

International Journal of
Business Strategies
(IJBS)

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ABSTRACT

Purpose: The purpose of the study is to analyse the impact of a mobile banking application on client interactions with banks in Yemen.

Methodology: Data were collected using structured questionnaires. The Statistical Package for the Social Sciences (SPSS) was used for statistical analysis. Descriptive statistics and correlation values were used to report the results. This paper covers the barriers and the factors that might affect badly on the performance of the mobile banking services in the Yemen banks industry.

Findings: The findings of this study show that the traditional method of banks is changing; the entire system of banks has been changed from the traditional old way to the advanced way, and The traditional way is a paper-based banking provider while the new way is to use the technology as a method to enhance the performance of the banks such as the usage of mobile banking. In addition, the result of this paper is that there is a link between the user stratification and supportive access factor, and they are related to mobile banking. However, recently mobile banking is being adopted scientifically in recent years as most of the systems are become computerized and mobile phones are being in the market more than computers. Although, the emerging new technology to the banks' services market is exposed to barriers to the adoption of mobile banking services. The results of this current study will provide insights into the factors that affect the successful uptake of mobile banking services among clients of Yemeni banks.

Keywords: *Quality of service, mobile banking, client satisfaction, ease of use, mobile application.*

INTRODUCTION

Recently, the innovations of mobile banking services and other related systems are considered and considered as self-service technology for customers and customers who use and implement such technologies [1]. Accordingly, current research shows that banks have confirmed that the use of new technologies such as new application systems will have benefits for the banks themselves, as well as for increasing customer stratification, as well as reducing bank losses [2-3]. The development of mobile banking intensified when some financial institutions, such as banks, began to provide their transactions using the online method [4]. However, the new method has many advantages for banks, such as it can provide banks with freedom from the restrictions associated with certain geographical areas, as they can conduct their business in new markets, more delivery options, increase the productivity of banks, and finally reduce the cost of transactions [5]. In other words, there are other advantages of the user himself, such as reducing the waiting time for a more convenient service [6-7].

Most researchers are currently focused on how to find a way to make customers happier when making online transactions and deal with them in a loyal relationship. Based on [8], a study was conducted on how the user accepts and stratifies the mobile banking service in accordance with the quality of the services offered. Many studies show that the introduction of mobile banking is gradually increasing, and also, on the other hand, with an increase in the number of new products offered [9]. Thus, this type of adoption depends on how mobile phones are used and the number of them is distributed among customers. In addition, this will be sufficient to ensure the availability of services throughout the country, the reliability of the security of mobile money transfers [10]. In business, there is a huge increase in the use of mobile applications, as most enterprises carry out a huge number of online transactions using mobile banking applications [11]. However, the main problem is the cost of installing a mobile app service for a bank or company. Previous studies have looked at these gaps that have been identified, as there are several factors that can affect customer satisfaction when they use mobile banking that is not yet fully understood [6].

In addition, the first major gap is that there are various features that any mobile banking application would have. In other words, as long as there are a greater number of features that the mobile application has, the more online transactions that the user or the client will be performing as they will be more satisfied with the product. The second gap is namely reliability which is not covered by previous researchers. Despite the fact that there are more mobile banking products are released and available from different providers, but the reliability is often questionable [7]. Besides that, some of the mobile applications are examined with outages of some sort, which can have a bad impact on the clients. The third gap is that the communication issues that might occur between the application and the bank servers in which can delay the user process of the transaction. As it was mentioned, most of the previous researches are been carried out on this topic concentrate only on how the online banking application is gotten used and adopted by the clients [12], presents that there are a few starts of some banks that are offering such a service on the mobile banking with the concern of the security of the online mobile banking.

This study may be important in determining how customers adapt to the mobile banking app in Yemen, and some of this research is being conducted to examine the impact of customer

satisfaction. The fourth gap can be considered as the design of a mobile banking application. In addition, mobile design plays an important role in customer satisfaction. However, the mobile app should be easy to use and user-friendly. It is very important to know that all these applications will be designed and developed only for mobile phones and small screens, as it is well known that not all mobile devices support this type of technology, as only smart devices can be used for this.

