IMPROVING SERVICE QUALITY OF SMART BANKING USING QUALITY MANAGEMENT METHODS UAE

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ABSTRACT

The banking service has evolved with advancements in the field of technology. Many Banks work very hard to provide all services that customers need through different applications. All these services are always under improvement to ensure a more flexible, collaborative, and engaging experience. Banks need to ensure continuous improvement in their service, which can help them to attract more customers. Mobile banking is an advancement in banking to provide access from around the globe. This study is based on finding the impact of dimensions of service quality that affect mobile banking. The data for the study was collected from mobile banking users in the UAE. A total of 325 surveys were distributed using random selection. Two hundred eighty-five responses were received from the respondents. The questionnaires had dimensions as are assurance/security, reliability, responsiveness, tangible, and empathy. The result was analyzed using descriptive analysis. The study concludes that mobile service quality has a substantial positive impact on customer satisfaction. Managerial and decision-makers need to employ a professional expert who can continuously improve on mobile bank service and provide customer requirements to reach customer satisfaction.

KEYWORDS: Service Quality, Mobile Banking service, Service Quality Dimensions & UAE Banks

INTRODUCTION

Continuous development of internet banking has transformed the customs in which banks execute their dealings, and customers perform their routine banking transactions. Internet banking allows consumers to perform a wide variety of banking transactions using smart gadgets through online bank applications and websites. Though, customers have shown a hesitancy to perform online transactions using online platforms because of security reasons and sensed risk, which is speculated as a severe hindrance to customer approval of smart internet banking. Regardless of the countless rise of internet users, and the benefits of internet banking for consumers, the number of smart banking users are not grown as anticipated (Yoon and Oceena, 2014; Nayanjith et al. 2020). The relationships between consumers and banks have been significantly enhanced by using ATMs, phone banking, and lately, by adopting mobile banking. Access of the internet and smartphones has become a useful medium to perform banking activities including, checking account balance, transferring money between accounts, and performing payment transactions. When equated to traditional internet banking through Pc's, adopting smartphone with internet access to perform banking transactions are considered more comfortable and secure with advanced features provided by mobile companies banking applications (Landman, 2010; Bucko, 2017). Even though many consumers have observed the risk while using smart banking services still, they are adopting it because of easy usage and accessibility (Yoon and Oceena, 2014; Khazna and Tariq, 2020; Kim and Jeon, 2017). Smart banking has gained significance among banks and consumers in recent years. Banks are adopting the latest technologies to deal in this competitive
and technological era by reducing costs, improving performance, expanding the market, and exploring more products (Hammoud et al. 2018). Smart banking service allows customers to perform their transaction accurately and timely (Yu, 2015; Mahmood, 2019).

One of the essential factors is trust in gaining success in the banking sector. A high level of trust attracts new consumers from the market as well as plays a vital role in the retention of old consumers. Trust is generally associated with security and privacy. By adopting mobile banking services, consumers can perform their banking transactions efficiently through smartphones. However, sometimes a low level of trust becomes an obstacle in the adoption of this service. It becomes challenging for banks to discover how to attain the interest of more consumers, so they choose to accept the usage of banking services through smartphones and banking applications (Changchit et al., 2019; Ameen et al. 2019).

The banking sector has many competitors who work hard to be the best in the market. With new mobile technology, most of the banking sectors rewrite their roles and polices to provide banking services through an online application.

Service quality becomes an essential procedure for the company, which will impact their ability to remain competitive and profitable in the future. Today people use mobile platforms for easy access to banking services. Many banks are working hard to apply quality control to online banking services. By providing online smart banking services, banks can gain success by gaining consumer satisfaction and loyalty (Fjermestad and Romano, 2008; Omar and Tariq, 2020).

This paper attempts to understand the dimensions of quality that have an impact on mobile service quality in the banking sector. Five dimensions were studied in the research, including tangible, service reliability, responsiveness, assurance, and empathy. Many people in the UAE use mobile banking services that enable them to perform many banking services such as transferring money between banks, retrieving an account balance, making a payment, and many other useful services.

LITERATURE REVIEW

Hyun and Luis (2014) conducted a study that was aimed to identify two dimensions that may strongly affect internet banking using the mobile phone. These dimensions are security and usability. The study investigates whether these dimensions, security, and usability, interact with each other, and affect internet banking with a smartphone. Most of the prior research indicates that several factors are essential determinants that affect internet banking while using a smartphone (Ameen et al. 2019; Alfalasi et al. 2020).

