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FACTORS AFFECTING ACCEPTANCE OF MOBILE BANKING IN LIBYA

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FACTORS AFFECTING ACCEPTANCE OF MOBILE BANKING IN LIBYA

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Wireless technology rapid advancements and the intensive penetration of mobile phones have motivated banks to look for a new banking medium through which banking services can be provided that is the mobile banking medium which many banks around the globe have spent large budget on building mobile banking systems. The adaptation of mobile banking technology enables banks customers to access banks services anytime and anywhere, however, the adoption rate of mobile banking is still underused than expected. This study aimed to investigate factors influencing the acceptance of mobile banking in Libya. To assist in identifying these factors, a detailed research was carried out to identify the current problems faced by the Libyan banks customers, the acceptance of mobile banking in different countries around the world, the importance of adopting this technology to both parties: banks and customers in Libya. This project employs the Technology Acceptance Model to investigate what impacts people to acceptance mobile banking. A survey was developed to obtain responses from various segments of the society. The project findings showed that factors like Perceived ease of use, perceived usefulness, and Facilitating conditions have significant imapcts on consumer's behavioral intentions for the acceptance and usage of mobile banking technolog in Libya.

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APPROVAL

I certify that this project report, which is entitled **" Factors Affecting Acceptance of Mobile Banking in Libya ",** was prepared by **ASHOUR A.N. MOSTAFA,** and it has met the required standard for submission in partial fulfillment of the requirements for the award of Master of Information Technology (MIT) at Infrastructure University Kuala Lumpur.

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DECLARATION

I declare that the project report is my original work except for quotations and citations which have been duly acknowledged. In addition, I declare that it has not been previously, and it is not concurrently, submitted for any other degree at Infrastructure University Kuala Lumpur or at any other institutions.

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CHAPTER 1

INTRODUCTION

1.1 Project Overview

Mobile devices are playing vital roles in our daily lives due to the constant improvements of mobile technologies. These improvements, such as increased computer power, better device-to-device communication and the ability to install additional third party applications, have caused a drastic rise in their popularity. The popularity and extended capabilities of mobile devices have drawn the attention of mobile developers and encouraged them to come up with new applications and software tools. As a result of the previously mentioned attractions, there have been an extensive adaptation and proliferation of mobile devices by people around the globe. The convenience and ease of usage of smartphones have encouraged most internet users to use them to access the internet instead of using their laptops or desktops especially when they are away from home or workplace. Due to their profound influence, they are permeated in almost all spheres of our lives. One of these sectors is finance in which smartphones have provided a better and more engaging way of interaction.

Provision of mobile banking services has been broadly used, and an understanding of the customer adaptation process will have important implications for bankers and customers alike. Mobile banking is one of the emerging services in telecommunications due to the explosive increase in the number of mobile customers around the world. Solutions for mobile banking are varied, ranging from the use of Wireless Transport Layer Security, Security Socket Layer, or application-layer based options. Whereas security at the transport layer is a good choice for e-banking, using it in a mobile device presents several disadvantages such as high energy consumption (Cano & Domenech-Asensi, 2015).

According to Kumar Miryala (2015), the use of Internet has given a boost and shown successful results compared to physical branch banking, therefore, many banking institutes have used it as a channel to provide banking service to their customers as it "*provides a fast and convenient way of performing common banking transaction*" (IBP Inc., 2015). Similar to Internet mobile banking, mobile banking provides a fast and easy way of preforming financial banking transactions, however, it only requires an internet connected mobile phone equipped with the features required by the bank that provides these services. In other words, Mobile banking has given a newer look to the traditional Internet overcoming its limitations by offering anytime and everywhere banking services eliminating the need for carrying a PC or a laptop for accessing the banking account. Having an ATM machine in the shape of a mobile phone allows customers to perform a range of non-cash mobile banking tasks like: checking account balance, view account activities and history, transfer funds, pay bills, access to loan and card statements, check remote deposit, finding ATM location and nearest bank branch, cheque book and card requests, personalizing alerts advertisements notifications, weather and news updates, loyalty-related offers, location-based services and many more (Kumar & Mondal, 2015).

Adaptation Mobile Internet banking can tremendously change customer's experience like never before. The aim of this research is to study the factors that influence the adaptation of mobile banking in Libya by Libyan's banks customers. The mobile banking services already introduced by the banks but there is still a low adaptation by the customers.

The project discusses the proposed technology covering its importance, factors affecting the adaptation as well as the challenges which are facing the application of this technology by the Libyan bank's customers. It starts with the project overview in which the technology background is discussed. After that, the early study about this topic is shown as well. Next is the problem statement and followed by the project objectives to identify the reasons for carrying out this project. In addition, the questions section in which four research questions worth investigation are identified to shed the light on the various factors that are influencing on the mobile banking

adaptation or the mobile Internet banking adaptation in Libyan Republic. Moreover, the hypothesis, significance of study, and the project scope is addressed too to indicate clearly what this project is going to cover. At the end of introduction, project methodology, project structure, definition of terms, and conclusion are explained to give initial ideas about what the research is going to discuss. The literature review is explained in details to provide a good overview about the Internet banking and the mobile internet banking technologies importance, effects, benefits and drawbacks. A review about these technologies in Libya and other countries are discussed as well to show the technologies effects on both customers and banks. The last section of the literature review contains the Acceptance Technology Model (TAM) and acceptance factors model that addresses the influence of factors on the mobile Internet banking adaptation by the Libyan clients.

1.2 Early studies

A banking organization may attract customers through the provision of high quality services. As such, structural modifications have led to banks being enabled to carry out various activities which in turn, allow them to be more competitive even against non-banking financial institutions (Murugiah & Akgam, 2015). Internet banking is both a procedure and product for electronic improvement. It allows clients to hold their banking transactions online, without physical visits to the banks. Mobile banking offers anytime and anywhere contact for business transaction, which is a huge benefit for the customers as it saves a lot of time. In addition, technological advancements are helping banks develop their service strategies being offered to individual as well as commercial customers. Moreover, banks offering quality services own a distinctive marketing edge because enhanced quality service is associated with higher revenue, customer retention and higher cross-sell ratios. Banks are also well aware of the fact that customer's loyalty lies in the banks production of greater value compared to their competitors (Murugiah & Akgam, 2015). The Libyan banking sector has experienced significant developments particularly following the issuance of laws concerning banks and money by the Central Bank of Libya. In 2005, the Central Bank of Libya played a key role in organizing banks and restructuring capitals inducing them to look for investment

opportunities in order to compete in the provision of services akin to that of international banking services and in order to attract depositors and investors to increase the equities and complete the capital. These laws urged banks to have a capital not less than 30 million Libyan dinars. Consequently, banks initiated their new marketing services that used to be lacking in Libya including the Visa Card, Electronic Bank Services, Mobile bank, Western Union and Money Gram. In addition, top financial institutions looked to satisfy the customers‟ needs and demands for their survival and successful competition in the current dynamic corporate marketplace (Murugiah & Akgam, 2015). Consequently, as mentioned earlier, the benefits of mobile banking, many Libyan banks have adopted this technology such as BCD bank (bank of commerce and development) and The Aman Bank. However, rate of the adaptation by customers is still limited and they are still relaying heavily on the traditional channels to performing banking services (Elgahwash, Freeman & Freeman, 2014).

To summary, even though internet banking has been broadly adopted in some Libyan banks, Libyan customers are still not utilizing this new technology and performing banking services through the traditional methods (Murugiah & Akgam, 2015).

1.3 Problem Statement

Many banks in the world currently provide mobile contact to financial information, even though new innovations are not readily accepted and adopted by everyone. Recently, Mobile banking and its services have been launched by private commercial banks in Libya. So that, this study is intended to explore by quantitative study if Libyan people are ready to accept this new method of banking and to evaluate customer’s knowledge about mobile banking in commercial aspects in Libyan Banking sector via distributing the questionnaire among Libyan banks. The main respondents will be the banks customers. The population and sample of this study will be the banks customers in Tripoli. SPSS will be used in this study to analysis the data that will be collected by the questionnaire.

In addition, Despite the increasing number of retail banks providing mobile banking services, the adaptation rate among consumers is still very low (Masrek & Khairuddin, 2012). Few studies have been carried out on the adaptation of mobile banking among the customers. Despite banks in Arabic countries having recently acknowledged the benefits of Mobile Banking technology in improving productivity and efficiency, in Libya, Mobile Banking have struggled to be adopted and integrated (Abukhzam & Lee, 2013). In order that, this study aims to identify and investigate the factors that could be influence the adaptation of mobile banking in Libya by customers.

1.4 Project Objectives

This section of the report concerns the objectives of this research. This research specifically aims at gaining understanding of the underlying reasons affecting the slow adaptation of mobile internet banking in Libya. This study is going to focus on the following objectives to fulfill the goal:

- To investigate the impact of Facilitating Conditions on Ease of Use and Usefulness.
- To investigate the impact of Self-efficacy on Ease of Use and Usefulness.
- To investigate the impact of Ease of Use on Behavioral Intention to use mobile banking.
- To investigate the impact of Usefulness on Behavioral Intention to use mobile banking.

1.5 Project Questions

Based on the discussions earlier mentioned, this section of the report will be shedding the light on identifying that various factors influencing on the mobile Internet banking adaptation in Libya. As such, the following research questions are considered worthy of investigation:

- What is the impact of Facilitating Conditions on Ease of Use and Usefulness?

- What is the impact of Self-efficacy on Ease of Use and Usefulness?
- What is the impact of Ease of Use on Behavioral Intention to use mobile banking?
- What is the impact of Usefulness on Behavioral Intention to use mobile banking?

1.6 Project Hypotheses

The hypothesis of this research can be defined in six suppositions which are as following:

Hypothesis 1: The Perceived Usefulness of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

Hypothesis 2: The Perceived Ease of Use of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

Hypothesis 3: The Perceived self-efficacy has a significant impact on the Perceived Usefulness of mobile internet banking.

Hypothesis 4: The Perceived self-efficacy has a significant impact on the Perceived Ease of Use of mobile internet banking.

Hypothesis 5: Facilitating Conditions have a significant impact on the Perceived Usefulness of mobile internet banking.

Hypothesis 6: Facilitating Conditions have a significant impact on the Perceived Ease of Use of mobile internet banking.

1.7 Significance of Study

The significance of study summarizes in determine the key practical and theoretical indicators regarding the mobile-banking adaptation. Regarding the practical indicator, this study is considered as significant as it will provide an insight to customers' adaptation of mobile banking. The study's findings are considered crucial regarding the adaptation of mobile banking development and it's successful in future. This study investigates factors affect the customers' adaptation mobile banking. By determining the factors that effect on the mobile banking adaptation, this will enhance the online transactions. The findings which are obtained will participate in investigating the research problem, which is the low adaptation of mobile banking among Libyan customers.

1.8 Scope of Study

This study mainly concentrates on the influence of the factors on the slow mobile Internet banking technology adaptation by Libyan customers making it not as popular as it should be. Factors like IT infrastructure, internet availability, Libyan people technology awareness and acceptance, distance between Libyan banks, increased demand from international banks etc., will be discussed in details. In this research, Libyan customers will be taken as unit of analysis to test their willingness to accept and trust this new technology in Libya. As well as the factors that influence their degree of trust like the lack of technology awareness, security risks, internet accessibility etc.

Furthermore, this study is proposing a novel model depended on TAM (Technology Acceptance Model) to reveal the reasons that influencing on the acceptance and adaptation of the mobile Internet banking by Libyan Banks's customers. However, the light will only be shed on banks in Tripoli. To examine these factors from the Libyan users' point of view, online questionnaire will be developed to measure their intentions to using online banking services offered by the banks in Libya through their mobile devices. Statistical Package for Social Scientists (SPSS) is a software

package has been used to analyze the structured data. The study stated from June 2016 to February 2017.

1.9 Project Methodology

Quantitative approach will be used in this study to achieve the project objectives. The researcher will collect the data using questionnaire from the customers of Libyan banking in Tripoli. The aim of this study is to investigate the factors that effecting the adaptation of mobile banking in Libya by customers. In order to achieve the aim, the researcher will use the multiple linear regression analysis to identify the relationship between the external and internal factors. Statistical Package for Social Scientists (SPSS) 21 will be used to conduct the analysis.

1.10 Project Structure

This study is organized into five chapters which are chapter one introduces the introduction which contains project overview, early study, problem statement, project objectives, project questions, significance of study, scope of study, project hypotheses, project methodology, project structure, definition of terms, and conclusion.

In addition, chapter two presents a comprehensive literature review. Moreover, chapter three explains the project methodology. Furthermore, chapter four consists data analysis. Finally, chapter five discusses the findings derived from the data analysis, project implications, limitations, contributions, further project and the conclusion.

1.11 Definition of Terms

There are five importance terms should be defined which are as following:

Perceived Usefulness refers to the degree of user's dependence or an individual's dependence to the system offered, particularly on the improvement of the performance in the specific part.

Perceived Ease of Use is related to the belief of the user or individual in the system presented with regard to the anticipated abolition of physical stresses and mental stresses in the specific aspect.

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives.

Facilitating conditions: An organizational and technical infrastructure supporting the use of acquired systems in their contexts.
Behavioral intention may be explained as the intended use of a system before its real use and its predictions for the future.

1.12 Conclusion

This chapter has presented the project overview. In addition, the early studies and the problem statement. The objectives and the questions of the study have been presented in this chapter. Moreover, the significance of the study as well as the scope, research methodology, research hypothesis, research structure and definition of terms has been highlighted in this chapter.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this section of the report, a study and an analysis of Internet banking in general and Mobile Internet Banking in specific are conducted to help clarify the concepts, impotence and effects of the mentioned technology. This section contains five main parts: the first discusses a study about Internet Banking and Mobile Internet banking technologies and their benefits and drawbacks on both banks and customers. The second part details a review about Internet baking technology in Libya followed by the third part which is a review of previous studies in Internet banking technology in other countries. The fourth part is about Acceptance Technology Model (TAM) which is the adapted model of this study. The last part discusses the research model which is mainly focusing on understand the factors affecting Libyan users' attitude towards adopting this new technology. This chapter is illustrated in Figure 2.1.