This study focuses on gaps in the implementation of mobile banking applications in Yemen, as the design of mobile banking applications plays an important role in customer satisfaction. Thus, the developed application should be easy to use, convenient to use, in order to attract the customer's attention. Some mobile banking applications are considered difficult to use, although the customer can use them, but the experience does not satisfy the customer. Therefore, it is extremely important to investigate these factors, as they directly affect the ease of use of mobile banking products, the quality of electronic services, technological prowess and consumer attitudes, which in turn affect customer satisfaction when using mobile banking services and applications. The purpose of this article is to consider and understand the factors and features that are associated with the introduction and use of a mobile banking application by the Yemeni people, and how this affects their stratification. This study may be important in determining how customers adapt to the mobile banking app in Yemen, and some of this research is being conducted to examine the impact of customer satisfaction. The fourth gap can be considered as the design of a mobile banking application. In addition, mobile design plays an important role in customer satisfaction. However, the mobile app should be easy to use and user-friendly. It is very important to know that all these applications will be designed and developed only for mobile phones and small screens, as it is well known that not all mobile devices support this type of technology, as only smart devices can be used for this.

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LITERATURE REVIEW

Thanks to the rapid development of information and communication technologies in the financial industry sector, especially in the banking sector, banks have changed the way they provide services to their customers. Customers perform their banking operations, such as checking their balances, making deposits, claiming loans, and transacting via hand-held devices through the dynamic channel of the m-banking banking model. Although the mobile banking industry has many inherent advantages, its adoption by customers has been slow and small, making this an important topic to be explored by many studies and discussed in various

ways around the world. Several international and domestic researchers in recent years have used various theories and methods to successfully work on issues related to trust, and have developed several models for assessing trust, social norms, and other significant trust structures. In previous studies of the demographic characteristics of the market, the spread of mobile services is associated with banking [13]. However, a study of financial institutions in Nairobi was conducted to assess the impact of mobile banking and internet banking on results in Kenya. The analysis was also aimed at assessing the extent of the use of mobile and Internet banking in financial institutions. The report examined 30 financial institutions.

The study shows that online banking became the most common online service, while the online payment was the least common. The most commonly used mobile banking system is cash withdrawal, while the least commonly used is the purchase of goods. In addition, they found that mobile banking is experiencing many difficulties, namely system delays on the part of mobile money transfer service providers, slow transaction processing, especially on weekends, high transaction costs, daily money limit, and fraud. These difficulties can also be eliminated by daily maintenance of mobile cash transactions, which will help to control the capabilities of the systems and, in fact, solve the problems of transaction delays [14]. Although, by studying the influence of the factors of the SERVQUAL model and improving the reliability and security of Internet banking (IB), it is possible to predict consumer satisfaction. The results showed the role of security issues in determining the credibility of the IB, reliability, and responsiveness. In addition, confidence was also a key factor predicting satisfaction with IB services. Customers also depended on reactivity, which means the right service, the right support, and customer satisfaction.

Finally, the security of financial transactions is critical, and so banks must protect their systems from hackers and additional vulnerabilities. This study highlighted the intermediary role of trust in collecting and representing clients' interests. In the context of mobile apps, attitudes towards mobile commerce are also less studied, despite the growing interest in previous research. In solving this problem, their research provides an empirical image by adapting a technology adoption model that considers consumer relations as prerequisites for mobile commerce and mobile commerce adoption [15]. In addition, they contribute to the literature in two important ways; their paper explores the need for further research on individual variables as drivers of mobile business adoption in emerging markets such as Malaysia, and the lack of research on consumer behaviour based on the technology adoption model (TAM) [16]. Achieve high rates of mobile banking implementation, which contributes to economic growth. However, a low-cost mobile banking platform will significantly save the banking sector. Both banks and non-banking organizations have started providing mobile banking services today. This, in turn, could lead to a greener society in the form of financial services without branches.

However, there is a risk of fraud and privacy concerns, which are related to regulatory considerations, as well as the huge requirements for investment in banking infrastructure. In digital/mobile banking, trust is a major concern. Therefore, a study was conducted in Karnataka with a random sample of 300 people and a response rate of 40 per cent. Descriptive studies have been conducted to understand the importance of various factors that influence or hinder the mobile banking market. Similar studies are considered in this context to find out the

key variables of mobile banking adoption. When studying technology-based banking, with perceived applications and easy-to-use variables, the TMA model is the most popular. As part of the analysis, the TAM model was further expanded to provide a better understanding of the various impacts of mobile banking use, including estimated costs, estimated risks, protection, and trust. The analysis also measured its reliability. The risk analysis showed that the use of mobile banking has a negative impact. All other factors influence the adoption of m-banking. This means implementing a cost-effective and more secure platform for mobile banking users. The region does not significantly influence m-banking adoption on various factors [17], using empirical data from 434 users with previous m-banking interactions, was tested using structural equation modelling (SEM) against the proposed study model. The results show that the key indicators of constant goal and satisfaction, in turn, are satisfaction, perceived utility, perceived suitability of the technology for completing tasks, and perceived risk by confirmation, perceived utility, and perceived risk. Validation, perceived ease of use, and task compliance affect perceived utility.