Smart Banking:

Smart banking service permits consumers to perform various banking activities using a smartphone as the latest facility in e-banking. The smart banking service allows banks to present new products and services which grant them to enhance their business in the market and to survive in this competitive era (Driga and Isac, 2014). The development of smart banking and its boosted usage by customers globally, this service is the leading cause of cybercrimes even though banks have established safety systems to safeguard online transactions, so they are safeguarded from online security fears (Mani and Chouk, 2018). Moreover, smart banking services include numerous specific operative risks: Firstly, it is related to security and privacy concerns which include, data privacy and verification of customers and banks. Another concern is that the nonstop accessibility of the internet for banking transactions leads to significant threats, like hackers and computer viruses (Sokolov, 2007).
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Improvements in the Smart Banking Service

Security

Cybercrime is a financial crime that is executed by using a computer and the internet. Most common crimes committed using the internet and online are spreading the virus, unlawfully transferring files, pharming and phishing, thieving private data like details of bank accounts (Driga & Issac, 2014). The need for smart banking services is increasing at a massive degree, eventually with the fear of scams (Reavley, 2005; Vejacka and Stofa, 2017). Pharming and phishing are recent web banking cybercrimes. These are the most committed crimes in the 21st century, which represent various ways hackers use to control users through the internet. Phishing is an electronic crime in which is based on targeting people by contacting them by e-mail, phone, or text message by someone posing as a legitimate institution to entice people to provide confidential data, such as personal identification information, credit card data, personal banks, and passwords. Phishing attacks are increasing in the banking system continuously. Pharming is like phishing but is more modified. It is a web scam method that redirects a user to a malicious website by amending DNS entries; this makes users to be directed to a forged version of the web site, which is the same as original (Srivastava & Purcell, 2007; Lim et al. 2019).

Presently, there is no specific method for the safety of smart banking services. This element is revealed by a variety of solutions to smartphone applications. Tablets and other smart devices which are supporting Smart Banking service and banking applications always appear to be online. Smartphones automatically connect the applications while the devices are connected with the internet. Security is the primary concern for customers and even for banks as their reputation appears to be on a high level of risk. It sets the base for attaining the trust of the customers and users of smart banking services. The exchange of information between customers and banks must be appropriately secured against intervention by the third party. So, it is compulsory to deliver encryption of the connection. The monitoring of the application and information access is also essential. Before disclosure of sensitive information to the client, a proper verification should be done with combinations of different authentication factors. The information must be secured adequately against illegal alteration or unintentional erasure. While designing the application, it is imperative to make such amendments in the device, so even if the device is stolen, the account details and other information must be secure, and only the user can retrieve that information. It can be done by setting a biometric verification system and traditional PIN verification. The critical aspect of the application for smart banking is authentication, which involves the verification of the person who is logging into the application. Verification can depend on PIN selected by the specific user or his/her biometric fingerprints (Bucko, 2017).

Customer Satisfaction

In order to maintain long-lasting relationships, banks must adopt the idea of customer satisfaction. In this competitive web banking era, the banks need to gain customer’s loyalty by providing competent services and products. Consumers were not sure of revealing private data online because they thought their information specially provided during online financial transactions might be misused by unknown sources over the internet. Consumers have worries about the trustworthiness of online banking privacy policies (Gerrard and Cunningham, 2003; Tariq, 2013).

Trust has a significant impact on a customer’s willingness to participate in online transactions and confidential private information. Privacy and security are vital factors that can affect the intention of customers to adopt electronic transaction systems. All banks provide encryption technology in order to protect the information of their clients enhanced by a grouping of various inimitable identifiers, for example, entering a password, mother’s name, an unforgettable date, or after a few moments of idleness customer's account automatically gets logged off. So, a combination of credit/ debit card and
using fingerprints for biometric verification provides more safe and secure access for smartphones than traditional password method. So, it is proved that security and privacy have an optimistic effect on the customer's acceptance of smart banking (Poon, 2008).

**Service Quality**

Service quality is the primary concern while providing smart banking services. By providing an excellent quality of services to fulfill customer's needs at cheaper costs helps the banks to sustain in this competitive era. According to some previous studies, internet banking has lessened operational costs (Siriluck and Speece, 2003). Low costs have facilitated banks providing online and smart banking services to provide no fees on services (Gerlach, 2000). Fee and service charges have an undesirable effect on the acceptance of smart banking services. With the growing acceptance of tablets and smart mobile phones, Smart banking appears to be an opportune mode to perform essential financial transactions. The advanced acceptance of smartphones and the internet presently plays a part in the development of various modes of online banking services, for example, Internet Banking in which better safety is attained by sending automated verification code through SMS. Primarily the number of customers emerged slowly because of security concerns and lack of trust (Vejačka, 2014). However, customers have started to use this service since 2005.

