

# Mobile Phone Banking Applies and Customer Intention - A Case Study in Libya

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**Abstract**—Aim of this paper is to explore the prospect of a new approach of mobile phone banking in Libya. This study evaluates customer knowledge on commercial mobile banking in Libya. To examine the relationship between age, occupation and intention for using mobile banking for commercial purpose, a survey was conducted to gather information from one hundred Libyan bank clients. The results indicate that Libyan customers have accepted the new technology and they are ready to use it. There is no significant joint relationship between age and occupation found in intention to use mobile banking in Libya. On the other hand, the customers' knowledge about mobile banking has a greater relationship with the intention. This study has implications for demographic researches and consumer behaviour disciplines. It also has profitable implications for banks and managers in Libya, as it will assist in better understanding of the Libyan consumers and their activities, when they develop their market strategies and new service.

**Keywords**—Banks in Libya, Customer Knowledge, Intention, Mobile banking.

## I. INTRODUCTION

ELECTRONIC banking is becoming a significant factor in the future growth of financial services, industries, and particularly banking sector. It is being considered as the most important leap forward on banking sector, recently. Meanwhile, many banks have promptly recognized the fact that there are a significant number of customers, who would like to do their banking through electronic means.

For example, electronic banking services have a lot of benefits for banks, one of these being the reduction of expenditures on physical structures. It is believed that the electronic banking will help banks to cut down costs, increase revenue, and become more convenient for customers [1]. Another important benefit from electronic banking is the development of a more useful information collection and management system. Recently, mobile banking is being considered as a revolution in the electronic banking sector. A lot of countries in different regions in the world have adopted the new technology such as; Poland, India, Malaysia etc. In fact, traditional banking service has faced adoption of new innovations for the past three decades. The new processes have been developed to facilitate financial transactions, payment dealings, credit transactions etc. All of these services can easily be done by mobile banking [2]. Many banks consider that the acceptance of all aspects of electronic

banking will increase international competition and will enhance efficiency, performance and service quality [3]. With the improvement of mobile technologies and devices, banking clients are able to conduct banking services at anywhere and at any time.

Many banks in the world currently provide mobile contact to financial information, even though new innovations are not readily accepted and adopted by everyone [4]. Recently, electronic banking and its services have been launched by private commercial banks in Libya. So this study is intended to explore if Libyan people are ready to accept this new method of banking and also to evaluate customer knowledge about mobile banking in commercial aspects in Libyan Banking sector. It also explores the relationship between age, occupation and intention to use mobile banking for commercial banking in Libya. This investigation includes four commercial banks of Libya - Al Wahada Bank, Al Gomhoria Bank, Al Tanmia Bank and Bank of North Africa. All of these banks have launched and provided mobile banking to their customers, which appears to be slowly growing in Libya. Here we can assume the independent variable as mobile banking and the dependent variable as customer intention. Hypothetical tests were conducted to determine how mobile banking (independent variable) affects customer intention (dependent variable); and to examine the relationship between age, occupation and intention to use mobile banking. In short, it is hoped that the results of this study will expand present knowledge on acceptance of mobile banking technology in Libya. Moreover, the study may give deeper insights into what is needed in order for Libyan bank customers to accept this rising technology and, thus, allow for improvement in bank strategies to attract potential users of mobile banking.

## II. LITERATURE REVIEW

Banking industry has developed a great deal than earlier period. It has developed excellent owing to several achievements [5]. The banking scenario has seen many technological changes in the last forty years, gradually changing from a manually operated industry to one that is highly technologically dependent [6]. 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 bank. However, new innovations are not readily accepted and adopted by everyone [7]. Electronic banking has been launched by some local private and multinational banks [7]. It includes many kinds of services, and can be said to be consisting of the following stages: PC banking or offline banking, online banking, telephone

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banking, TV banking [8], [9]. Also, Sadi, Azad & Noorudin stated the advantage and differences between the various aspects of electronic banking. 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 [10]. Things get done so easily and customer retention is improved [11]-[13]. Although mobile banking has developed in popularity, mobile transactions have not been used as much as estimated [14], [15]. According to Cellular-News there are only 200 million mobile banking clients out of 5 billion mobile clients around the world [16]. Yet in developed countries where mobile devices have become ubiquitous, m-banking acceptance rate is still low (UK – 20.4%, USA – 22%, Sweden – 20%). In fact, traditional service banking has faced newer innovations, due to which mobile banking has become an essential part of lives of thousands, most of their behavioral features and desires can be related to their mobile activities [17]. Banks in Arabic countries have recognized the benefits of e-banking technology in improving productivity and efficiency fairly recently, with some banks (i.e. Libyan banks) having taken steps to adopt e-banking within its existing banking system [18].