Therefore, the direct impact of perceived usability is irrelevant. The results also suggest that the impact of perceived risk on the continuation of intent is largely constrained by gender. The implications of the research findings and future research directions are explored [13]. In this study focused on some factors that may affect the adoption of mobile banking in Libya [18]. To help understand the current challenges for Libyan banking customers, the adoption of mobile banking in different countries around the world, the value of using this technology for two groups, the banking industry and the customer base in Libya, were analysed in detail. There were 319 current bank customers in Tripoli, and they were randomly selected according to your ability to participate in the study sample. In order to find answers from different walks of life, a survey was created. The results showed that variables that improve conditions, perceived self-efficacy, perceived ease of use, meaning of use, and significant impact on the adoption and use of mobile banking technology by consumers in Libya [19-20], describes a method for describing various mobile banking models and analysing regulatory factors in South Asian countries and the countries where they operate, in order to quickly and effectively increase the pace of implementation. Banks and mobile operators offered to develop a plan and welcome new participants on the ground. The biggest challenge, however, was security and trust, forcing banks and telecommunications to converge. It was suggested to propose a model based on a modern approach, so that participation in economic development, as well as innovative strategy, is encouraged and rewarded.

RESEARCH QUESTIONS

1. What are the barriers that are related to the adaptation of mobile banking applications?
2. What characteristics that mobile banking application should implement?
3. What security issues that might affect the adoption of mobile banking application for Yemeni people?

RESEARCH METHODOLOGY

As it was mentioned in the abstract of this study, the main aim of this study is to come up with the extent that the customers of the Yemeni Banks can interact with mobile banking applications or systems. However, as it is known that those mobile applications are used to manage the bank accounts of the users. Moreover, this study provides an approach called descriptive-analytical and in order to fulfil it, the following resource has been used for the data gathering as in Table 1.

Table # 1. Shows data source types in the research

Data source	Explanation
Primary data sources	<p>In this method, the data is gathered using one type of data gathering called as questionnaires that can be distributed to multiple persons in order to get their feedback. However, the questionnaires in this study is classified into two groups as the following:</p> <ul style="list-style-type: none"> - Personal data of the respondent - Questions that are related to the field of using mobile application in the online banking such as (quality of service, security, interaction with the mobile application, reliability etc.) <p>However, all the data gathered was analysed using a software called as (SPSS).</p>
Secondary data source	<p>Here is the first method for the data collection in which the data can be collected from books, Arab sources, publications and instructions that was issued by different researchers and university academicians in the form of electronic version.</p>

Population and Sample of the Study

The research was conducted with the use of the public people in which consists of 15 banks in Yemen. The people involved in this study were the clients of the banks. However, 150 customers from different banks were given questionnaires to get their feedback. In addition, the questionnaires were distributed into two different copies as printed copy and online copy. The link was given to specific clients for them to get their answers and analysed them. According to the feedback (42.4%) for the age group (24-45 years), while (6.1%) for the age group (over 55 years). Males were about (59.4%), while females were (40.6%). For the educational level (40.6%) went for the level of the bachelor's degree, while (2.4%) for the level of the Ph.D. degree. Nature of work got the percentage of (41.8%) for free workers, while (7.9%) for work in governmental organizations.

RESULTS

In this section of the research, findings are illustrated based on the questionnaires and in terms of some related perspectives such as the quality of services, reliability, Credibility and security and how easy to use the mobile application. A simple linear regression test was carried out to examine the mentioned topics regarding the mobile applications as the following:

Table 2. Shows how clients are reliable with mobile banking application

Independent variable	Mean	Value (β)	Value (t)	R	R2	Value (F)	Sig
Reliability	2.09	0.94	35.28	0.94	0.88	1244.8	0.0

Table 2 illustrates the relationship between the reliability and the client interaction with the value of 0.94. In addition, in term of the value R square, the term reliability takes the value of 88%. The value F takes 1244.8 and the significance are to 0.000 and this means the significance of the values of a (0.05) as well as the value of t is 35.28 and significance was (0.00) and that means that significance of the coefficient can be at the level of significance ($\alpha \leq 0.05$). Therefore, based on the numbers above, it proves that there is an interaction between the mobile banking application and the users or the clients that are using them.

Table 3. Shows stratification of clients of the banks in terms of credibility and security

Independent variable	Mean	Value (β)	Value (t)	R	R2	Value (F)	Sig
Credibility and security	2.31	0.05	0.67	0.05	0.001	0.67	0.52

The above Table 3 presents that there is in somehow a weak relationship between credibility and security and the interaction of clients of the banks who are using the mobile application.