The use of smartphones has increased vastly. Ultimately, internet access and smart devices will play an essential role in the everyday lifestyle of people (Poon, 2007). Several new smart devices, particularly Android-devices, transformed the market because security and privacy became the main concern for the acceptance of smart banking services (Klienberg, 2007). Because of the improved processing control and memory of smart devices, improved capabilities of information transmission, the smartphones became a stimulating target for the hackers. Many scholars and experts are anticipating a significant security incident with smart devices because of this increased use. Smartphones converted into a stimulating target for hackers. Users are unable to adapt to the security mechanisms properly (Whitten & Tygar, 1999). The banking sector is getting reformed because of competition in the market, emerging consumer’s needs, globalization, and innovations. Because of the development of knowledgeable economy, and smart devices, banking services have experienced absolute modifications in recent years (Driga & Isac, 2014).

Bharti (2017) conducted exploratory research to determine which dimension has an impact on customer satisfaction while using mobile banking. The questionnaire was distributed to collect primary data; this questionnaire included 55 questions. The survey was distributed between 100 respondents who use mobile banking in India. The study focused on different dimensions such as Effective Distinctiveness, Professed security, Supportive Access, Immense Efficacy, Innovative Virtual Environment, Enhanced Personalization, and Improved Timely Updates. Results found that the most significant dimensions that affect m-banking are compatibility, perceived usefulness, and risk. Minjon & Sergio (2016) conducted a study that was aimed to find the key dimensions that influence quality in mobile banking service. The researcher includes 17 total dimensions to indicate service quality. These dimensions are content, accuracy, ease of use, speed, aesthetics, security, several mobile application service features, and mobile convenience. Measuring these dimensions is essential to find which one of them has a significant influence on customer satisfaction. The most important dimension that directly affects mobile banking service quality is the accuracy of information. Several mobile application service features, ease of use, and continuous improvement are linked to the accuracy of information. Manon, Isabella & Lova (2017) investigated many dimensions that impact mobile banking service quality. These dimensions are security/privacy, practicality, design/aesthetics, enjoyment, and sociality. Also, to find the relationship between these dimensions on customer satisfaction,
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trust, and commitment.

Regarding the finding, the managerial look closely to develop service quality in mobile banking. Fozia (2018) conducted research; the purpose of the research was to find the influence and relationship between dimensions of service quality and customer satisfaction in the Public and Private bank sectors. The assurance dimension can include security or privacy. Assurance is assuring that the customer knows about all services that banks provide for them. Also, to increase customer confidence and trust in their services (Kumar et al., 2010; Arasli et al., 2005). Protecting the information on the internet, it is vital for the customer. These challenges can restrict customers from using e-banking services (Mukherjee and Nath, 2007; Hu et al., 2012). It is one of the most important factors limiting e-banking. It is believed that when the quality of the assurance and security increase in the services, this can lead to increase customer satisfaction and encourage them to use e-banking services. Reliability is about providing accurate and more technique systems that can provide excellent website quality services (Zeithaml et al., 2002; Parasuraman et al., 2005). The reliability concept was discussed and investigated by Yang and Jun (2002), Madu and Madu (2002), Zeithaml et al. (2001), Wolfinbarger and Gilly (2002). Reliability is about finding sola union and problem while doing transactions from e-banking services. If the service can do the transaction accuracy, then the customer will notice the quality of services. Responsiveness is about how fast the e-banking services respond to customer complaints professionally (Zeithaml et al. 2002; Hu et al. 2012). It can also mean how fast they respond to the customer as fast of transaction.

On the other hand, responsiveness is to understand customer request and complain, and can deal with the customer in language that they can understand (Sohn and Tadisina, 2008; Johnston, 1995). To make services easy for online customer inquiries were provided via e-mail, phone calls. Also, a qualified employee can impact the understanding of customer satisfaction and quality of services.

Tangible can reflect on all materials, facilities, equipment, manual, staff attitude, and system of the bank. It is about physical images of the system or services that customers will assess the quality through it. It can include a representative of the card's debit and credit. The tangible in e-banking can include the speed of transaction and efficiency and working hours. (Parasuman et al. 1985; Baabdullah et al. 2019). Consider tangible concept and important one that reflects the uniformity between cultures (Sharmen, 2016). The empathy concept is focused on leading the customer to feel that he has the priority to be served by the organization.

On the other hand, it means to pay customer attention and take care of him while providing services. So, the core of empathy to make sure that the customer feels that he is unique and special. The dimensions used were security and privacy, accuracy, accessibility, and ease of use.