This is largely due to bank employee's conflict to new technologies [19]. The Libyan banks have received a lot of advises to launch electronic banking. They have recognized the benefits of electronic banking and believe that the acceptance all aspects of electronic banking will drive towards competitive performance in the international stage and enhance efficiency, performance and service quality [20]. Libyan study stated that Libyan bank is under growing pressure to enhance their service and have a lot of staff who have the highest efficiency, but provide the worst banking services [21]. Furthermore, the huge distance between Libyan banks has also created a pressure for connecting the headquarters with their branches electronically, rather than handling cash and paper manually. The global private banks request improved products and technologies to be automatically ready[22].. In fact, Libyan banks have started to provide their customers with newer innovations such as Automated Teller Machines (ATMs) and telephone banking. But they are still focusing on traditional banking processes to undertake their routine banking actions, even though electronic banking has found its way to Libyan bank sector. Understanding the key reason for the slow rate of adoption is a significant issue for the banking sector [23]. Furthermore, the planning of strategies of the Libyan Central Bank has expressed its intention for upgrading to modern technologies [24]. Studying the determinants of mobile acceptance will provide superior understanding of intention of the potential customers of the mobile banking i.e. for what reason they intend to use mobile banking[25]..

There is a growing body of academic research examining the determinants of mobile banking acceptance and its utilization [26]-[27]. Another study indicated that mobile banking is among the most recent financial channels today [28]. Bankers and mobile service providers should work together to build trust factors among consumers [29]. More

studies examined the determinants of behavioral intention to mobile banking in Korea. The researchers found that trust is a key for creating behavioral intention. In addition, they pointed out that the perceived usefulness is the most significant factor for explaining the behavioral intention [30]. Some of the academic researches focused on understanding customers' attitude towards the adoption of new technologies, which has shown to be one of the most difficult topics in technology adoption literature [31]. Alshawaf guessed that poor customers are more likely than rich customers to utilize mobile phones to start financial transactions [32]. People in developing countries have less selections (if any) for transferring money and accessing banking services, because the formal banking infrastructure is less organized - fewer bank branches, Automated Teller Machines (ATMs) being low in number and generally located near to fewer branches.

Consequently, with regards to early technology adoption, numerous researchers from Arabic countries e.g., [33]-[34] critically argue that current technology adoption theories have been developed in Western countries, and therefore they strongly reflect the attitudes, values and beliefs of those environments. Therefore, it is an important for any country to consider their own factors that encourage the customers' attitude towards the adoption of technological systems, because each country has their unique adoption factors [35]. Understanding intention is an important subject for organization in order to understand target customers [36]. The target of the study - mobile banking is a new approach in Libyan bank sector since 2007, which has got a great importance in the banking sector and for the customers also. In addition, opposition is grown up every day between banks in this term [37]. It cannot be denied that there have been a lot of studies in this topic in other countries. But this study will be carried out with Libyan researchers who are interested in e-banking; and the researcher will focus on mobile banking which is the newest procedure for self-banking service in Libya. So far, there has been no available study on this area in Libya. This is why the researchers were interested to explore about mobile banking in this scope. This paper presents contributions to the development of these approaches in the banking sector in Libya.

### III. OBJECTIVES OF THE STUDY

The main objectives of the study are as follows:

1. To evaluate Libyan peoples readiness to accept mobile phone banking.
2. To examine the relationship between age and intention to use mobile banking.
3. To examine the relationship between occupation and intention to use mobile banking.
4. To evaluate customer knowledge about mobile banking and it's effect on their intention to use mobile banking.

#### IV. HYPOTHESES

1. Libyan people are ready to accept a new technology.
2. There is a relationship between age and intention to use mobile banking.
3. There is a relationship between occupation and intention to use mobile banking
4. Customer knowledge about mobile banking affects on customers' intention to use mobile banking in Libya.

#### V. LIMITATIONS OF THE STUDY

The limitations of this study are the inadequate database of on Libyan clients in banking sector. Very few studies and empirical data are found for Libyan market. The second limitation is that the data bank is based on only one Libyan city – Derna - whereas the original plan was to cover all the banks in two major cities to collect data and make profiles for them. Thus, this study may not reflect the whole picture of Libya. Also, Limited time and financial budget affected the plan. Another limitation of this study is that some Libyan customers were non-cooperative with the researcher. Some of them refused to give their feedbacks.