Table 4. Show analysis of the impact of the quality of service on client's interaction who are using mobile banking application

Independent variable	Mean	Value (β)	Value (t)	R	R ²	Value (F)	Sig
Quality of service	2.1606	0.771	15.478	0.771	0.595	239.57	0.00

Quality service and the interaction of the client's relationship is presented in Table 4. As it is clear, the value of the relationship was 0.771, the value of R square, the value of (F) is (239.57), significance level is (0.00) in which means that the level of the significance is ($\alpha \leq 0.05$), the value of (t) is equal to (15,478), significance level (0.000) which means the significance of the coefficient at the level of significance ($\alpha \leq 0.05$). Thus, based on all the numbers above and statistically, there is an effect of the quality services on the client's interaction with the applications of the banks.

Table 5. Show analysis of the impact of ease of use of clients with mobile banking applications

Independent variable	Mean	Value (β)	Value (t)	R	R ²	Value (F)	Sig
Ease of use	2.4582	0.314	4.216	0.314	0.098	17.773	0.00

The last term in doing this study is the ease of use of the mobile application, Table 5 illustrates the relationship between the clients and how they can interact with the screen of the application itself. However, the value of this relationship is 0.314 and the value of R 9.8%. As the value of F is 17.773 and significance 0.00, in which it means that the significance of the regression at the level of α (0.05)). The value of t is 2.4582 and the significance level is (0.000) which means it is significant at the level ($\alpha \leq 0.05$). This shows that there is an impact of the how the application of the bank is easy to use and it shows there is a relationship between them.

DISCUSSION

For this study, data were collected using a single type of data collection called questionnaires, which were distributed to multiple people to get their feedback. However, the questionnaire in this study was divided into two groups: the personal data of the respondent and questions related to the field of use of mobile applications in online banking, such as (quality of service, security, interaction with the mobile application, reliability, etc.). However, all the collected

data were analysed using software called (SPSS). In addition, the first method of data collection, in which data was collected from books, Arabic sources, publications, and instructions that were issued by various researchers and university academics in the form of electronic versions.

This research proves that there is an interaction between the mobile banking app and the users or customers who use them. There is some weak link between trust and security and the interaction of bank customers who use the mobile app. Thus, based on all the above figures and statistically, there is an impact of the quality of services on the customer's interaction with the banks' applications. So the study shows that there is an impact on how easy the bank's app is to use, and it shows that there is a relationship between them.

CONCLUSION

The article examined the impact of a mobile banking app on bank customers in Yemen. In addition, the study looked at how mobile apps are used to gain customer satisfaction. The study began with an introduction to consider its objectives. The literature review is conducted based on scientific papers related to this topic. The research methods used for data collection are divided into two groups: the primary data source and the secondary data source. In the primary data source, questionnaires were distributed in the form of online surveys and printed versions to various bank clients, while in the secondary data source, research resources were taken from books, journals, and some articles by university academics. The study shows the impact of four terms related to a mobile app, namely ease of use, quality of service, reliability, trust, and security. This article concludes that the use of mobile banking applications, which are easy to use and user-friendly, is quite capable of increasing customer satisfaction. However, to achieve this goal, mobile banking applications must be well designed and easy to use to be able to attract the majority of bank customers. In addition, the developed banking application also had to be suitable in such a way that it was easy for customers to make their transactions for free. The document also confirms that mobile applications must be recognized by them to use in the transaction process. In addition, the application interface, as already mentioned, plays an important role in attracting the attention of the client, so it must be designed accordingly. As follows from the above study, banking application systems should function perfectly. It is clear from the study that the majority of Yemenis prefer the simple use of technology and applications to perform their functions, and this leads to an increase in their expectations and satisfaction. The study also confirms that mobile banking applications allow customers to process and manage their financial records well, as the level of service provided by the bank has a significant impact on customer satisfaction. However, mobile apps that implement a high level of security ensure the privacy and security of all transactions that are performed in the app. In addition, the study confirms that there is a relationship between the mobile banking app and the level of customer satisfaction in the Yemeni banking sector. The study proves that the majority of Yemeni customers considered they not very perfect in the way they use the smartphone app when making their online transactions, so here the bank's role is to inform them about how they can use the new technology. In this regard, most customers experience fear when using a mobile banking application, and based on this, banks should treat the feedback received from customers professionally. Finally, the implementation

of the mobile banking application by customers can be carried out as long as the bank provides information on how to use it.

RECOMMENDATIONS

Mobile banking services are still relatively new and somewhat immature in Yemen. Therefore, further research is needed to identify other factors that may contribute to the introduction of mobile banking in Yemen. This study only looked at the impact of mobile banking apps on customer interactions with Yemeni banks. In addition, the addition of disincentives, such as education, age, and experience, can also complement the results of future research.

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