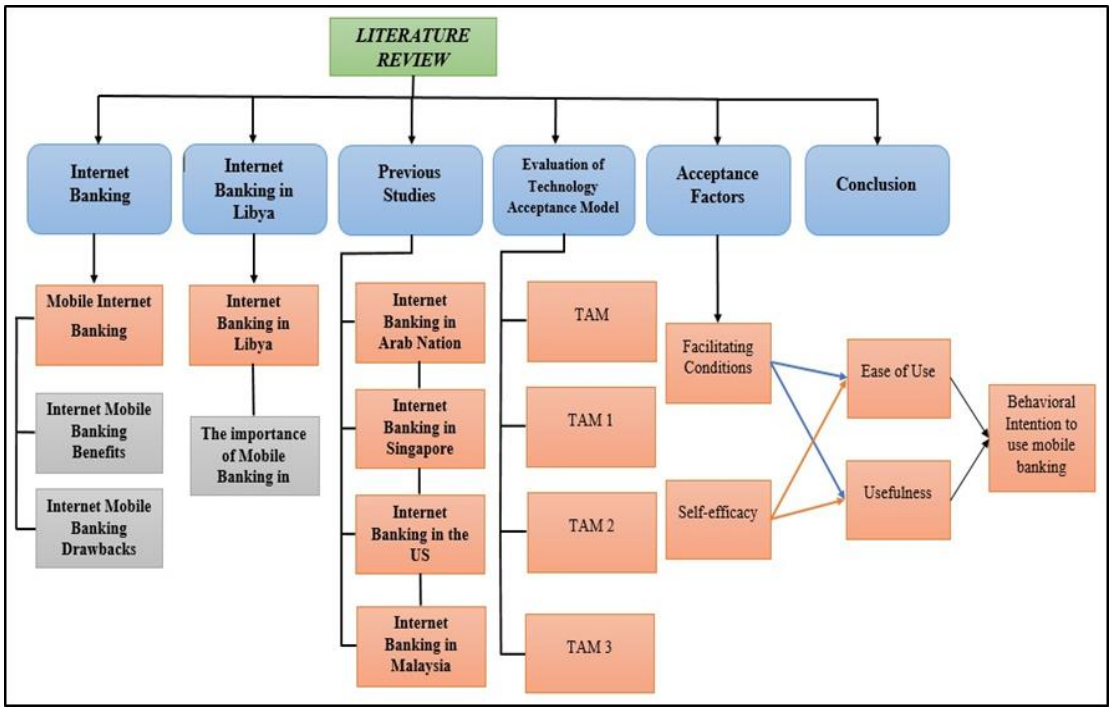

Figure 2.1: Literature Review Framework

2.2 Internet Banking

The rapid advances in information and communications technology has affected the banking sector functionality significantly. Banks have found that Internet can be used as an optimal channel to undertaking the bank services and providing better user experience to their customers around the globe. The service which was introduced as a new alternative delivery channel for products and services provided by banks. Mobile banking virtually established bank branches at the customer's premises via the usage of mobile devices package and allowed the customers to perform their accounts management (Vijayan & Shanmugam, 2015). Those banking services are such similar services to the ones offered by the physical bank centers like checking account balance, opening an account, transferring money to different accounts, getting bank transactions history, etc. as well as some new banking services like paying bills to third parties, online purchasing, renewing insurance, managing loans and many more services. To access these services, the user needs to use an Internet enabled device like a desktop computer, mobile phone, laptop etc. However, the astonishingly advances in the mobile technology has made a revolution in the internet banking sector. Many countries around the globe have taken this technology

into consideration due to the many benefits it returns on both the banks and customers. All the previously mentioned services and newly added ones are made even easier with Mobile Internet Banking as such small devices can provide customers with anytime and anywhere access to their banking accounts. In the next sub section of this chapter, and as the topic suggests, we are going to look into Mobile Internet Banking in details to study how it has changed the pace and the way banking services are delivered and accessed.

2.2.1 Mobile Internet Banking

The term Mobile Internet Banking refers to "*a service that operates outside the confines of traditional infrastructures (physical branches, ATM's, distributers, and so on)*" (Nicoletti, 2014) by utilizing the Internet-based mobile devices. This technology extends the benefits and convenience of internet banking by making it possible to perform banking transactions and access banking services at anywhere and anytime using mobile phones; therefore; it has added an additional advantage to derive customers to self-service which as a result reduce the branch footfalls and physical handling of cash. According to (Samudrala, 2015), this reduction "*will result in significant cost saving and improved operational efficiencies for the banks*".

Typically, this technology is made as part of or on top of Internet Banking solution. However, mobile phones improved processing speed, operating system, capabilities; storage etc. have made them great channel to offering advanced banking services and solutions.

Figure 2.2 shows how the mobile Internet Banking technology works. The user can access his account and undertake any action whenever and wherever he wants. To enjoy the bank services, assuming the user already has an active account with the bank, the user is required to install the bank mobile application and register himself into the system to access the available services. We can also see from the diagram that SMS banking is part of this technology as it used to send verification text

messages as well as some alert messages. Such alert messages can be set by the customer to control access to his debits/credit to their accounts and on his credit.

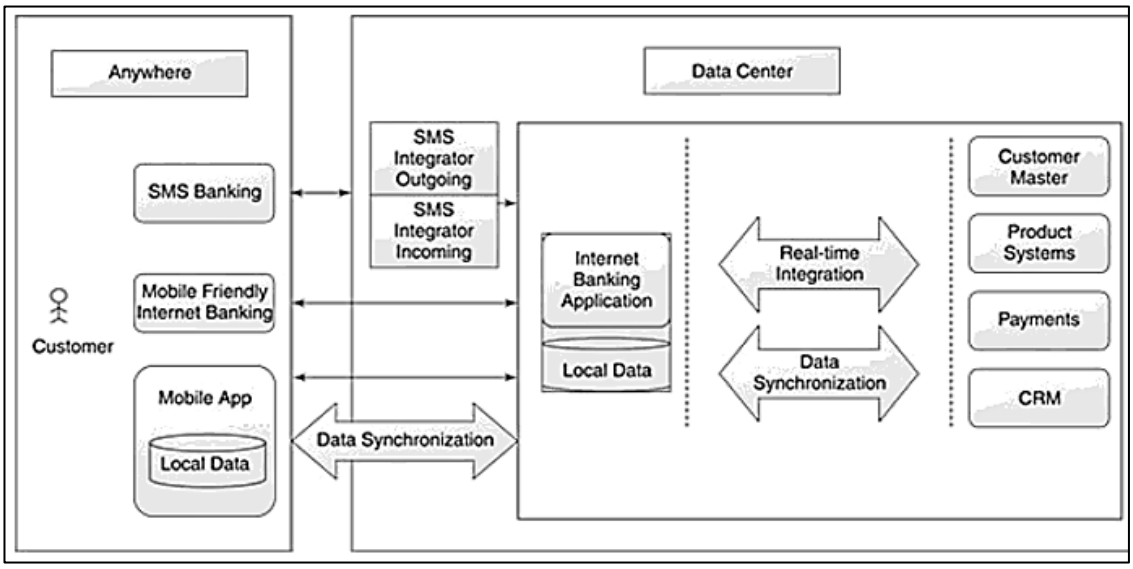

Figure 2.2: Mobile Internet Banking Technology (Samudrala, 2015)

2.2.1.1 Internet Mobile Banking Benefits

Many advantages mobile Internet banking that provides to banks with its clients. (Hettiarachchi, 2014; citing Brogdon, 1999; Jayawardhena et al., 2000; Booz-Allen & Hamilton, 1997; Robinson, 2000; Sheshnoff, 2000; Mols, 1998; Kamel, 2005) stated this technology offers banks many advantages, first, it is a great way to save money as the cost of transactions done online is way cheaper when compared to the one done at the branch. Saving money can also be seen in the reduction to the need of having more branches and staff to handle the services that can be easily handled online like checking balances, requesting for bank transaction, performing money transfer etc. Shuaieb mentioned that "*The running cost of traditional banks accounts for fifty to sixty percent of their incomes; whereas, Internet banking running cost was estimated at fifteen to twenty percent of its revenues*" (Shuaieb, 2013). A second benefit is "*reaching new segments of the population*" (Hettiarachchi, 2014) what he meant here is by applying this new technology and its services, banks will have a better opportunity of reaching and satisfying the needs of convenience seeking and technology savvy customers. Another advantage to this technology is the "*enhancement of the bank's reputation*". If this technology is being applied correctly, it can add a critical influence on the brand image of the bank affecting positively on

the bank customers which as a result will make customers trust their banks and recommend them to others too. The fourth advantage is "*better customer service and satisfaction*" (Hettiarachchi, 2014).

Giving customers the access to their banking accounts to preforming any banking service they wish at anytime and anywhere is yet another advantage which as a result will lead to a better customer service and satisfaction eliminating the need to travel all the way to the bank branch to perform the same activity. Furthermore, (Mohammed, 2013; citing Khalfan & Akbar, 2006) mentioned another advantage to mobile internet banking that is it "*reduces physical trade difficulties by increasing market access and trade efficiency*"; therefore; for the bank to communicate with other banks locally and globally, physical constrains can be reduced or even eliminated in the near future. Finally, this technology can have a positive impact on the bank admin staffs as they will be focusing on more important tasks since the mobile application is handling most of the bank services which as a result will affect the bank staff's efficiency as Shuaieb mentioned in his articles "*Raising the efficiency of workers in the administration*" (Shuaieb, 2013).

This technology returned benefits are not only to the banks but the customers too. One of the most important advantages to customers is convenience since customers can access and manage their bank accounts regardless of the time and physical place constraints. Not just convenience of in terms of place and time but cost too. By accessing their finances from anywhere, the issue of going physically to the bank branch is eliminated therefore saving users the cost of traveling to the bank branch. Another advantage to using mobile internet banking is that customers can enjoy the additional services than the services offered in traditional banking websites or through the bank branches, for instance, Koskosas mentioned in his article few examples of such services like *"Mobile financial services provide convenience and promptness to customers along with cost savings, banks are interested in expanding their market through mobile services. Traditionally, the most widespread method of conducting banking transactions has been through offline retail banking. Wireless technology, however, is rapidly changing the way personal financial services are*

designed and delivered. In the last several years, retail banks in South Korea have introduced and diffused mobile banking systems throughout their operations to improve their operations as well as to reduce costs" (Lee & Kim, 2015). Moreover, Lee and Kim stated another important point related to the online transfer of funds. Bank services users can use this technology to make unlimited number of funds transfers freely in most cases, pay bills automatically, and get payroll deposits. Above all of the mentioned advantages, the customer can always keep an eye on his account balance and transactions at all times.

2.2.1.2 Internet Mobile Banking Drawbacks

From the bank perspective, there are many drawbacks and risks that need to be taken into considerations before implementing this technology. According to (Mohammed 2013; citing Tan and Teo, 2000; Sohail & Shaikh, 2007), there are numbers of disadvantages: firstly, this technology depends fully on the IT infrastructure, fault tolerance and robustness of a country which can even make it harder for some banks in underdeveloped countries from keeping pace with the rest of the world. Secondly, the initial cost to implementing this technology is going to be high especially when it comes to the banking sector where the application is dealing with very sensitive data which requires extra layers of security, protection, maintenance, etc. Thirdly, "*Cybercrime and money laundry, in such instances it is difficult for banks to identify customers. Thus, it increases the crime rate*" (Mohammed, 2013). Fourthly, the high risk of not implementing the software efficiently might result in banking losing its reputation and wasting the invested money in developing the software. Fifthly, the risk of bank employees, especially administrative jobs, losing their jobs as the provided online services will reduce the number of banks branches and replace many human powers. Finally, is the security concern for both parties' banks and customers to protect customers' data from unauthorized access.

This technology has disadvantages on the customers too. Mohammed (2013) citing (Cronin, 1998) mentioned a list of these disadvantages to customers such as user acceptance and trust of this new technology and the risk of losing their money or

private information. Another issue is the Internet accessibility; a user with no internet access will not be able to enjoy the benefits of this technology. Furthermore, some bank transactions and operations need to be carried out between the client and the employee directly like bank draft, remittance etc. Lastly, customers will also have concerns regarding the protection of their data from identity theft and scams.

2.3 Internet Banking in Libya

Even though internet banking has been broadly adopted around the globe in the banking sector, Libya is still not utilizing this new technology and performing banking services through the traditional methods. In this section of the report, a review about the banking services offered to Libyan customers over the internet is going to be discussed.

"*The technology revolution in the banking sector of Libya actually began in late 2000*" (Elgahwash, Freeman & Freeman, 2014; citing Ferguson, 2000; Twati & Gammack, 2006; Twati, 2008; Hunaiti et al., 2009). This revolution was due to the increasing pressure from international banking community and customers on Libyan banks to be modernized and electronically ready. Furthermore, and as mentioned earlier the far distance between banks branches and headquarters. To reduce the mentioned issues, many Libyan banks have adopted this technology such as BCD bank (bank of commerce and development) and The Aman Bank, however, rate of the adaptation is still limited and they are still relaying heavily on the traditional channels to performing banking services.

To keep pace with the rest of the world, the Central bank of Libya adopted "*an initiative project for the national payments system that involves the technical studies and strategic plans. Moreover, it developed a partnership with a group of specialized international companies to implement the project components of the payments system*" (Shuaieb, 2013). According to (Shuaieb, 2013; citing Ossama, 2001), this system includes the following systems:

2.3.1 Real Time Gross Settlement

With the participant of 17 Libyan banks, this system was implemented in Libya in 2008 and it is "*a timely settlement of interbank lending transactions, settled one after another Real-time gross settlement are carried out by the central bank of each country. Heir timely settlement is therefore guaranteed by the central bank*" (Peng, 2015, p. 239). This system has return advantages which are saving time and cost and providing a security. Shuaieb (2013) mentioned that this system "*speeds up the disbursement of pensions, the grants, allowances and loans. It facilitates the preparation of budgets for the national sectors and it enables the Central Bank to monitor services and accounts empowering individuals, companies and public bodies to collect the service fees automatically*". The security of this system is presented in the guaranteed payment by the Libyan central bank which will eliminate the risk of not receiving the payment even if the bank goes bankrupt.

2.3.2 Automated Clearing System

This system was implemented in 2008 too and it "*performs a series of repeated transfers such as salaries, bills, and electricity, etc.*" (Shuaieb, 2013) Differently from the Real Time Gross Settlement system which processes a minimum value of more than 10,000 Libyan Dinar, this system processes a low value transfers of less than 10,000 LD.

2.3.3 Management System Card &ATM/POS

This system is considered to be a full payment system providing "*an essential frame for the national withdrawal cash dispenser, which offers access to all the customer accounts in any of the operating banks*" (Shuaieb, 2013). It gives Libyan customers, merchants, companies the flexibility of cash withdrawals national wide, performing banking services electronically and enjoying some international level of financial transactions.

2.3.4 Automated Checks Processing

This system is for processing encoded checks, and it uses the internet, a check scanner and a special software to reading/scanning the check data.

2.3.5 Core Banking System

This system involved taking care of the banking transactions for individuals and companies together. It has many benefits such as: support account transactions in various currencies, support multiple branches, accept multiple payment channels and back up centralized databases of customers and accounts.

When it comes to Mobile Internet banking technology, we can notice that the adaptation rate by banks and customers is even slower than internet banking. Many Libyan banks currently offering mobile banking which is a SMS based which was first introduced by The Bank of Commerce and Development to offer its customers the benefit of changing PIN number, identifying the latest three deposit or withdraw transactions, requiring latest exchange rates, acquiring balance statement to be delivered through fax, and opening and closing auto service for transactions. With the advances in the Mobile Internet banking, Libyan banks are willing to keep pace with the rest of the world countries therefore some banks like the Bank of Commerce and Development is promising users with a new mobile application through which they can perform the following services (Bank of Commerce and Development, 2015): bank latest news, money exchange, top-up voucher cards, bill payment, balance inquiry, mini account statement, complete account statement, balance transfer from an account to another account, balance transfer from bank to bank, account activity alert, cheque deposit, cheque book request, certified cheque print, top up: Visa – MasterCard – American express, card balance inquiry, and card statement.

It is noticed from the discussion made on the previous studies above it shows that there is much delayed of online banking to being adopted in Libya and it is primarily due to "*Unavailability of Proper Telecommunications Infrastructure*" across the country which acts as a barrier to adopting this technology. Poor IT infrastructure, lack of computer and mobile literacy and lack of banks customers' trust and acceptance of this technology have potential, direct effects on the slow implementation of this technology in Libya.

2.4 The importance of Mobile Banking in Libya

Due to the many benefits that mobile Internet banking technology can return on the banks and customers, this technology could offer effective and efficient banking services to clients and get better client's needs and expectations, and customers satisfaction (Twati, 2014).