Framework and Hypothesis: The study takes customer satisfaction as an indicator of the quality of the service. The hypothesis is as follows:

H1: There is a substantial positive impact on assurance, security, and customer satisfaction.
H2: There is a substantial positive impact between reliability and customer satisfaction.
H3: There is a substantial positive impact between responsiveness and customer satisfaction.
H4: There is a substantial positive impact between Tangible and customer satisfaction.
H5: There is a substantial positive impact between empathy and customer satisfaction.
The theoretical framework based on hypothesis is shown in figure 1:

![Theoretical Framework Diagram]

**Figure 1: Theoretical Framework**

**Research Methodology:** The quantitative study is designed to measure the variable that affects mobile banking. The data was collected by distributing a survey to the respondents. The survey includes five main dimensions that help to measure mobile banking service quality. SEVQUAL was used to build the questionnaire with 5 Likert scales. The questionnaire was divided into two-part. The first part is demographic information about respondents and the second part about the quality of service. The number of respondents for this study is only 285 out of 325 respondents, who answered all the questions, so it is valid to analyze. Sample random techniques were used to select respondents. The data collected from the study were analyzed used descriptive analysis using Microsoft Excel.

**RESULTS AND DISCUSSIONS**

Based on the survey, the majority of the respondents are female (54%), while the male is 45%. Based on 36% were between 25-35 years old, followed 27% who were between 35-45 years old. Only 18% of the respondents are between 18-24. Finally, the minority of the respondents were less than 18 years old and above 45 that represents only 9%. Based on the education level, the majority of the respondents, 81% are graduated/postgraduate level, while only 9% of respondents are graduated with a diploma or a degree. Results based on frequency using the mobile banking service, the survey shows that 54% of respondents were always using mobile banking services, followed by 27% who were often using mobile banking services. 9% who answered that they rarely and occasionally using mobile service quality. The hypothesis tested for the study are as follows:

H1: There is a substantial positive impact between assurance and security and customer satisfaction

Based on assurance and security that provides trust and confidence using mobile banking applications. The result shows that the majority of the respondents or 64% of them strongly agree that they feel safe while using the mobile banking service, while 18% of them agree that they feel safe using mobile banking services and the same number they are neutral about using mobile banking service. None of the respondents feel unsafe while using mobile banking services. 55% of the respondents
agree that they trust these services. On the other hand, 27% of respondents are neutral about the trust of the service and finally, 18% of respondents strongly agree that they trust mobile bank service. Also, results show that 45% of respondents strongly agree that the bank will not misuse their personal information. 27% of respondents agree about not misuse information from the bank, while 27% are neutral about the banks if they will misuse their information of not. None of the respondents disagree or strongly disagree about the misuse of their personal information in the bank. Finally, for security, 50% of respondents were neutral about providing sensitive information while they are doing mobile banking services. Only 40% of respondents strongly agree that they are secure when they provide sensitive personal information while doing mobile banking services. Only 10% of the respondents feel insecure when they are providing sensitive information using mobile banking services. In overall, the average of assurance/security is 4.06 which were respondents agree that the quality of the service reach they are satisfied which approve the hypothesis 1 as shown in figure 2.

![Assurance / Security](image)

**Figure 2: Assurance/Security**

**H2: There is a Substantial Positive Impact Between Reliability and Customer Satisfaction**

Based on results, as shown in figure 3, the reliability dimensions, which is the ability to provide promised service accurately. The figure shows 64% of respondents were strongly agree that the mobile banking transaction is processed accurately, and only 18% of them they agree and the same 18% of them are neutral about accuracy while they are doing banking transaction from mobile banking. The respondents were asked if the mobile banking service provides accurate records of the transaction that they do, 55% of them were agree the records that they received is accurate, while 27% were neutral about the accuracy of the records. Meanwhile, 18% strongly agreed that the transaction record provided by the bank is accurate. Based on the meeting the expectations 45% of respondents strongly agree that mobile banking service meets their expectations, 27% of them agreed that mobile bank service meet their expectation and the same result 27% of respondents they were neutral about meeting their expectation. Based on confirmation details for mobile bank service, 50% of respondents were neutral about details, while 40% of respondents strongly agreed that confirmation details for mobile banking transactions sent immediately. Only, 10% of them strongly disagreed about receiving details immediately. The total average for reliability is 4.2, which proves that service quality in reliability is high, according to hypothesis 2.
H3: There is a substantial positive impact on responsiveness and customer satisfaction