#### VI. SAMPLE AND METHODOLOGY

This paper is intended to be a local research study based on the population of Libya and more on the city of Derna, where there is a higher probability of people being aware and knowledgeable of mobile banking and its service. The scope of the study is limited to the 4 major commercial banks - Al Wahada Bank, Al Gomhoria Bank, Al Tanmia Bank and Bank of North Africa. The test cases of the study are the chief commercial banks in Libya. They were selected, because they are the only Libyan banks that have applied mobile banking technology in their main branches. A small pilot test of the questionnaire with 15 respondents was carried out by the researcher to validate an understanding of the questions, to delete any ambiguity and to confirm that the correct data was being gathered. As mentioned above, questionnaire was established based on a wide literature review to certify content validity. The wording was then adjusted to suitable study of mobile banking. The respondents were requested to check the answer which best defined their level of agreements with the statements. Each question was measured on a five-point liker scale, ranging from (1) strongly disagree to (5) strongly agree. The questionnaire was tested extensively for validity before the actual questionnaire was administered. So, past operational measures of respondents were slightly modified to create the items used in the survey, and the sample size is limited to 100 respondents. This consists of questionnaire distributed to bank customers as well. The sample size is thought to be large enough to represent the whole population. However, the following methods were used for collecting the appropriate data for study: The customers were selected based on knowing whether they possess some knowledge on mobile banking and taking their intention into account. The questionnaires were distributed to a random sample of persons and their replies were analyzed using the software SPSS (version 18), because

this program is commonly employed for data analysis [38]. The questions included in the questionnaire are designed to encourage respondents in order to help in reaching the objective and testing of the hypotheses. These questions are structured for getting information on mobile banking. At present, the challenges faced regarding mobile banking in Libya and thus the method-appropriate strategies that can be applied and assisted to utilize the ground from which study is done in order to reach the most precise solution to the problem under study.

#### VII. ANALYSIS AND FINDINGS

The sample used is fairly represented by males and females. Among 100 respondents, 58 percent were female and 42 percent male, which is considered to be positive; as there is more or less suitable mix of males and females and no limits in this study. The survey includes the occupation types, especially the employee type. It is found that the respondents consist of 62 percent from the employees, 20 percent of the retired persons, 12 percent from the business sector and the 4 percent from the student type. It is deemed to be positive, as there is more or less an acceptable mix of different occupation types in this study. It is a general notion that the younger generation has not any knowledge about mobile banking compared to the older and middle-aged age group. Since middle-aged age group are generally assumed to prefer mobile banking in comparison to younger age groups. While old age groups represent 28 percent that indicates that the age between 31- 35 and above 40 are worker age and their life is too busy to go to use traditional banking service, making them prefer use of mobile banking. Table I shows that the maximum preference for the mobile -banking represent middle-aged age group (31-35 years). Moreover, in terms of proportion based on education group, approximately 57 percent of the respondents were bachelor. This means, the respondents who have higher education have knowledge about the advantages of using mobile banking and prefer to use mobile banking; more than the respondents who have secondary school (Representing about 4 percent) and less than secondary school (Representing about 13 percent). Respondents who have diploma represent about 35 percent of the total sample. The results clearly show that educated people have more knowledge about mobile banking. In terms of proportion based on monthly family group, higher proportions of respondents are at an income level of 701-900 and 901-1000 Dinar, representing 27 percent; 20 percent from the 501-700 Dinar, 13 percent from the 300-500 Dinar and the 11 percent from the higher income above 1000 Dinar. This proportion is deemed to be positive, as there is more or less an acceptable mix of different income types in this study. The survey includes the time to be use; sometimes usage was found to be 34 percent that mean people prefer using mobile banking to end their process banking by mobile banking. But around 29 percent often use mobile banking to end their process banking that make thinking about if they have free time they can use manually service followed by 28 percent to At Times, while 9 percent to never usage. In terms of acceptance of mobile

banking, all respondents (100 percent) answered yes This give an indication that all Libyan customers accept a new technology and they are ready to use it, even though some of them have not any idea about mobile banking that can answer the first question in this study (see Table I).