In addition, the competitive performance in the international stage will be increased. Moreover, customers will not need to go to branches which causes many problems to the banks officers such as congestion, and customers will be able to get many transections done through mobile banking technology. Furthermore, banks will not need to addition bankers to serve customers which will lead to decrease the cost of employment. Finally, encourage others companies in Libya to adopt many services through mobile Banking technology such as bills payments, prepaid reload and others. To conclude, adaptation this technology, which is mobile banking in Libya by customers, can tremendously improve the quality of performance in Libyan banks and customer's satisfaction which will lead to have a place in international competitive.

2.5 Previous Studies

In this section of the report, we are going to have a closer look at the implementation, certainty i.e., trust, and acceptance of technology for Internet banking by looking into

different case studies of various countries. The usage and acceptance of this technology varies from one country to the other, for example according to Mohammed (2013), the adaptation of the Internet banking or the so-called online banking in developed countries such as USA, Europe and Asia pacific is very considerable and significant, while countries that called developing the case is different, therefore, the adaptation rate is very low. Such huge difference is related to the many factors like the IT infrastructure, the bank reputation, technology security level, technology awareness by both banks and consumers and so on. To understand the various factors affecting users and banks in different countries, a review on some selected countries is being done.

2.5.1 Internet Banking in Arab Nations

Nowadays, many Arabic banks are offering a variety of financial services to their customers; however, unfortunately the rate of usage of the provided services from the customers' side is very poor where users' activities are limited to information seeking and low value added services only (Al-Khatib, 2013). According to the study done by Al-Ajam (2013), in Arabic world there is "*an increased tendency to conduct financial activities manually compared to the use of electronic form via the Internet-banking*". He also added that the Internet banking adaptation faces rejection in most Arab countries especially in countries like Yemen, Libya and so on. The factors affecting this very slow adaptation are mainly the customers' trust and acceptance level.

Al-Ajam (citing Md Nor & Pearson, 2008) indicated that customers have fears from conducting banking services online due to the complete reliance on the computer system without personal contact. Furthermore, banks customers fear the unauthorized access and hackers from getting an access to their private, personal financial data. Moreover, he mentioned that lack of utilization of Online Banking as customers in the Arabic region have a negative attitude towards Internet banking which is resulting from lack of internet literacy, difficulties in using Internet Banking,

unfamiliarity with mobile devices, and incompatible innovation with individuals' culture and value.

2.5.2 Internet Banking in Singapore

According to Lin et al. (2015), in terms of Internet banking, Singapore is considered to be the readiest country among ASEAN peers. He also mentioned that Singapore is ranked the second on the world after the United Kingdom in terms of readiness of digital banking. This country has always stayed ahead when it comes to implementing the latest technology in the banking sector. In Asia, Singapore introduced the Automated Teller Machine (ATM) since 1979 then followed by adopting the internet baking technology since 1990s. Now, Singaporean banks are in the phase of mobile internet banking where they offer their customers very advanced financial services like opening online accounts, loan applications, mortgage calculations, and location-based viewing of past transacted prices of real estate. The factors behind these advances in the internet banking sector in Singapore is that this country has one of the highest digital banking penetration levels in Southeast Asia with a percentage of 94% and this is due to the "*high number of digitally savvy consumers, high smartphone penetration levels and good digital service adaptation rates have been highlighted in Singapore*" (Lin et al., 2015). On the other hand, mobile internet banking is still not as common as the internet banking but it is witnessing a fast rising.

2.5.3 Internet Banking in the United States

According to Fox (2013), there is a vast improvement and fostering for the Internet banking and mobile-based online transactions throughout different States. In his report, Figure 2.3, he mentioned that in 2010, there were 61% of internet users bank online (up from 18% in 2000). While for mobile internet banking, there was an increase from 18% in 2011 to 35% in 2013. Fox has linked this inspiring increase to customers' level of trust of the services offered to them.

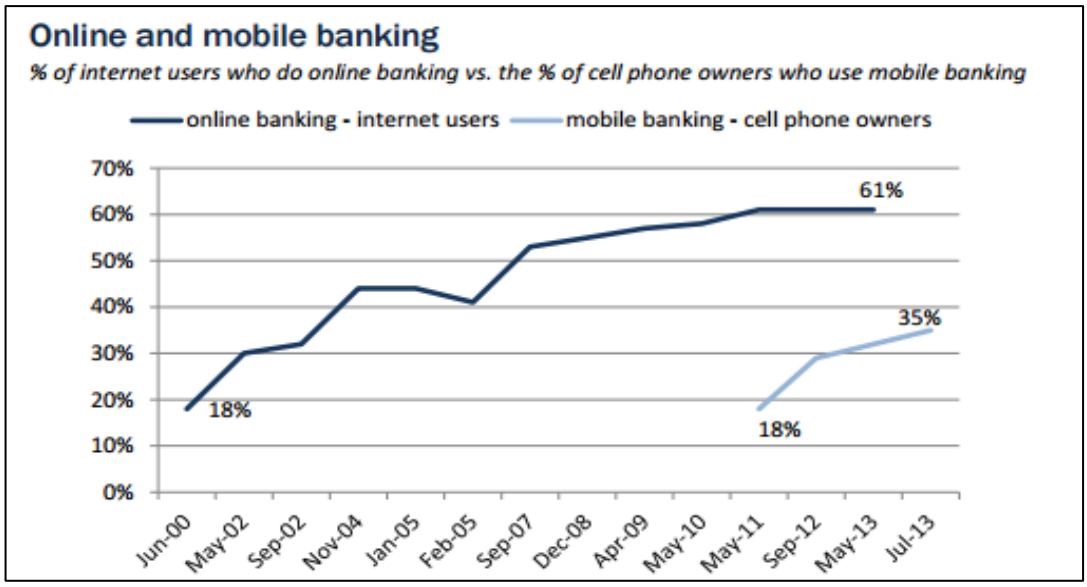

Figure 2.3: Online and Mobile Banking in the United States (Fox, 2013)

2.5.4 Internet Banking in Malaysia

According to Lin et al. (2015), in the digital banking phase, Malaysia is rated the second right after Singapore among other Southeast Asian Nations. The digital revolution in Malaysia has started long ago for instance the Automated Teller Machines was first introduced in Malaysia at early 1980s. Followed by the revolution of Internet banking in early 1990s and now Malaysia is in the Mobile Banking phase. Lin, citing Bank Negara Malaysia (BNM) statistics, Mobile banking penetration in Malaysia was %19 in 2014 up from %5 in 2011.

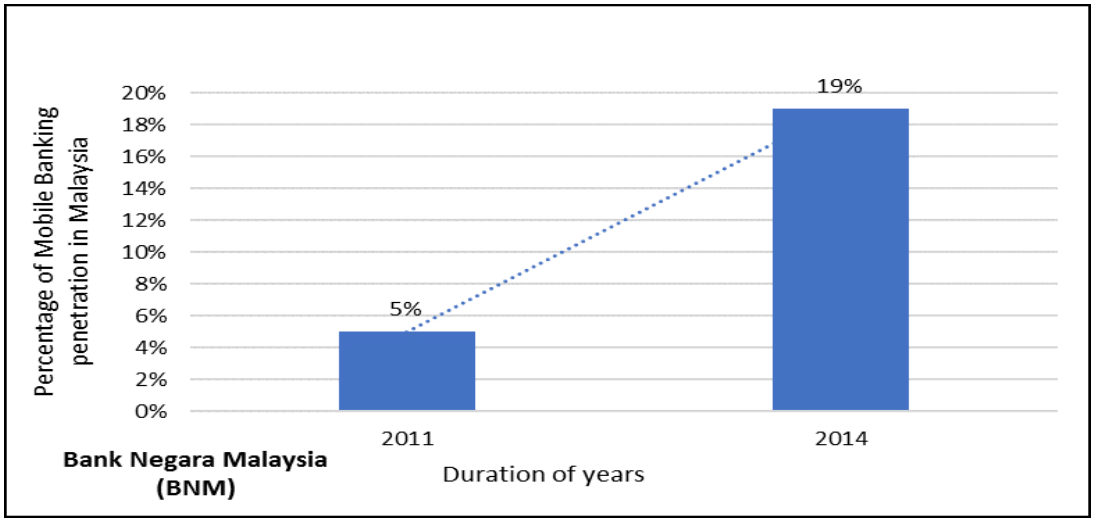

Figure 2.4: Percentage of Mobile Banking penetration in Malaysia (Lin, 2015)

Bank Negara Malaysia has set some clearing fees, RM 0.50, per cheque processing transaction as a way to reduce cheque and cash payments and encourage e-payment transactions. Malaysian government is working hard to achieve its blueprint by the year of 2020 which is to "*elevating the country to a developed nation status by year 2020*" (Lin et al., 2015). Yet to achieve this target is not that easy when comparing Malaysia to other countries like Australia and South Korea as consumers in these counties do around one electronic payment transaction per day whereas in Malaysia it is more like one transaction a week (Raj, 2014 citing ugh Harley). Raj (2014), cited Soo Hoo Khoon Yean, mentioned in his article that banks in Malaysia are taking technology advances seriously and have invested badly in it, as a result of such heavy investments, there are hopes that things are going to start moving quite rapidly.

To sum up this section, previous studies have showed that there is a time lag among different countries when it comes to adopting mobile internet banking technology. This is mainly due to, as mentioned earlier in the previous studies, the factors affecting the adaptation of this technology for instance, the robustness and readiness of the country ICT infrastructure which will make implementing such technology more feasible, so it is considered as one of the key causes of the advancement in mobile Internet banking in Singapore. Other factors like customers' technology awareness and readiness, customers' degree of technology acceptance and trust, bank reputation, security and privacy aspects, technology service charges, technology ease of usage and so on are all significant in affecting the implementation and availability of Mobile Internet Banking technology.

2.6 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is one of the theories for information system which draws the relationship in how users come to accept and use a technology. When the users have got new technology, there are set of factors that affecting their decisions for how they will use it and when. This is what the model suggests, notably (Davis, 1989). The development of TAM model demands one of the three ways of dealing or approaches where are introducing factors of this model,

introducing additional beliefs or substitute those factors, and analysing backgrounds and arbitrators in regards to insights on two significant elements, the usefulness and the ease of access. Eze et al. (2008) turned out that there is a need to employ TAM so that we can modify and customize particular technologies to fulfil the personal demands of each customer. It was claimed that general models were inadequate in explaining the use of service channels and technologies. Furthermore, some of these conditions may need the insinuation of particular technologies rather than being generally approached (Phan & Daim, 2011). Therefore, the adaptation of TAM requires the integration of other important aspects, rather than looking at Mobile Internet banking from a generic view point. In this light, there is a need to include new variables or aspects related to the speciality and uniqueness of the mobile internet banking environment into the model. Based on the above discussion, this current research focuses on modifying TAM through adding elements as independent variables for this study, which are "*Self-efficacy*" (SE) and "*Facilitating Conditions*" (FC). This modification in the presented model and the disposition of the chosen variables are made to comply with the present situation of banks particularly due to the fact that the climate in mobile internet banking in Libya is still at the infancy stage. In this regard, the next subsections present illustrations of modified model i.e., constructed model pertaining to the interest of this project.

2.6.1 Evolution of Technology Acceptance Model

TAM model was developed by Davis (1986). It is an adaptation of TRA specifically tailored for modelling user acceptance of IS. The goal of TAM is to provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behaviour across a broad range of end-user computing technologies and user populations. At the same time, it is both parsimonious and theoretically justified. TAM was formulated to identify a small number of fundamental variables suggested by previous research, dealing with the cognitive and affective determinants of computer acceptance. TAM uses TRA as a theoretical backdrop for modelling the relationships between these variables. Specifically, TAM is based on two particular beliefs, perceived usefulness (PU) and perceived ease of use (PEOU), as the main antecedents of computer acceptance. Like TRA, TAM maintains that the use of

computers is determined by BI, although it differs from TRA in that BI is determined by PU, as well as A, toward using the system. In the same way, TAM does not include the construct SN used by TRA because of its uncertain theoretical and psychometric status (Figure 2.4).

Later, Davis (1989) found that PU and PEOU exert a strong impact on BI, and the effect of A decreases with time. With this argument, they decided to remove the latter construct from the TAM model. When Venkatesh and Davis (1996) analyzed the antecedents of PEOU, they no longer included A in the model (Figure 2.5). Over time, the TAM model has been implemented in a variety of contexts, beyond the mere acceptance of computers in the workplace. Therefore, TAM has become well established as a robust, powerful, and parsimonious model for predicting user acceptance.

The first of the extensions of TAM, the so-called TAM2 (Venkatesh & Davis, 2000), is based on the expansion of the antecedents of PU. Across the many empirical tests of TAM, PU has consistently been a strong determinant of BI. Using TAM as the starting point, TAM2 incorporates additional theoretical constructs spanning social influence processes (SN, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and PEOU). It should be emphasized that the inclusion of SN affects both BI directly and through PU (Figure 2.6). Later on, and having the same intention as in TAM2, to complete the model incorporating the antecedents of the original TAM, Venkatesh and Bala (2008) developed TAM3. More specifically, if TAM2 added the antecedents of PU, TAM 3 was enlarged by the constructs that precede PEOU and which were already set forth in Venkatesh and Davis (1996), and Venkatesh (2000). In particular, building on the anchoring (computer self-efficacy, computer anxiety, computer playfulness, and perceptions of external control)

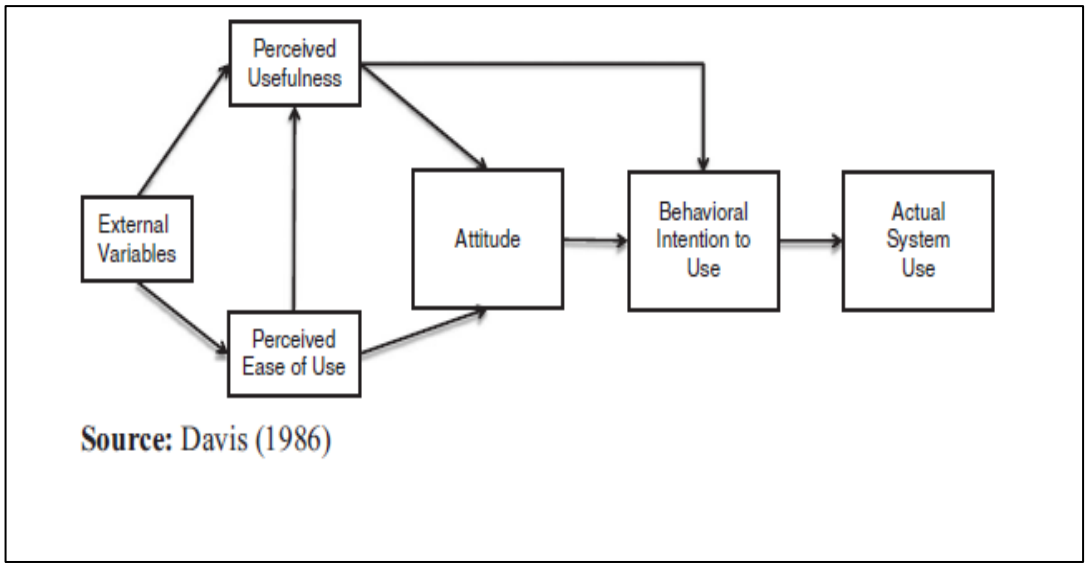

Figure 2.5: Technology Acceptance Model (Davis, 1986)