Responsiveness is about willingness to help the customer and provide prompt service. Figure 4 shows the results of responsiveness dimensions. As shown in figure 4, 64% of respondents strongly agreed that the bank resolves any problem related to the mobile banks quickly, while only 18% of them agreed and neutral about quack resolve any problem related to the mobile bank's service. In figure 4, the majority of the respondents, 46% strongly agreed that the bank would correct any mistake quickly. 27% of respondents were neutral and agree that the mobile bank service will correct any mistake quickly. In figure 4, 46% of respondents strongly agreed that the bank would provide prompt responses if the transaction is not processed, while 27% of them agree about that, and 27% were neutral. So, from the results shown in the figures, the average of responsiveness is 4.1, which proves the hypothesis 3.

H4: There is a Substantial Positive Impact Between Tangible and Customer Satisfaction

Figure 5 shows the result related to tangible dimensions, which is focused on the appearance of the mobile bank application, communication materials, and the equipment. Based on the result, 45% of respondents see that the design of bank application is attractive, while 36% agree on that, and it is only 18% who were neutral about the application design. According to the
respondents, 82% of respondents agree that the mobile bank application was visually appealing, and 18% strongly agreed. Moreover, about providing valuable information, 73% agree about that, and 27% strongly agree about it. Also, 36% of respondents and the same percentage between strongly agree and agree that the application is easy to use, but only 27% find neutral about ease using the application. Overall, the average of the quality of tangible is 4.1, which proves that tangible impact positively in customer satisfaction.

![Tangible Results](image)

**Figure 5: Tangible Results**

**H5: There is a Substantial Positive Impact Between Empathy and Customer Satisfaction**

Figure 6 shows the result of empathy dimensions, which focused on individuals' attention and care. Based on empathy dimensions, 44% of respondents strongly agreed, and 44% agreed that the bank provides a call center and a helpdesk that helps the customer if they face any problem, and only 11% were neutral about it. While 55% of respondents strongly agreed that the call center and helpdesk were operating hours convenient to all its customers, and the rest of the respondents, which were 44%, agreed about it. About a specific understanding of customer needs, 36% of respondents strongly agree about it, and it is only 27% who disagreed that helpdesk and call center can understand their specific needs. Furthermore, 18% agree, while 18% were answering neutral. In total, the average empathy quality is 4.18, which approves the hypothesis. The overall result, the average of the service quality in mobile banking is 4.19, which means the majority of the respondents agreed that mobile banking provided high-quality service.
The result tested the hypothesis of mobile service quality and its impact on customer satisfaction using mobile banking. The study of Hyun, Luis (2014) and the study result proves the hypothesis 1. Secure the information provided with the customer and not misuse information has a strong effect on customer satisfaction. Based on figure 2, the majority of respondents or more than 70% between strongly agree and agree for each question related to assurance/security variables. According to Fozia (2018) and study findings, the $H_2$ was proved. All information and details in any transaction and process done in the mobile banks were accurate is strongly impact on customer satisfaction. More than 60% of respondents strongly agree and agree that reliability service provided with high quality. Study results and finding from Minjon, Sergio (2016), proves $H_3$.

Quick response to any problems that may face customers during the process any requirement has a significant impact on customer satisfaction, on the other hand, more than 65% of respondents strongly agree and agree that responsiveness services are in the high level of quality. Related to finding with Minjon, Sergio (2016), and study results, $H_4$ was proved. More attractive application and valuable information provided with mobile bank service positivity impact on customer satisfaction. The majority of respondents or 65% strongly agree and agree that tangible has strongly and positively relationship to customer satisfaction. Study results and finding from Minjon, Sergio (2016) proves $H_5$. Providing customer service to help the customer in any problems related to their process or another service while using mobile bank services. 75% of respondent strongly agree and agree the empathy strongly impact in customer satisfaction.

CONCLUSIONS

The service quality dimension is essential for many bank sectors to promote their service. It essential to building confidence between customers and any service that applied for them. Assurance/security, reliability, responsiveness, tangible, and empathy, all these dimensions have a strong and positive impact on service quality and customer satisfaction of using mobile banking.

There is a new revolution in mobile service, which needs cooperation between banks and mobile service providers. Mobile manufacturing requires to increase their effort, which will lead to the use of mobile bank services between all customers. As mobile bank services cost less than the usual service, the different service providers should work together for improvement to earn customer satisfaction.
• Mobile manufacturing, network providers, and operating system should cooperate to enhance the quality of service in mobile banking.
• Provide services as customer needs through a mobile bank.
• Connect between mobile banking and bank branch and make all processes through mobile banking.

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