TABLE I  
DEMOGRAPHIC CHARACTERISTICS OF LIBYAN CUSTOMERS RESPONDENTS

Variables	Percentage
<b>Gender</b>	
Female	57
Male	43
<b>Age</b>	
Under 20 Yrs	4
20-25 Yrs	6
26-30 Yrs	19
31-35 Yrs	33
36-40 Yrs	10
41 And Above	28
<b>Education</b>	
Lower Than Secondary School	13
Secondary School Or Equivalent	4
Diploma Or Equivalent	35
Bachelor's Degree	57
Master Degree	1
Doctoral Degree	1
<b>Employment Status</b>	
Student	4
Employed	12
Self-Employment	62
Retired	20
<b>Monthly Family</b>	
Less Than 300 Dinar	2
300 - 500 Dinar	13
501- 700 Dinar	20
701- 900 Dinar	27
901 -1000 Dinar	27
Over1000 Dinar	11
<b>Time To Use</b>	
Sometime	34
At Times	28
Often	29
Never Usage	9
Accept	
No	
Yes	%100

#### A. Hypotheses

**Hypothesis 1:** To evaluate whether Libyan people are ready to accept a new technology.

This is a simple hypothesis to be tested, which can be analyzed through the results obtained by the achievement of objective 1 (as illustrated by Table I). So test hypothesis 1 is answered by descriptive result that shows all respondents answer with yes (100 percent). This will give a slight indication that all Libyan customers have accepted a new technology and they are ready to use it, even though some of them have not any idea about mobile banking and cannot

answer the first question in this study. Hence, the hypothesis is accepted.

**Hypothesis 2:** To examine the relationship between age and intention to use mobile banking.

TABLE II  
ANOVA AGE

	Sum Of Square	Df	Mean Square	F	Sig
Between Groups	20.242	11	1.840	.923	.522
Within Groups	175.468	88	1.994		
Total	195.710	99			

To test hypothesis 2, which suggests that there might be a relationship between the age and intention to use mobile banking, the results presented in Table II were studied. It revealed that there is no significant joint relationship between age with intention to use mobile banking in Libya ( $F=.050$ ,  $P < .05$ ). Independently, it was revealed that age does not significantly relate with intention ( $F=.923$ ;  $P=.522$ ). Thus, this hypothesis can be rejected.

**Hypothesis 3:** There is a relationship between occupation and intention to use mobile phone banking in Libya.

ANOVA one-way was used to assess the relationship between occupation and intention to use mobile phone banking in Libya.

TABLE III  
ANOVA OCCUPATION

	Sum Of Square	Df	Mean Square	F	Sig
Between Groups	15.706	11	1.482	3.131	.001
Within Groups	40.134	88	.456		
Total	55.840	99			

The results presented in Table III revealed that there is no significant joint relationship of occupation with intention to use mobile banking in Libya ( $F=.050$ ,  $P < .05$ ). Independently, it was revealed that occupation did not have significant relationship with intention ( $F = -3.131$ ;  $P=.001$ ). Thus, once again this hypothesis can be rejected.

**Hypothesis 4:** To evaluate whether the customers' knowledge about mobile banking affect on Libyan customers' intention to use mobile banking in Libya.

TABLE IV  
ANOVA KNOWLEDGE

	Sum Of Square	Df	Mean Square	F	Sig
Between Groups	68.454	11	68.454	17.761	.000
Within Groups	377.706	88	3.854		
Total	464.160	99			

a. Predictors: (Constant), knowledge2useMB

b. Dependent Variable: intention

Based on the above result, p-value = 0.000 is less than 0.05, means that it is significant, therefore we reject  $H_0$ . So with that, we can conclude that customer knowledge variable affect patronage intention to use Mobile Banking in Libya. Therefore, knowledge of Libyan customers about mobile

banking has effect on the intention to patronize the use of mobile banking in Libya.

#### VIII. RECOMMENDATIONS AND CONCLUSION

Recently electronic banking and its services have been launched by private commercial banks in Libya. So this study is intended to explore if Libyan people are ready to accept a new method of mobile phone banking, while evaluating the customer intention to use mobile banking for commercial banking in Libya. This short paper attempts to show that profiles of Libyan bank customers who accept mobile banking. Hence financial institutions will be able to construct the profiles of their own customers. Knowledge of the profiles of customers is helpful in many ways. The problem statement is solved. The hypotheses are tested and show that there is no relationship between ages, occupation. Libyan people are ready to accept a new approach of mobile phone banking. On the question of accepting mobile banking service, all the respondents answered with yes. Libyan customer knowledge is necessary for adopting mobile banking to know customer intention to use mobile banking and able to use a new technology. All the objectives are achieved. The researcher would thus conclude that banks should adapt strategies from other countries, which have successfully adopted mobile banking many years ago, and muster all the details about e-banking and mobile banking practically to determine methods that will affect the customers in Libya. And last but not the least; banks have to develop a sound strategy before applying mobile banking in order to compete in the global market place. Generally, the findings of this research provided important insights and direction that banks may use resources to recognize and expand strategies that create value for consumers, as well as establish a strong basis for further research into the value components of mobile banking for diverse situations in Libya.

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