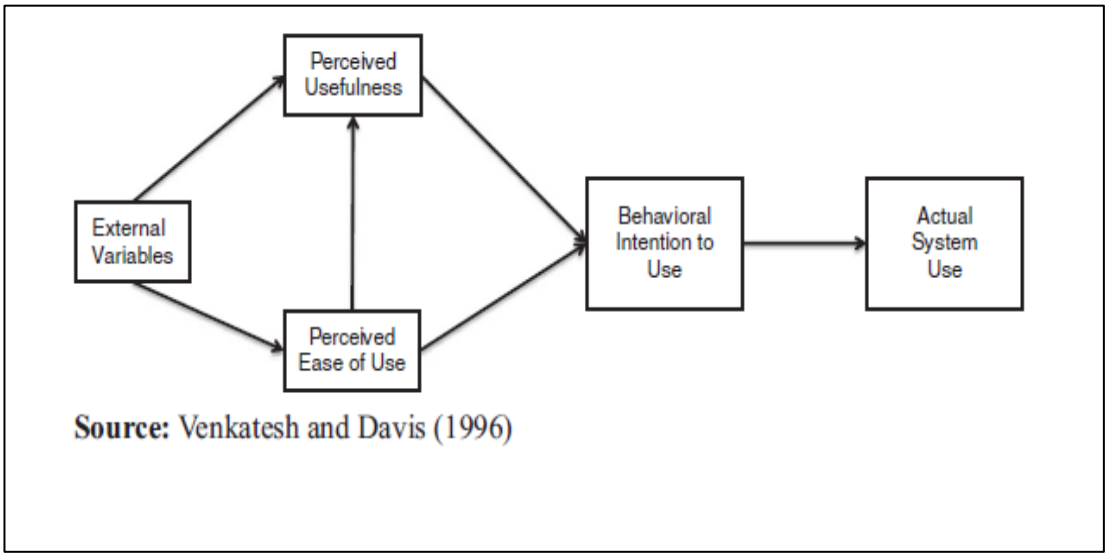

Figure 2.6: Technology Acceptance Model 1 (Venkatesh & Davis, 1996)

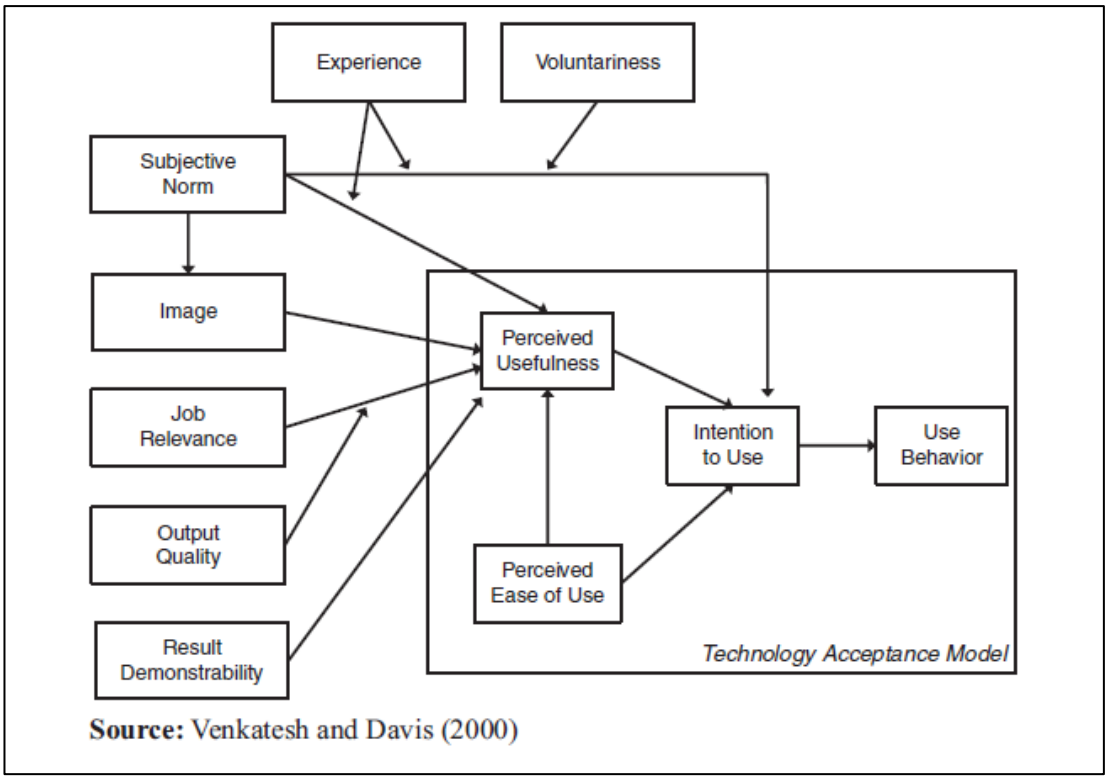

Figure 2.7: Technology Acceptance Model 2 (Venkatesh & Davis, 2000)

And adjustment framing (perceived enjoyment and objective usability) of human decision making, Venkatesh and Bala (2008) developed a model of the determinants of PEOU (Figure 2.7).

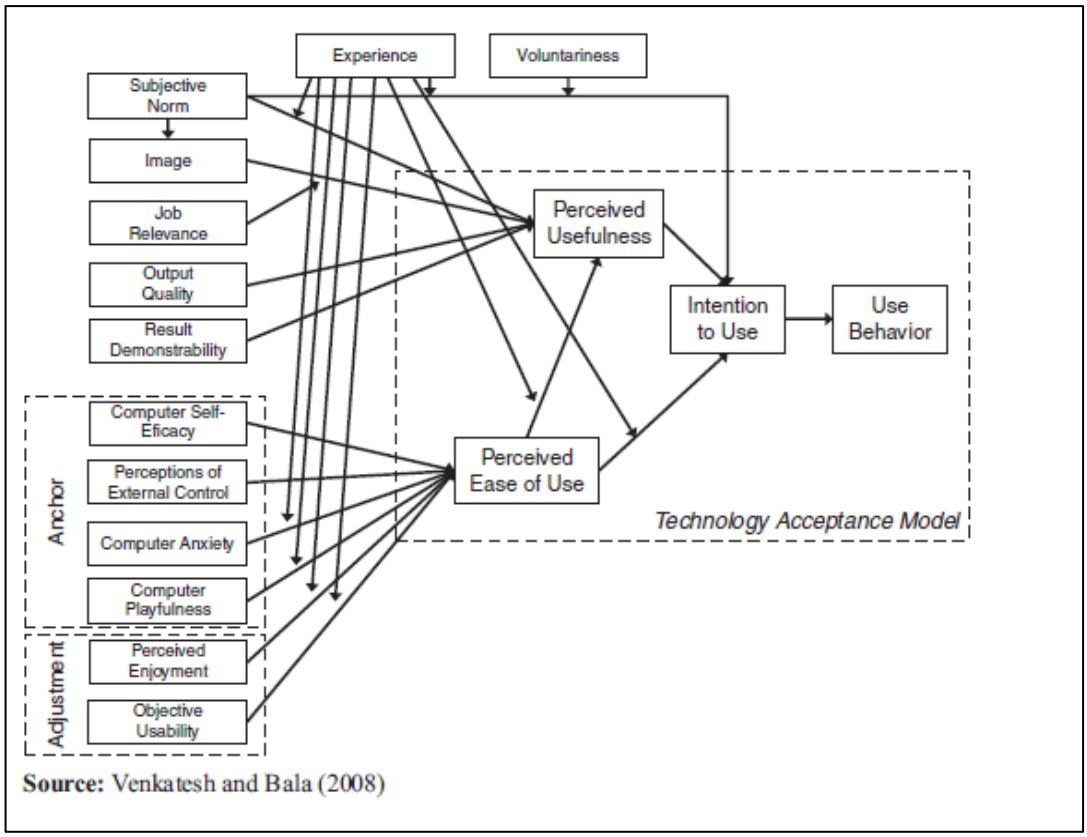

Figure 2.8: Technology Acceptance Model 3 (Venkatesh & Bala, 2008)

Finally, TAM models in the last decades have been widely used, extending their application to a multitude of technologies, especially to web site applications. TAM models have found a lot of support within the literature. Proof of this are more than 4,100 citations inside the Social Science Citation Index database in November 2013, and more than 17,600 identified by Google Scholar for the article of Davis (Davis, 1989).

2.7 Acceptance Factors

Davis in 1989 suggested the technology acceptance model that constitutes two main notions: The Perceived usefulness (PU) (i.e., how an individual looks on the usefulness in a particular way) and the Perceived ease of use (PEOU) as depicted in Figure 2.9.

2.7.1 Perceived Usefulness

The Perceived Usefulness refers to the degree of user's dependence or an individual's dependence to the system offered, particularly on the improvement of the performance in the specific part. The Perceived Ease of Use is related to the belief of the user or individual in the system presented with regard to the anticipated abolition of physical stresses and mental stresses in the specific aspect. Consequently, technology acceptance model requires user's belief to decide which way or approach to take in relation to the system implemented. In return, this belief can assist the development of the purpose for the consumer to use the service or product. Besides that, in general, Ajzen (1991) turned out that technology acceptance model is a process of adapting the Theory of Reasoned Action (TRA). This theory (TRA) was developed as an overall model in comparing to the certain nature of TAM. Thus, this study was conducted based on two main reasons pertaining to the implications of TAM: first, the predictive power of TAM which easy the application of the model in the broad nature of information system devices (Luarn & Lin, 2005; Nysveen et al., 2005; Pikkarainen et al., 2004). Moreover, TAM can facilitate the understanding of main constructs of this present study, which are the Perceived Usefulness, the Perceived Ease of Use, the attitudes towards the use and the behavioural intentions of use (BI).

In the meantime, many researchers have acknowledged that PU and PEOU constructs need to be valid in order to comprehend the user's objectives in regard the acceptance of the use of Information System in banking sector (El-Gohary, 2012; Abbas & Hamdy, 2015).

Conversely, the validity of the constructs is made up by user's dependence on the specificity of technological implication; for instance, there are certain constructs in Mobile technology that can help better reflection on the adaptation of emerging technologies (Amin, 2007). In relation to this, Examining TAM implication concerning mobile internet banking needs has required to formulate the hypotheses as follow;

Hypothesis 1: The Perceived Usefulness of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

Hypothesis 2: The Perceived Ease of Use of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

2.7.2 Perceived self-Efficacy (SE)

Compeau and Higgins (1995) conducted a study stated that self-efficacy refers to belief of user on his/her ability in executing specific tasks. Thus, self-efficacy in accordance with the mobile internet banking concept, is considered as user's critical analysis in the mobile internet banking usage. Additionally, the perceived self-efficacy and behavioural intentions were empirically verified by the underlying relationship between these two aspects (Amin et al., 2007; Li, 2007; Yi & Hwang, 2003). These underlying relationships describe the direct link between the specific aspects involved in the consideration process where the performance of a particular aspect affects the performance of others.

Meanwhile, in the integration of Information technology with banking experiences, the perceived self-efficacy is regarding the improvement of quality, such improvements will increase the users' behavioural intention to utilize the implemented system. On the other hand, if the perceived self-efficacy is not attained the demanded standard, particularly in the system's features or by the providers that offered the services, the behavioural intention will eventually be massively decreased. Therefore, the deliberation of the underlying relationship between these aspects should be related to the implementation technology. Such relation was offered by the study of Luarn and Lin (2005) which shows the self-efficacy positive effects with the behavioural intention to use Information System. Moreover, Hernandez et al. (2009) also corroborated a research to identify the immediate positive impacts of self-efficacy on the PEOU and PU for services of the mobile banking. The study presumed that individuals will accept mobile internet banking

services on the basis of their abilities to use it. In this regard, the following hypotheses are devised in this research in relations to mobile internet banking context:

Hypothesis 3: The Perceived self-efficacy has a significant impact on the Perceived Usefulness of mobile internet banking.

Hypothesis 4: The Perceived self-efficacy has a significant impact on the Perceived Ease of Use of mobile internet banking.

2.7.3 Facilitating Conditions (FC*)*

Facilitating conditions can be defined as the amount of support needed to access some information and gain some benefits from the offered services, hence, users are expected to possess the expertise, information, knowledge, and the capital to accept the implications of the technology. In this regard, compared to internet banking, mobile internet banking is still a relatively novel concept; therefore, users need to possess some fundamental knowledge about mobile applications and mobile services in order to use offered services, particularly concerning how to access information by using the functions of the mobile across its platforms. Furthermore, mobile internet banking elucidate that the users should handle the cost pertaining the use of technology and this boosts the cost of information and communication technology (ICT). This feature distinguishes the adaption of mobile internet banking from other modes of technology adaptation. Consequently, this may hinder the successful implementation of the mobile internet banking technology; this is because, if mobile internet banking services incur a high cost on users, users will ultimately favour the traditional ways for dong their banking transactions regardless of mobile internet baking advantages. In the meantime, the study by Triandis's (1980) mentioned that facilitating conditions involve the inclusion of service types.

Furthermore, this aspect is also concerned with the extents of it influences on individuals and how it affects the use of the prospective technology, besides that, the workplace context in the implementation of technology requires the access to support and provision training based on the facilitating conditions. In relation with this, numerous studies in this research area have adopted the technology acceptance model that empirically outcome on the prospective effects on the users due to the Perceived Usefulness or Perceived Ease of Use (Amoako-Gyampah & Salam, 2004; Jiang et al., 2000; Taylor & Todd, 1995; Thompson et al., 1994). Call to mind, the scope of past researches, the aspect of facilitating conditions is considered as functional combination of the degree of acceptance of the considerable innovations in information system (Cheung et al., 2000; Jones et al., 2002; Lu et al., 2004). This aspect is warranted by researchers conducted by Hung et al. (2003) as well as Lu et al. (2004) which studied the level of acceptance of the integration of the services of Wireless Application Protocol (WAP) in Taiwan. WAP refers to the technical standards used to access information over mobile network. Consequently, the integration of WAP services has improved mobile networking environment particularly the interactions between data services. In this study, the facilitating conditions are reflected as important aspects in identifying the acceptance behaviour of individuals towards the services of wireless application protocol. Based on these findings, these hypotheses have been proposed as follows,

Hypothesis 5: Facilitating Conditions have a significant impact on the Perceived Usefulness of mobile internet banking.

Hypothesis 6: Facilitating Conditions have a significant impact on the Perceived Ease of Use of mobile internet banking.

Therefore, an acceptance model for mobile internet banking for this study is identified and shown in Figure 2.9. The model helps to construct five main aspects in evaluating banks technological experiences and possible behavioural intentions towards the use of mobile internet banking. This framework has proposed depending

on multiple sources including the Theory of Reasoned Action (TRA), the Unified Theory of Acceptance and Use (Venkatesh et al., 2003), the Technology Acceptance Model (TAM) (Davis, 1989b); Furthermore, theorie's range on information systems, culture, economics, and social psychology and current published literature on individuals' mobile Service or Internet acceptance (Dai & Palvi, 2009; Lu et al., 2005; Rosenbaum & Kleber, 2004) were also used as a base for the current research.

2.6.4 Perceived ease of use

What causes people to accept or reject information technology? Among the many variables which may influence system use. Perceived ease of use is an important factor influencing user acceptance and usage behaviour of information technologies. On other words, perceived ease of use is found to affect consumer's intention toward using an Internet-based service. Perceived ease of use, in contrast, refer to the degree to which a person believes that using a particular system would be free of effort. This follows from definition of ease. The theoretical importance of perceived usefulness and perceived ease of use as determinants of user behaviour is indicated by several diverse lines of research (Suki, 2011).

