, A. (2023). What is customer satisfaction? Definition and importance. Retrieved from: <https://www.zendesk.com/blog/3-steps-achieving-customer-satisfaction-loyalty/#:~:text=hold%20you%20back.-,The%20importance%20of%20customer%20satisfaction,and%20a%20stronger%20brand%20reputation>. [Accessed on 26.09.2023].