2.6.5 Behavioural Intention

Behavioural intention may be explained as the intended use of a system before its real use and its predictions for the future (Jiang et al., 2002). Many models have been developed for analysing and predicting the users' intentions mobile applications. For examples (Abbas & Hamdy, 2015) they have determinants of continuance intention factor in Kuwait communication market. Amin (2007) also studied the analysis of mobile credit card usage intentions. Luarn & Lin (2005) studied the understanding of the behavioural intention to use mobile banking. Based on TAM theory, perceived use of ease and perceived usefulness effect positively on the behavioural intention of the users (Abbas & Hamdy, 2015).

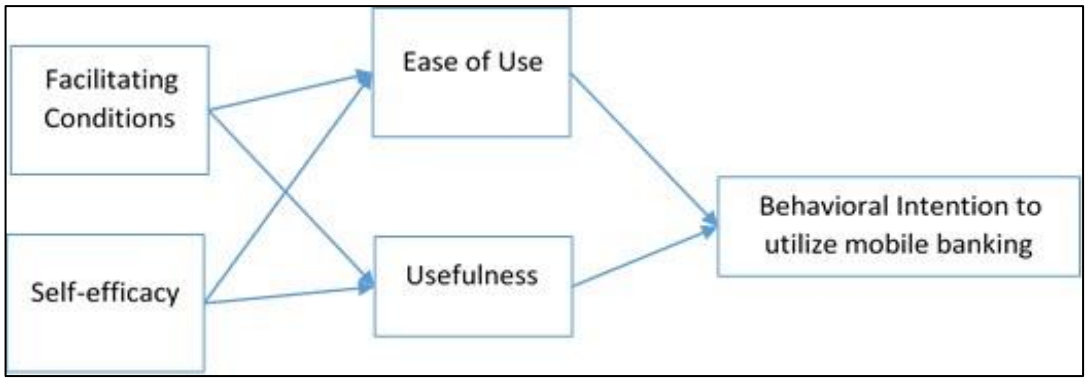

Figure 2.9: Acceptance Factors Model

2.8 Conclusion

The rapid advanced in information and communication technology has affected the banking sector functionality significantly. Banks have found that Internet can be used as an optional channel to undertaking the bank services and providing better user experience to their customers around the globe. This section of project studied and analyzed Internet banking generally, and it investigated Mobile banking in specific aspects to aim clarify the concepts, importance and effects of the Mobile banking. This technology extends the benefits and convenience of internet banking by making it possible to perform banking transactions and access banking services at anywhere and anytime using mobile devices. However, some barriers such as IT infrastructure, fault tolerance and robustness could face banks to reach through this technology. In addition, user's acceptance and trust of Mobile banking and the risk of losing their money or private information could reduce the adaptation of this technology. Even though Internet banking has been broadly adopted around the globe, the most of banks in Libya still not utilizing this technology and performing banking services through the traditional methods. Moreover, the most of customers there avoid using the Mobile banking services such as Real Time Gross Settlement, Automated Clearing System and Management System Card and ATM/POS which are adopted by other banks (Shuaieb, 2013) (Elgahwash & freeman, 2014). Mohammed (2013) stated the adaptation of Mobile banking varies from one country to the other. For example, in developed countries such as the USA, Europe and Asia pacific is very considerable and significant while countries that called developing the case is

different; therefore, the adaptation rate is very low due to various factors. An acceptance model for Mobile banking for this project is identified into two external variables and two internal variables which impact on behavioral intention to utilize mobile banking.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter provides the methodology that is investigated in the study. It identified, defined and provided justification for the research design used in the study. It also discusses the data collection instrument and population that were identified along with sampling frames, techniques and the size for the study and lastly the data analysis methods that were employed.

3.2 Project Design

The project design used in this study was descriptive. A descriptive study is a study with clearly stated investigative questions. The project objective in a descriptive study is to describe the characteristics related to subject population i.e. the who, what when, where and how of a topic, evaluates the populations' rates that have certain traits or characteristics, discovery of associations among different variables and discovery and measurement of cause and effect relationships among variables (Mattila, 2015). A descriptive study was justified as it attempted to describe the characteristics associated with the subject population and based on the findings of the study; discovery of associations among different variables arose thus enabling the researcher to draw conclusions.

Descriptive studies or research in contrast to exploratory studies is more formalized and typically structured with descriptive hypothesis or investigative questions (Baptista & Oliveira, 2015). The goal of this study was to answer the research questions posed and not to develop hypothesis or questions for future research tasks.

Formal studies such as descriptive studies also try and discover associations among variables. This is sometimes labelled correlational study, a subset of descriptive studies (Mattila, 2015).

This study used cross-sectional research because some types of information once collected cannot be collected a second time from the same person without the risk of biases. While longitudinal research is important and can be used in this study, the constraints of budget and time imposed the need for cross-sectional analysis.

This design was adopted as the suitable research design due to the simplification in collecting the required original data to realize the objectives of this project. The design was also suitable for useful data to be gathered, quantified and reported as a demonstration of the real situation or characteristic in a study. In the same order, Pervez and Kjell (2002) commented that the key features of a descriptive research are structure, precise rules and procedures. Further, Cooper and Schindler (2008) defined a descriptive study as versatile and popular in business research.

3.3 Population

The population can be defined as whole set of individuals, objects, or events that are characterized by popular observable characteristics. The population represents the total number of Libyan bank's customers in Tripoli, which is estimated at 100,000 customers. According to Tull and Hawkins (2008), a population is the group the researcher wants to generalize or learn about whereas Cooper and Schindler (2008) define a population as the total of the elements upon which inferences can be made. A population is therefore the total collection of all elements about which one wishes to make some inferences (Cooper & Schindler, 2003). The target population in this study were customers of banking.

3.4 Sample Size

The main notion of sampling is to select several population's elements that will help the researcher to draw conclusions about the same entire population. Sampling presents benefits. It has the advantages of lower research costs, greater accuracy on the obtained findings, considerable progress in collecting the data, and the availability of the required elements of the population (Cooper & Schindler, 2008).

While the population is the larger set of observations, the smaller set is referred to as the sample. How large a sample size should be being a function of the variation in the population perimeters under study and the estimating precision needed by the researcher (Cooper & Schindler, 2008). A sample size of 382 existing customers was selected out of a population of 100,000 (Appendix A). The sample elements consisted of 382 existing customers within the banking in Tripoli (Appendix A). They were selected at random depending on their willingness to participate in the research study.

3.5 Data Collection Method

The method used to gather and collect data for this study is using a survey. It is a means of questioning a respondent via a collection for questions and instruments for both the respondent and the interviewer (Creswell, 2013). The instruments used in survey can be either in the form of questionnaires or interviews. Questionnaires are generally less costly, less time consuming, and considerably less demanding with respect to such matters such as selection, training, and supervision of personnel. Being more uniform and standardized than interviews, questionnaires are also less susceptible to biases due to deviations from instructions and method of administration (Creswell, 2013). Finally, confidentiality and anonymity can be more effectively insured through the use of questionnaires.

Questionnaires usually implemented to make descriptive or explanatory research. Descriptive research, such as the one being conducted using opinion questionnaires, attitude questionnaires, and questionnaires of organizational practices, will enable one to recognize and draw the variability in different phenomena (Creswell, 2013).

Questionnaire was the method of collecting data for this project. Firstly, the questionnaire was designed and validated by previous study. After that, questionnaire was distributed on thirty respondents for pilot study which was processed by Statistical Program for Social Scientists (SPSS). Subsequently, 380 respondents were given the questionnaire via online questionnaire, and 319 respondents responded. The data was saved as Excel file after collection via online questionnaire, and they were transferred to SPSS application for analysis.

3.6 Project Instrument

The questionnaire was thus the main instrument applied to gather the data relating to required study. The questionnaire developed contained both structured and unstructured questions. The questionnaire divided into two sections: the first one is focusing on the respondent's demographics. While, section two is designed to rate some statements pertaining to mobile banking adaptation.

Unlike section one where the questions required direct answers, the questions in section two relied on a Likert scale. The use of Lickert scales presents a simple way of gauging specific opinions and also enables the measurement of broader attitudes and values (Creswell, 2013).

This project is quantitative in nature. Questionnaire is used as the data collection instrument and is adopted from other researchers who measured the scale in different studies. The questionnaire is adopted from the previous studies. The questionnaire involves two sections which are demographic information and factors the influencing

the adaptation of mobile banking. The items were measured using five point Likert scale (from 1 refers to Strongly Disagree to 5 that refers to Strongly Agree). The project process is shown in Figure 3.1.

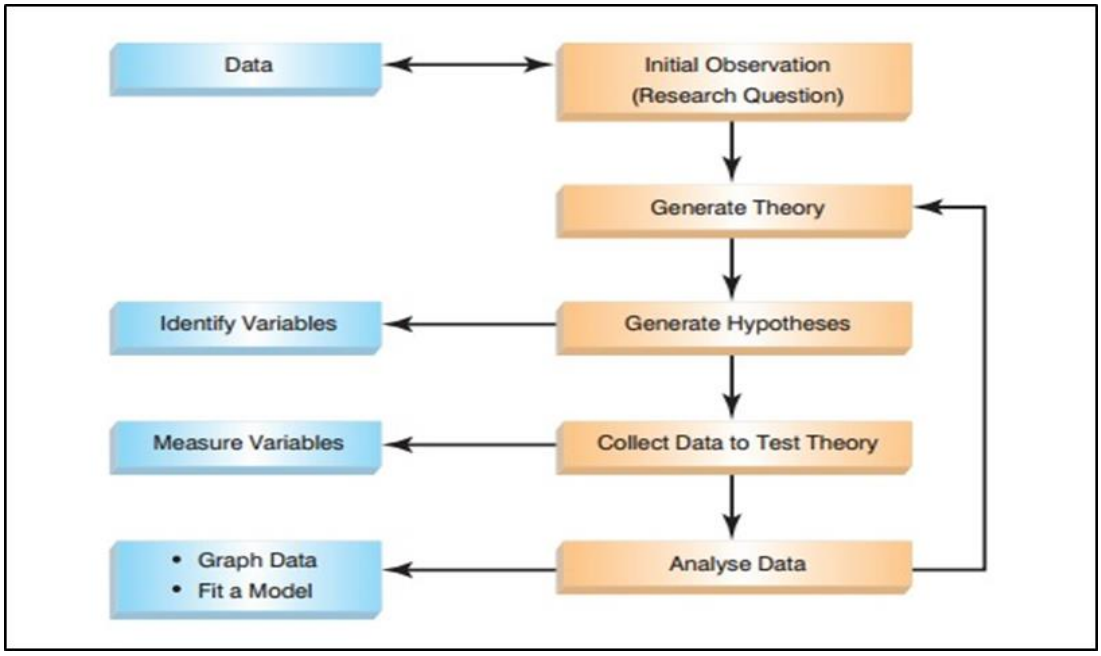

Figure 3.1: Project Process

3.7 Pilot Test

Pilot test is a mechanism or trial used to reveal weakness in design and instrumentation; to produce proxy data or selection of a probability sample (Cooper & Schindler, 2003). A pilot test of the questionnaire will have done whereby 30 existing customers of banking chosen at random responded to the questionnaire. The reason of doing this was to obtain feedback on any weaknesses and errors on the questionnaires. The questionnaires were then reviewed based on the comments and suggestions of those who responded to the pilot test.

After the pilot test, the instruments were fine-tuned and redesigned on the basis of the feedback that the researcher received. In terms of validity, both content and criterion-related forms of validity were undertaken. On the other hand, stable reliability was considered before actual research was undertaken.

3.7.1 Validity

The concept of validity as if the construct is measuring what it is supposed to measure. Moreover, they explained the validity in quantitative research as "*construct validity*". The construct is defined as the beginning concept, hypothesis, question or notion determining the data collection and the method of data collection (Mertler, 2015). For examining the validity of the scales of measurement, a critical assessment of all the constructs will be conducted by the researchers by studying the related literature and theories (Mertler, 2015). The item content for each of the target construct will be either by designing new constructs or by adaption of existing scales from the literature. Then, the content validity tests will be performed.

For the validity of this project, it was already applied because the questionnaire was adopted from the previous studies, thus, the questionnaire already approved in the literature.

3.7.2 Reliability

The concept of "*reliability*" is generally used to evaluate, test or assess the constructs in quantitative research, as well as this concept is used in all types of researches (Mertler, 2015). Reliability can be defined as consistency among items of the instrument. The focus of the reliability is if the study process is consistent and stable across various methods and researchers and over time. Thus, reliability can be defined as the degree to which a questionnaire produces same results in the same environment for all researchers (Mertler, 2015). This is imperative that the data reveal stable and trustworthy results in order to be reliable. Pilot study will be conducted by questionnaire distribution among banking customers in Tripoli in order to ensure its reliability. Cronbach's alpha will use through SPSS software to test the reliability.

3.8 Data Analysis Methods

An in-depth quantitative analysis of the content of the responses will be carried out. Statistical Package for Social Scientists (SPSS) is a software package has been used to analyze the structured data. Thereafter, the data was cleaned to ensure completeness of the information obtained. The collected data was statistically analyzed using Microsoft Excel program and the Statistical Program for Social Scientists (SPSS) and presented in tabular data i.e., tables; and depicted in figures to describe the results and findings clearly. These aided in making comparisons depending on the influence of the factors on the mobile Internet banks adaptation in Libya.

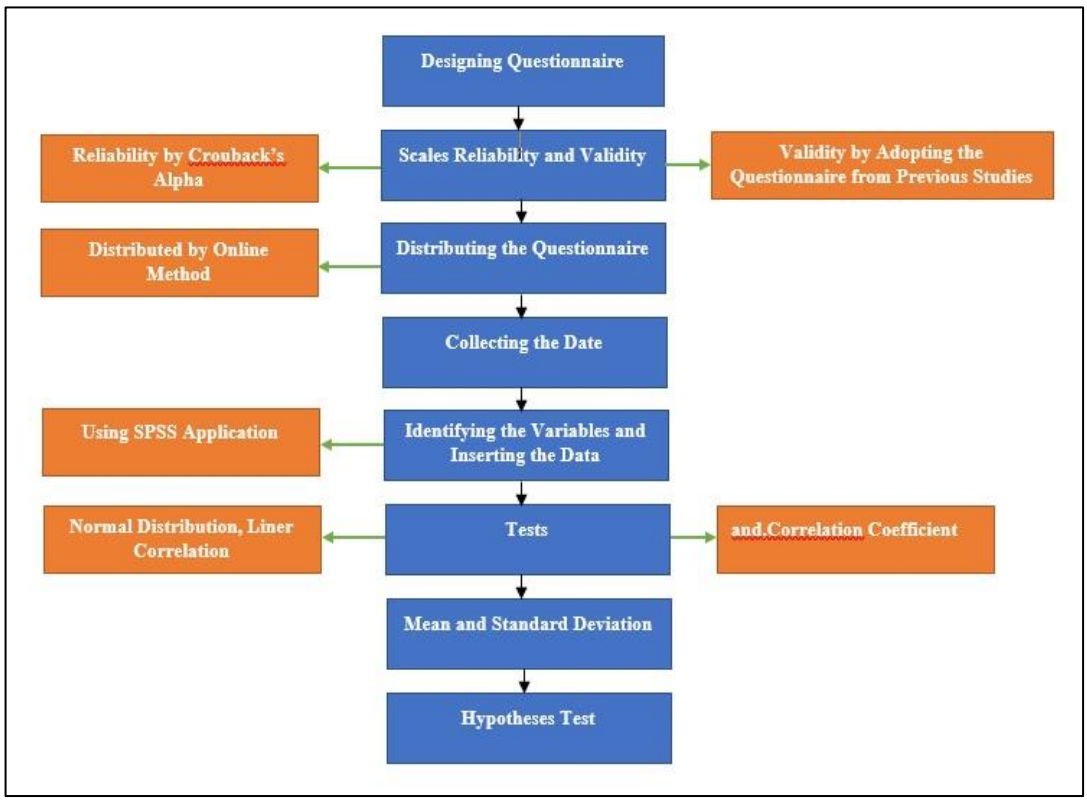

Figure 3.2: Data Analysis Method

3.9 Conclusion

This chapter has detailed the proposed research method, giving a description of the research design, population and sampling size, data collection method, research procedures. The population and sample size was also discussed. This was pertinent as it is imperative that the research reflects the views of the bank's customer base.

The chapter also indicated how the data was analyzed using Excel and SPSS and presented on the form of charts and tables. The next chapter presents the results and findings of the study based on the research questions.

CHAPTER 4

ANALYSIS AND FINDINGS

4.1 Introduction

This chapter was divided into two sections; first section examines the respondent's demographic characteristics. While, the second section, then, discusses the research hypotheses analysis.

2.4 Scales Reliability and Validity

Reliability defined as the measures consistency of a variable. To what extent the measures are free from error and therefore procedures stable and consistent coefficient (Neuman, 2006), the result of reliability test is presented in Table 4.1.

Table 4.1: Result of the Internal Consistent of Tested is tested by Using Cronbach's Alpha

Dimensions	**Cronbach's Alpha**
Behavioral intention	0.71
Perceived ease of use	0.76
Perceived usefulness	0.73
Self-efficiency	0.71
Facilitating conditions	0.72
Total	**0.86**

It is shown in Table 4.1 that the Cronbach's alpha values ranged between 0.71 to 0.76, where 0.76 was the top of the field of "Perceived ease of use", while 0.71 was lowest for the field of "Self-efficiency, Behavioral intention", and the value of Cronbach's alpha (0.86) is the highest value and acceptable for the application.

Five scales are developed and applied in this study to hypothesize fifty-four items totally. These scales were extracted from a comprehensive review based on theoretical literature and empirical, alike. It supplies some evidence for the validity of their content. The description of this section summarizes what the items selection used for, the reliability's evaluation, and the measurement scales validity. This study shows the measured scales reliability depending on Cronbach's coefficient alpha and internal consistency of the items in every scale. The levels of acceptable and unacceptable Cronbach's Alpha coefficient are described in Table 4.2 (Field, 2009).

Table 4.2: Acceptable and Unacceptable Levels of the Cronbach's Alpha Coefficient & Split-Half

Alpha Coefficient & *Split-Half*	**Implied Reliability**
Below .60	Unacceptable
between .60 and .65	Undesirable
between .65 and .70	minimally acceptable
between .70 and .80	Respectable
between .80 and .90	very good

The reliability of the scale is preferred as 0.70 and above. For the scale reliability improvement, he also suggests the deletion of items that have values less than 0.30 to total correlation. The results of this study show that the value of Cronbach's coefficient alpha for scales are different in the values according to data analysis. In this study, we computed Cronbach's coefficient alpha for the scales before and after data screen (Dukes, 2005).

Validity of this project already applied because the researcher adopted the questionnaire from the previous studies, thus, the questionnaire already approved in the literature.

4.3 The Sample of the Study

A collection of 319 users was consisted for the study, and they were randomly selected from the population of the study. Tables 4.3 to Table 4.3 show the individuals distribution according to the personal variables.

1. Gender

As shown in Table 4.3, the male gender percentage has reached to 41.4%, unlike the female gender that has reached to 58.6%. Figure 4.1 shows that.

Table 4.3: Frequency and Percentage for Gender (n=319)

Gender	Frequency	Percentage
Male	132	41.4 %
Female	187	58.6 %
Total	319	100.0 %

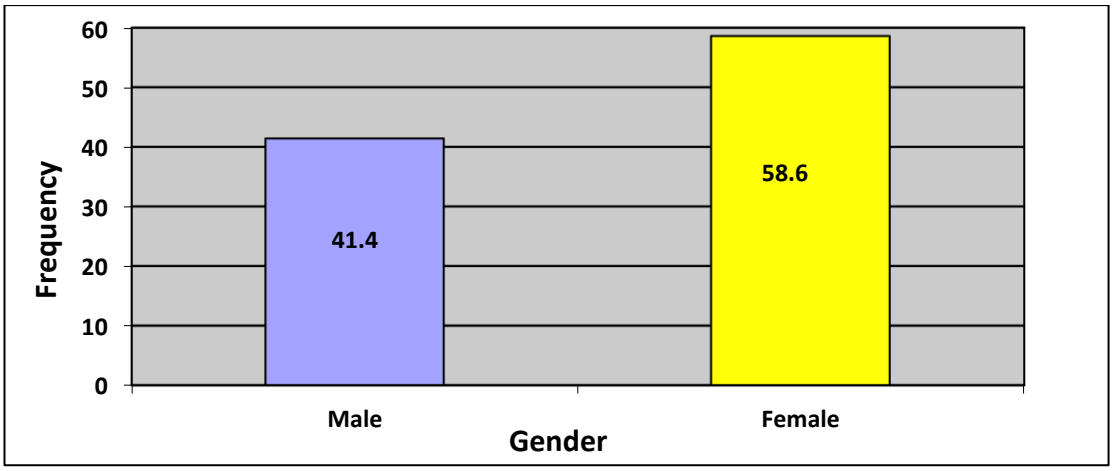

Figure 4.1: Percentage for Gender

Table 4.4 shows that the "Age" of category 31-40 years has reached to (43.3%), while the 15-20 years' category has reached to lowest percentage (6.6%), as shown in Figure 4.2.

Table 4.4: Frequency and Percentage for Age (n=319)

Age	Frequency	Percentage
15-20	21	6.6 %
21-30	125	39.2 %
31-40	138	43.3 %
Above 40	35	11.0 %
Total	319	100.0 %

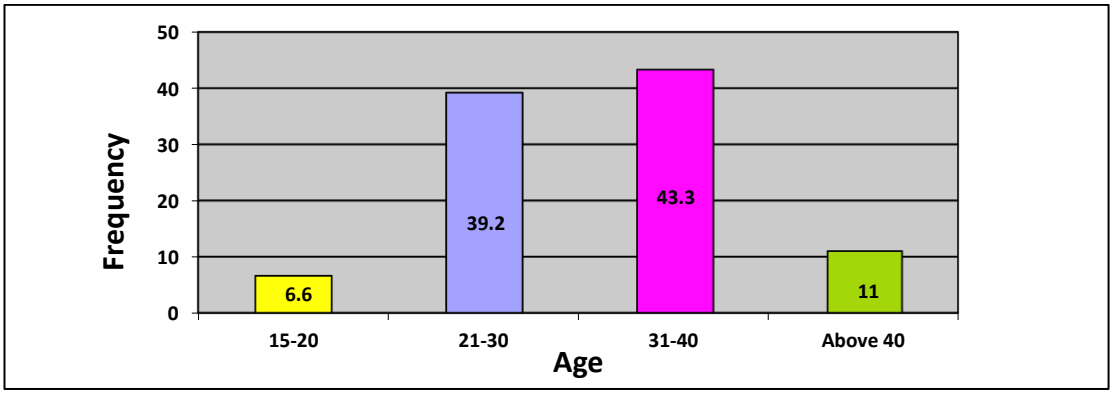

Figure 4.2: Percentage for Age

Table 4.5 shows the percentage for "use the mobile banking" highest reached (84.6%) for Already using mobile banking, but the lowest percentage reached (15.4%) for Not yet using it. Figure 4.3 shows that.

Table 4.5: Frequency and Percentage for Use the Mobile Banking (N=319)

Do you use the mobile banking	Frequency	Percentage
Already Using Mobile Banking	270	84.6 %
Not Yet Using It	49	15.4 %
Total	319	100.0 %

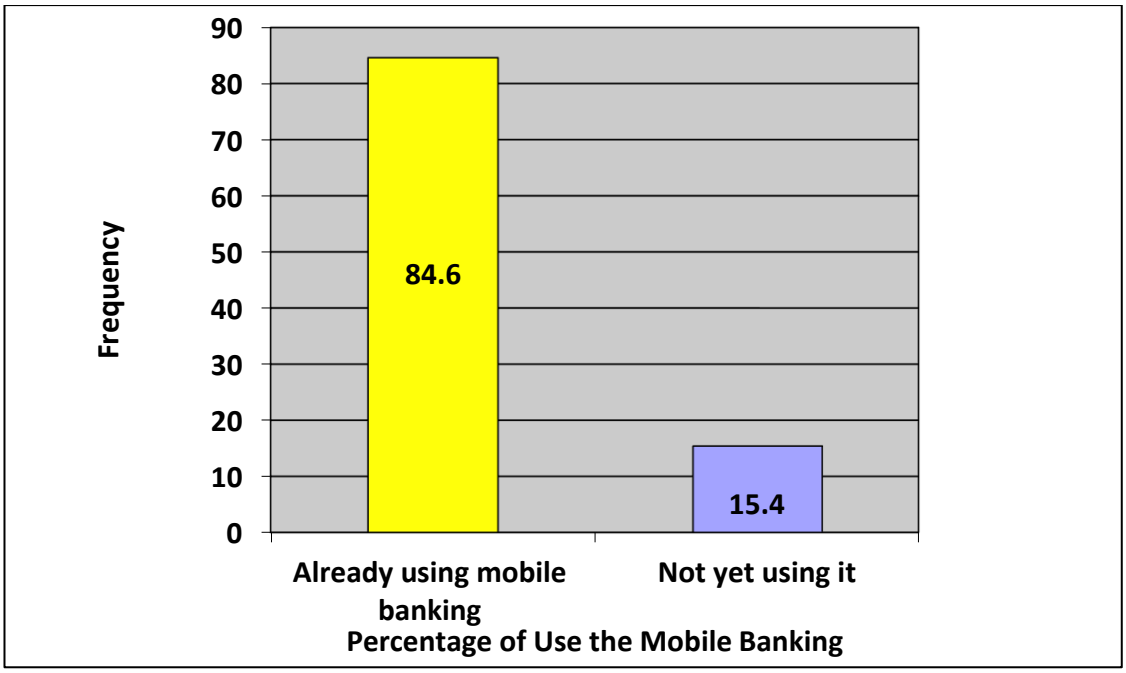

Figure 4.3: Percentage for Use the Mobile Banking

4.4 Normal Distribution:

Statistical errors are common in scientific literature, and about 50% of the published articles have at least one error (Ghasemi & Zahediasl, 2012). Many of the statistical procedures including correlation, regression, tests, and analysis of variance, namely parametric tests, are based on the assumption that the data follows a normal distribution or a Gaussian distribution (after Johann Karl Gauss, 1777–1855); that is, it is assumed that the populations from which the samples are taken are normally distributed (Ghasemi & Zahediasl, 2012). The assumption of normality is especially critical when constructing reference intervals for variables. Normality and other assumptions should be taken seriously, for when these assumptions do not hold, it is impossible to draw accurate and reliable conclusions about reality (Ghasemi & Zahediasl, 2012).

The normality tests are supplementary to the graphical assessment of normality (Ghasemi & Zahediasl, 2012). The main tests for the assessment of normality are Kolmogorov-Smirnov (K-S) test, Lilliefors corrected K-S test, Shapiro-Wilk test,

Anderson-Darling test, Cramer-von Mises test, D'Agostino skewness test, Anscombe-Glynn kurtosis test, D'Agostino-Pearson omnibus test, and the Jarque-Bera test. Among these, K-S is a much-used test and the K-S and Shapiro-Wilk tests can be conducted in the SPSS Explore procedure (Analyze → Descriptive Statistics → Explore → Plots → Normality plots with tests) (Ghasemi & Zahediasl, 2012).

The tests mentioned above compare the scores in the sample to a normally distributed set of scores with the same mean and standard deviation; the null hypothesis is that "sample distribution is normal." If the test is significant, the distribution is non-normal (Ghasemi & Zahediasl, 2012). For small sample sizes, normality tests have little power to reject the null hypothesis and therefore small samples most often pass normality tests. For large sample sizes, significant results would be derived even in the case of a small deviation from normality, although this small deviation will not affect the results of a parametric test (Ghasemi & Zahediasl, 2012). The K-S test is an empirical distribution function (EDF) in which the theoretical cumulative distribution function of the test distribution is contrasted with the EDF of the data. A limitation of the K-S test is its high sensitivity to extreme values; the Lilliefors correction renders this test less conservative. It has been reported that the K-S test has low power and it should not be seriously considered for testing normality. Moreover, it is not recommended when parameters are estimated from the data, regardless of sample size (Ghasemi & Zahediasl, 2012).

The following charts illustrate the variables normal distribution of the study as shown in Figure 4.4.

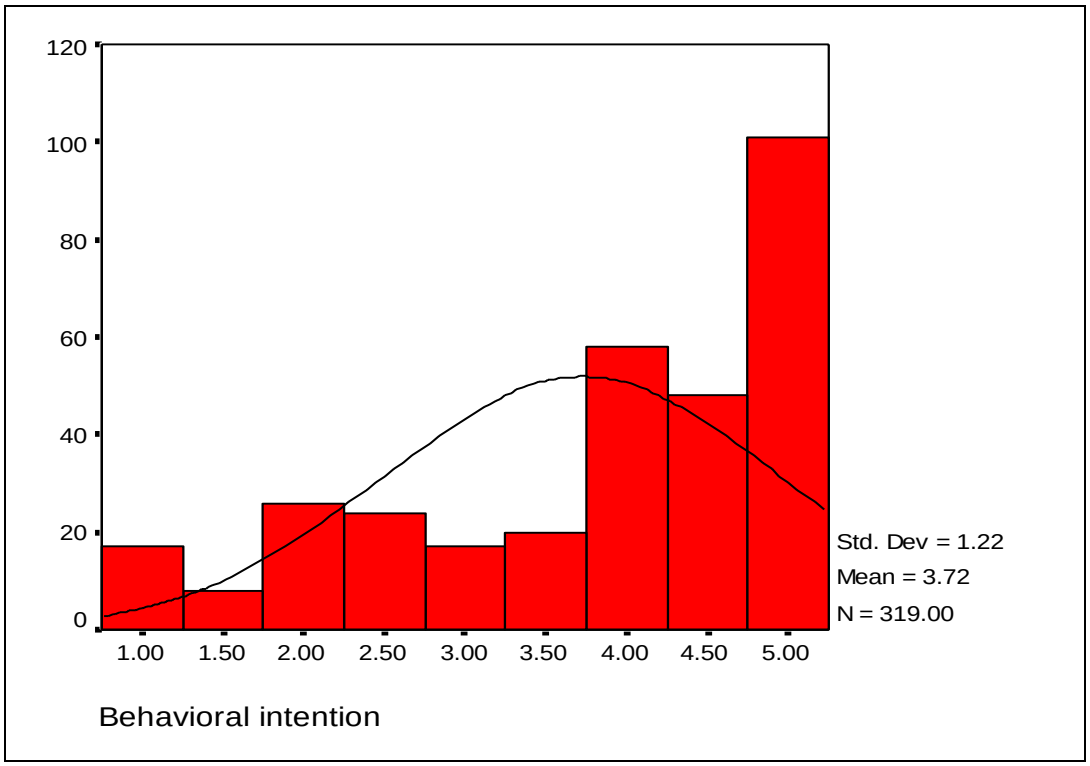

Figure 4.4: Normal Distribution for Behavioral Intention

It could be seen as shown in Figure 4.4 that the field of Behavioral Intention data follow a normal distribution.

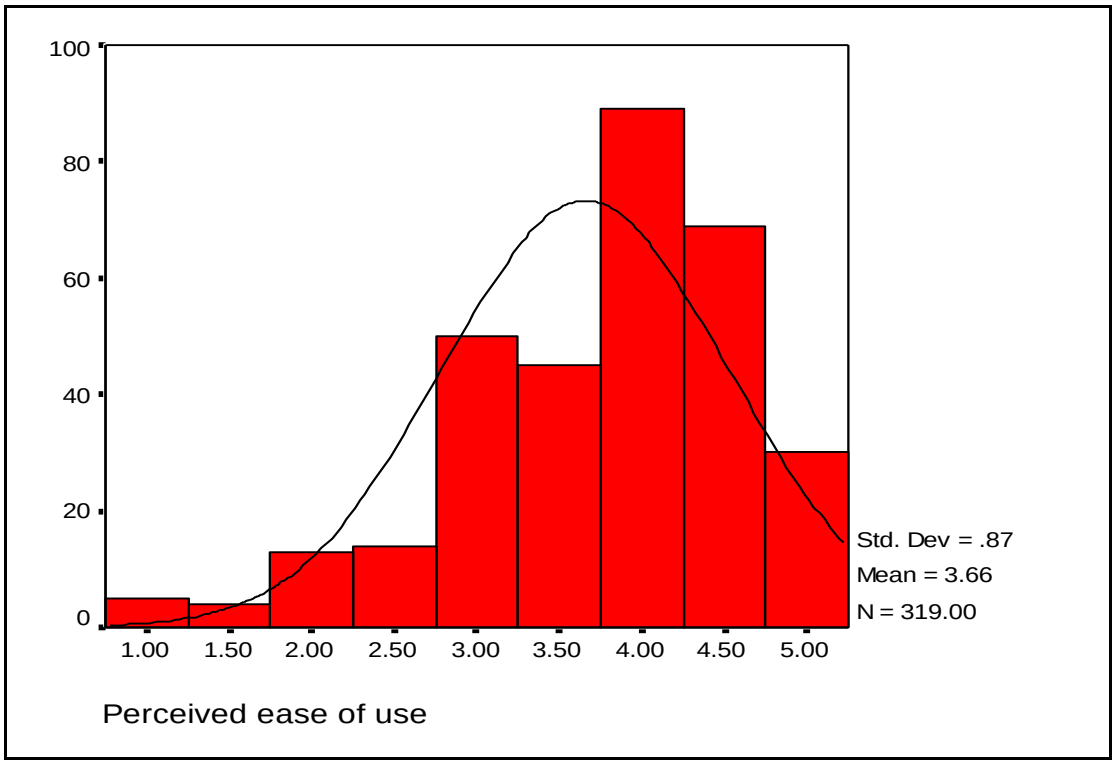

Figure 4.5: Normal Distribution for Perceived Ease of Use

It could be seen as shown in Figure 4.5 that the field of Perceived Ease of Use data follow a normal distribution.

As well as, it could be seen from the following Figure 4.6 that the field of Perceived Usefulness data follow a normal distribution.

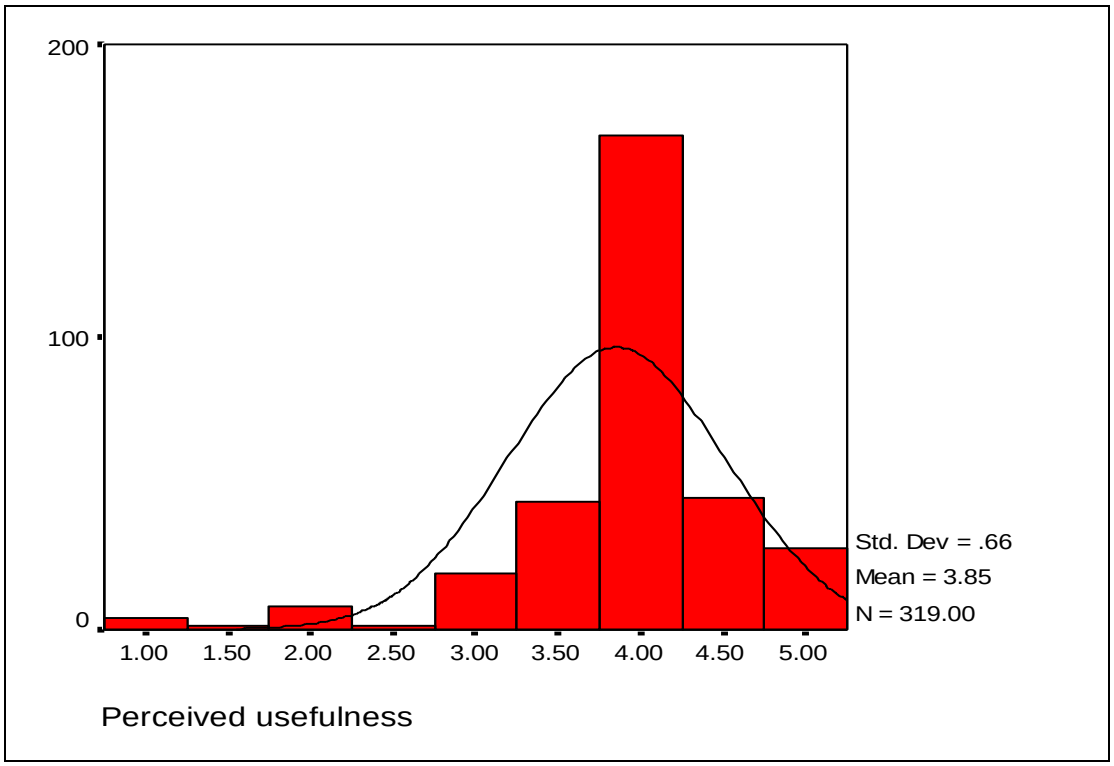

Figure 4.6: Normal Distribution for Perceived Usefulness

As well as, it could be seen from the following Figure 4.7 that the field of Self-Efficiency data follow a normal distribution.

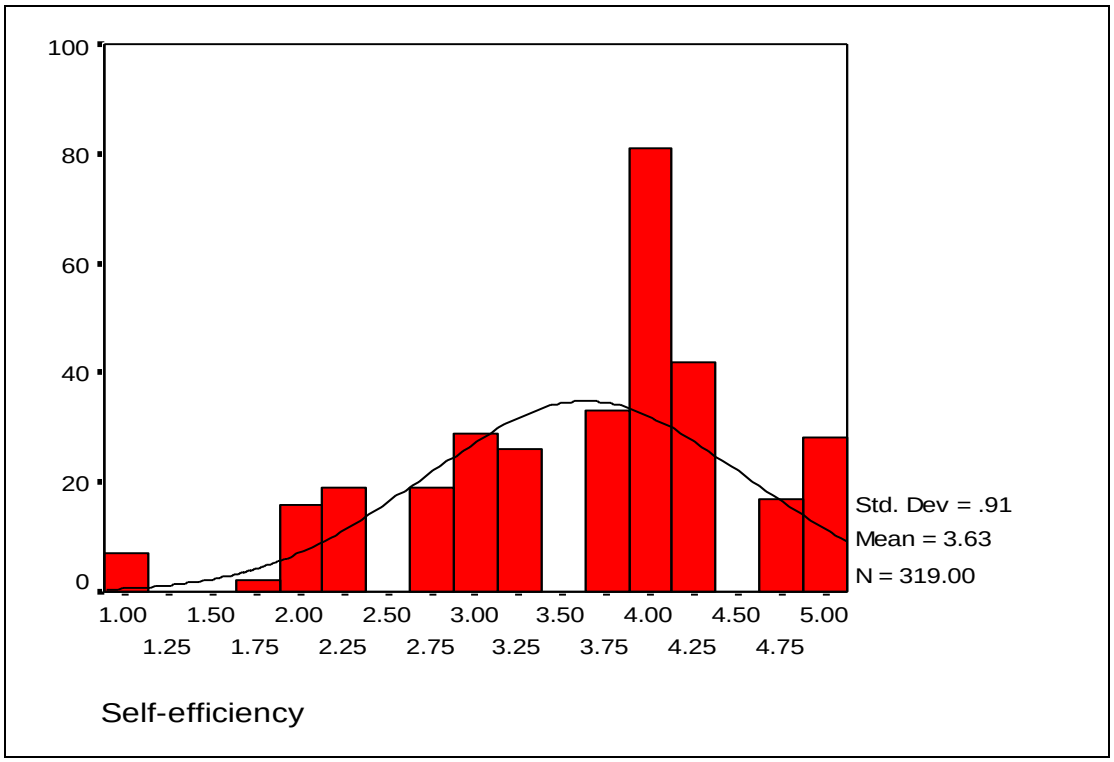

Figure 4.7: Normal Distribution for Self-Efficiency

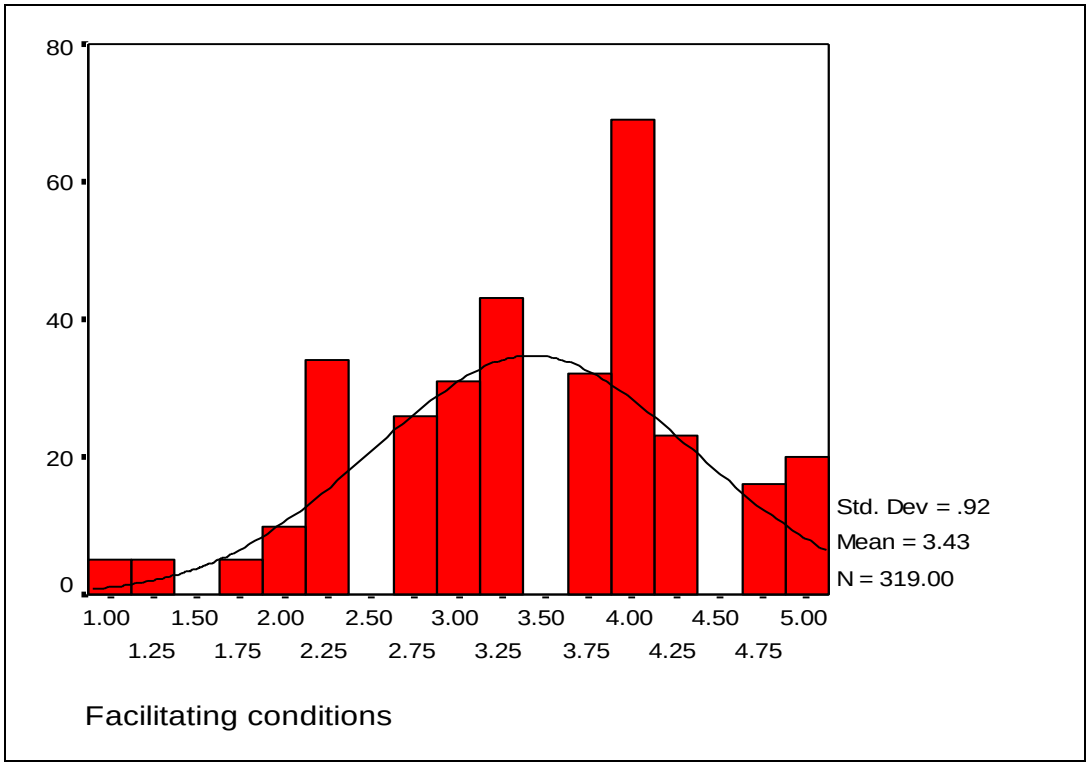

Figure 4.8: Normal Distribution for Facilitating Conditions

It can be seen from the above Figure 4.8 that the field of Facilitating Conditions data follow a normal distribution

4.5 Test Linear Correlation

The use of linear correlation test is to make sure that it has high correlation among independent variables, based on a test inflation coefficient of variation (VIF), and test variation allowable (Tolerance) for each variable of independent variables. These variables must be independent of the model with each other, to make sure that purpose of usage this test, knowing that it is necessary not to exceed the inflation variation of the value of the coefficient (10). The value of the test variation permitted must be from (0.05) and calculates the previous transactions for each independent variable. The results obtained are listed in Table 4.6.

Table 4.6: Test Inflation Variation and Contrast Are Allowed to Study Variables Coefficient

	Tolerance	**VIF**
Perceived ease of use	0.70	1.43
Perceived usefulness	0.65	1.54
Self-efficiency	0.42	2.38
Facilitating conditions	0.44	2.25

Shown in the Table 4.6 that the values of a test inflation coefficient of variation (VIF) for all the independent variables less than (10), ranging between (1.43-2.38), while the value of the test variation allowable coefficient (Tolerance) for all the independent variables is greater than (0.05) ranged value between (0.42-0.70). Therefore, we can say that there is no high correlation between the independent variables problem. This enhances the possibility to use all of them in the form. After the introduction of the independent variables in a multiple linear regression, which is used to find out which of the independent variables analyzed statistically significant an impact on the dependent variable, as well as to know the percentage of the effect, if any.

4.6 Correlation Coefficients

Table 4.7: Correlation Coefficients

		Behavioral intentions	**Perceived ease of use**	**Perceived usefulness**	**Self-efficiency**	**Facilitating conditions**
Behavioral intentions	Pearson Correlation					
	Sig. (2tailed)					
	N					
Perceived ease of use	Pearson Correlation	0.76				
	Sig. (2tailed)	0.00				
	N	319				
Perceived usefulness	Pearson Correlation	0.26	0.52			
	Sig. (2tailed)	0.00	0.00			
	N	319	319			
Self-efficiency	Pearson Correlation	0.22	0.39	0.46		
	Sig. (2tailed)	0.00	0.00	0.00		

	N	319	319	319		
Facilitating conditions	Pearson Correlation	0.14	0.37	0.41	0.74	
	Sig. (2tailed)	0.01	0.00	0.00	0.00	
	N	319	319	319	319	

Table 4.7 shows that there is a statistical correlation function between the study variables relationship. With the highest value of the correlation coefficient 0.76, while it reached its lowest value 0.14.

4.7 Mean and Standard Deviation for Items Domains

Table 4.8 shows that mean range between 3.42 – 4.06, being the highest mean for Item No.2 by mean 3.42 ± 1.33, but the lowest mean was for Item No.4 by mean 3.42 ± 1.33.

The overall mean for " Behavioral intentions " 3.72 ± 1.22.

Table 4.8: Mean and Standard Deviation for Items Domain "Behavioral intentions"

No.	Items	Mean	S.D
1	I intend to raise my mobile banking usage in future	3.84	1.61
2	I like to share the usage of mobile banking with the others	4.06	1.28
3	I used mobile banking in all transactions	3.59	1.44
4	I predict that I would use mobile banking.	3.42	1.33
Behavioral intentions		3.72	1.22

Table 4.9 shows that mean range between 3.10 – 4.09, being the highest mean for Item No.4 by mean 4.09 ± 1.10, but the lowest mean was for Item No.1 which is by mean 3.10 ± 1.34. The overall mean for " Perceived ease of use " 3.66 ± 0.87.

Table 4.9: Mean and Standard Deviation for Items Domain "Perceived Ease of Use"

No.	Items	Mean	S.D
1	I noticed that the mobile banking is easy and flexible.	3.10	1.34
2	Learning to use mobile banking creates confidence in me.	3.66	1.41
3	It is easy to me for having skills in mobile banking usage	3.76	1.02
4	It would be easy to me for memorizing the way of mobile banking tasks practice	4.09	1.10
Perceived ease of use		3.66	0.87

Table 4.10 shows that mean range between 2.55 – 4.59, being the highest mean for Item No.2 by mean 4.59 ± 0.93, but the lowest mean was for Item No.1 by mean 2.55 ± 1.45, The overall mean for " Perceived usefulness " 3.85 ± 0.66.

Table 4.10: Mean and standard deviation for Items domain " Perceived usefulness "

No.	Items	Mean	S.D
1	Using mobile banking would increase my productivity	2.55	1.45
2	I find mobile banking improve my time management	4.59	0.93
3	Using mobile banking make it easier for me to conduct bank transactions	4.17	1.08
4	I find mobile banking useful in providing the services to more customers	4.10	1.18
Perceived usefulness		3.85	0.66

Table 4.11 shows that mean range between 3.36 – 4.12, being the highest mean for Item No.1 by mean 4.12 ± 1.21, but the lowest mean was for Item No.3 by mean 3.36 ± 1.16. The overall mean for " Self-efficiency " is 3.63 ± 0.91.

Table 4.11: Mean and Standard Deviation for Items Domain " Self-Efficiency "

No.	Items	Mean	S.D
1	I feel capable of using the mobile for banking transactions	4.12	1.21
2	I feel capable of locating banking sites on the mobile	3.40	1.04
3	I feel the search of information into the mobile bank services is comfortable	3.36	1.16
Self-efficiency		3.63	0.91

Table 4.12 shows that mean range between 2.94 – 4.19, being the highest mean for Item No.3 by mean 4.19 ± 1.10, but the lowest mean was for Item No.2 by mean 2.94 ± 1.27. The overall mean for " Facilitating conditions " is 3.43 ± 0.92.

Table 4.12: Mean and Standard Deviation for Items Domain " Facilitating Conditions"

No.	Items	Mean	S.D
1	Help is available to assist with mobile banking activities.	3.15	1.26
2	Training by the bank for mobile banking is available to me	2.94	1.27
3	Overall, the use of mobile banking is very supportive	4.19	1.10
Facilitating conditions		3.43	0.92

4.8 Hypotheses Testing

Hypothesis tests in the desired model were done depending on three measures, the Correlation Coefficients (R) significance, the Determination Coefficient (R2), and the Multiple Regression (Beta).

Possible correlations range from +1 to –1. As a rule of thumb, values of "r" can be categorized into three ranges: 0-.2 is weak, .3-.6 is moderate and strong for .7-1 (Brace et al., 2000). (R^2) refers to the determination coefficient which gives a variable variance rate that is predicted from another variable, so it is helpful. Based on this, it considers as a measurement that grants us to specify the way of definite one can be predicted from a definite model/graph. The Multiple Regression measured by Beta which is a measure of how strongly each set of predictor variables (independent variables) influence the criterion variable (dependent variable). Using multiple regressions, we can test theories (or models) about precisely which set of variables is influencing our behavior. In general, the Correlation Coefficients (R) measure the relation between only two variables while the Multiple Regression, Beta, measure the relation between a set of variables with one variable. The Coefficient of Determination (R^2) shows the linearity between variables. In this research, we have examined r by using Pearson Correlation Coefficients calculated for variables pairs for examining the correlation coefficients significance. Beta is measured by applying the linear regression test.

Hypothesis 1: The Perceived Usefulness of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.13 shows that.

Model Summary

Table 4.13: The results of simple regression analysis for the Hypothesis 1

R	R Square	F	Sig.
.256[a]	.066	22.295	.000[b]

a. Predictors: (Constant), Perceived usefulness

The table 4.13 shows the values of (R) and (R square) are statistically significant, which indicates the Perceived Usefulness of mobile internet banking has significant impacts on the behavioural intentions for utilizing mobile internet banking, which indicates acceptance of the hypothesis installed.

Hypothesis 2: The Perceived Ease of Use of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.14 shows that.

Table 4.14: The results of simple regression analysis for the Hypothesis 2

Model Summary

Model	R	R Square	F	Sig.
1	.756[a]	.571	422.068	.000

a. Predictors: (Constant), Perceived Ease of Use

The table 4.14 shows the values of (R) and (R square) are statistically significant, which indicates The Perceived Ease of Use of mobile internet banking has significant impacts on the behavioural intentions for utilizing mobile internet banking, which indicates acceptance of the hypothesis installed.

Hypothesis 3: Perceived self-efficacy has a significant impact on the Perceived Usefulness of mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.15 shows that.

Table 4.15: The results of simple regression analysis for the Hypothesis 3

Model Summary

Model	R	R Square	F	Sig.
1	.461[a]	.213	85.731	.000

a. Predictors: (Constant), Perceived usefulness

The table 4.15 shows the values of (R) and (R square) are statistically significant, which indicates Perceived self-efficacy has a significant impact on the Perceived Usefulness of mobile internet banking, which indicates acceptance of the hypothesis installed.

Hypothesis 4: Perceived self-efficacy has a significant impact on the Perceived Ease of Use of mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.16 shows that.

Table 4.16: The results of simple regression analysis for the Hypothesis 4

Model Summary

Model	R	R Square	F	Sig.
1	.386[a]	.149	55.557	.000

a. Predictors: (Constant), Perceived ease of use

The table 4.16 shows the values of (R) and (R square) are statistically significant, which indicates Perceived self-efficacy has a significant impact on the Perceived Ease of Use of mobile internet banking, which indicates acceptance of the hypothesis installed.

Hypothesis 5: Facilitating Conditions have a significant impact on the Perceived Usefulness of mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.17 shows that.

Table 4.17: The results of simple regression analysis for the Hypothesis 5

Model Summary

Model	R	R Square	F	Sig.
1	.412[a]	.170	64.848	.000

a. Predictors: (Constant), Perceived usefulness

The table 4.17 shows the values of (R) and (R square) are statistically significant, which indicates Facilitating Conditions have a significant impact on the Perceived Usefulness of mobile internet banking, which indicates acceptance of the hypothesis installed.

Hypothesis 6: Facilitating Conditions have a significant impact on the Perceived Ease of Use of mobile internet banking.

To test the validity of the hypothesis was applied simple regression analysis, Table 4.18 shows that.

Table 4.18: The results of simple regression analysis for the Hypothesis 6

Model Summary

Model	R	R Square	F	Sig.
1	.365[a]	.133	48.669	.000

a. Predictors: (Constant), Perceived ease of use

The table 4.18 shows the values of (R) and (R square) are statistically significant, which indicates Facilitating Conditions have a significant impact on the Perceived Ease of Use of mobile internet banking, which indicates acceptance of the hypothesis installed.

4.9 Conclusion

According to the previous tables, it could be concluded:

1. The Perceived Usefulness of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.

2. The Perceived Ease of Use of mobile internet banking has a significant impact on the behavioural intentions for utilizing mobile internet banking.
3. Perceived self-efficacy has a significant impact on the Perceived Usefulness of mobile internet banking.
4. Perceived self-efficacy has a significant impact on the Perceived Ease of Use of mobile internet banking.
5. Facilitating Conditions have a significant impact on the Perceived Usefulness of mobile internet banking.
6. Facilitating Conditions have a significant impact on the Perceived Ease of Use of mobile internet banking.

CHAPTER 5

DISCUSSION & CONCLUSIONS

5.1 Introduction

The past section has exhibited the consequence of dissected gathered information. In section 5, it gives subtle translation elements of research results and figured out if the theories were upheld by information. This part comprises of the discoveries synopsis, ramifications of study, study impediment and suggestion for future research. In conclusion, a general finish of the study.

5.2 Summary of the Findings

The results show that there is a significant impact of perceived ease of use, perceived usefulness, and Facilitating conditions on consumer's Behavioral intentions. However, the impact does not appear in Self-efficiency. Because the researcher attributes this result to commercial banks, which focuses on providing electronic services, which are characterized by high levels of quality and safety, as the researcher tells banks to eliminate the mistakes and problems that were facing their customers for their services use via mobile phone. This result is also to speed changes in the banking environment as characterized by the banking business in the rapidly changing is unprecedented. It requires commercial banks operating in this sector to respond to this change and provide services in a distinctive way, high quality and through the creative capabilities acquisition to help them to create new services enjoy a high degree of quality to keep up with ongoing changes in their work environment. The quality dimensions' application ensures that the bank remains competitive and to achieve its own competitive advantage. This results from the study agreed (citing Md Nor & Pearson, 2008, According to Lin et al. (2015),

It attributes the researcher this result to the banks focus on providing services that are characterized by high levels of quality and safety, as the researcher tells banks to eliminate the problems and the mistakes that were facing their customers for their use of the services, attributed the researcher this result also to the speed of developments in the banking environment change as characterized the banking business at the moment quickly change is unprecedented, which requires banks operating in this sector to respond to this change and provide services in a distinctive way, high quality and through the acquisition of the capabilities of creative help them create new services enjoy a high degree of quality to keep up with developments in the business environment changes .

5.3 Implications of the Study

The importance of the study for the decision makers at Libyan commercial banks is to know the customer feedback about the service quality provided to them, to explore their views on areas that need improvement and development of these services, and to make the performance bank level of its customers' expectations.

The importance of the study is also to try to detect the electronic service quality level and its impact on customer satisfaction for the use of those services. This will open the way for other future studies designed to identify the quality impact of electronic services to other variables associated with customers, such as loyalty to the bank.

5.4 Limitations

There are some limitations in this project which are as following:

1. This study conducted on the Libyan banking customers in Tripoli.
2. The study was conducted during of the year 2016.
3. The study targeted just the impacts which influencing the acceptance of mobile banking.

5.5 Contribution

1 This study contributes to achieving high levels of customer satisfaction.
2 Banks need to show management trends and develop new concepts with their clients about banking services.
3 For decision-makers in commercial banks in the knowledge of customer feedback.

5.6 Future Research

Depending on the findings and conclusions that have been reached, the study recommends the following:

- The need for the banks to provide databases to help customers meet their needs and help them make their own decisions with regard to banking services.
- The banks undertake studies to follow up on all that is new with respect to the banking services development.
- The banks are working to create a confidence atmosphere and trust in their relations with customers.
- The need to follow up recent developments in the electronic field and reach customers through the latest electronic means as having a direct impact on banking services quality.
- Provide Guidance Publications to perform banking transactions using electronic services.

5.7 Conclusion

By the results of the statistical analysis and hypothesis testing was reached the following conclusions: There is a significant impact of Perceived ease of use on costumer’s Behavioral intentions. There is a significant impact of Perceived usefulness on customer’s Behavioral intentions. There is no significant impact of

Self-efficiency on customer's Behavioral intentions. There is a significant impact of Facilitating conditions on customer's Behavioral intentions.

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APPENDIX A

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
A1	319	1.00	5.00	3.8370	1.61121
A2	319	1.00	5.00	4.0564	1.28487
A3	319	1.00	5.00	3.5862	1.43560
A4	319	1.00	5.00	3.4201	1.33378
Behavioral intention	319	1.00	5.00	3.7249	1.22352
Valid N (listwise)	319				

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
BB1	319	3.1003	1.34444
BB2	319	3.6646	1.41100
BB3	319	3.7649	1.02080
BB4	319	4.0940	1.09771
Perceived ease of use	319	3.6560	.86726
Valid N (listwise)	319		

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
CC1	319	2.5517	1.45033
CC2	319	4.5862	.92719
CC3	319	4.1661	1.07895
CC4	319	4.1034	1.18373
Perceived usefulness	319	3.8519	.65802
Valid N (listwise)	319		

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
DD1	319	4.1160	1.20886
DD2	319	3.4044	1.04435
DD3	319	3.3636	1.15989
Self-efficiency	319	3.6280	.91243
Valid N (listwise)	319		

Descriptives

Descriptive Statistics

	N	Mean	Std. Deviation
E1	319	3.1536	1.26077
E2	319	2.9373	1.27228
E3	319	4.1850	1.09615
Facilitating conditions	319	3.4253	.91530
Valid N (listwise)	319		

Regression

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Facilitating conditions, Perceived ease of use, Perceived usefulness, Self-efficiency[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Behavioral intention

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780[a]	.609	.604	.76986

a. Predictors: (Constant), Facilitating conditions, Perceived ease of use, Perceived usefulness, Self-efficiency

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	289.947	4	72.487	122.303	.000[a]
	Residual	186.102	314	.593		
	Total	476.049	318			

a. Predictors: (Constant), Facilitating conditions, Perceived ease of use, Perceived usefulness, Self-efficiency

b. Dependent Variable: Behavioral intention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.777	.269		2.886	.004					
	Perceived ease of use	1.227	.060	.87	20.62	.00	.756	.758	.728	.699	1.430
	Perceived usefulness	-.297	.081	.16	3.65	.00	.256	-.202	-.129	.649	1.542
	Self-efficiency	.100	.073	.08	1.38	.17	.215	.077	.049	.421	2.377
	Facilitating conditions	-.221	.071	.17	3.12	.00	.141	-.174	-.110	.444	2.254

a. Dependent Variable: Behavioral intention

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Perceived ease of use	Perceived usefulness	Self-efficiency	Facilitating conditions
1	1	4.892	1.000	.00	.00	.00	.00	.00
	2	.051	9.807	.06	.15	.03	.11	.21
	3	.028	13.292	.35	.74	.04	.00	.01
	4	.016	17.288	.05	.01	.03	.80	.75
	5	.013	19.465	.54	.10	.91	.09	.03

a. Dependent Variable: Behavioral intention

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

APPENDIX B

Questionnaire

Dear respondents

The purpose of this questionnaire is to find the factors that influence the adoption of mobile banking services in Libya. The study aims to collect data from the Libyan customers. You are invited to participate in this study. Your response will be kept strictly confidential. Only those who are involved in the research will have access to the information.

Thank you very much for your time and cooperation. I greatly appreciate your help in furthering this research endeavor.

(*) Please answer the following section and follow the instructions carefully

Section 1: Background Information

1- What is your age?

- 15- 20
- 21- 30
- 31- 40
- above 40

2- What is your gender?

- Male
- Female

3- Do you use the mobile banking?

- Already using mobile banking
- Not yet using it

Please rate below statements according to the associated numbers where

(1) Strongly Disagree

(2) Disagree,

(3) Neutral,

(4) Agree,

(5) Strongly Agree

Behavioral intention					
Item	1	2	3	4	5
I intend to increase my use of mobile banking in the future					
I like to share the usage of mobile banking with the others					
I used mobile banking in all transactions					
I predict that I would use mobile banking.					

Perceived ease of use					
Item	1	2	3	4	5
I find mobile banking is easy and flexible.					
Learning to use mobile banking creates confidence in me.					
It would be easy for me to become skillful at using mobile banking					
It is easy for me to remember how to perform tasks using the mobile banking.					

Perceived usefulness					
Item	1	2	3	4	5
Using mobile banking would increase my productivity					
I find mobile banking improve my time management					
Using mobile banking make it easier for me to conduct bank transactions					
I find mobile banking useful in providing the services to					

more customers					

Self-efficiency					
Item	1	2	3	4	5
I feel capable of using the mobile for banking transactions					
I feel capable of locating banking sites on the mobile					
I feel comfortable searching for information about the banks services on the mobile					

Facilitating conditions					
Item	1	2	3	4	5
Help is available to assist with mobile banking activities.					
Training by the bank for mobile banking is available to me					
Overall, the use of mobile banking is very supportive					

(*)

Hernandez, B., Jimenez, J., & Martin, M. J. (2009). The impact of self-efficacy, ease of use and usefulness on e-purchasing: An analysis of experienced e-shoppers. *Interacting with Computers*, *21*(1), 146-156.

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