

An integrated model of mobile banking service quality and customers' satisfaction: Evidence from Jordanian mobile banking users

Khalid AL-Zu'bi^a and Jassim Ahmad Al-Gasawneh^{a*}

^aDepartment of Management Information Systems, Al-Balqa Applied University, Al-Salt, Jordan, Salt, 19110, Jordan

CHRONICLE

Article history:

Received: January 10, 2022

Received in revised format: March 20, 2022

Accepted: April 22, 2022

Available online: April 22 2022

Keywords:

Mobile banking

Banking service

Service quality

Customer's satisfaction

Benefits

Competitive advantage

ABSTRACT

The study aimed at developing a new model that integrates mobile banking service quality in its three dimensions: information quality, system quality, and interface design quality, with customers' satisfaction. The study used a survey method for collecting data and a sample of (439) customers downloading mobile banking applications and practicing banking transactions was selected randomly. The study model was validated using the validity and reliability measures in the SPSS statistical program, and Partial Least Square technique was used for testing the model hypotheses. As a result, it was found that information quality, system quality, and interface design quality significantly affected customer's satisfaction to use mobile banking service whilst system quality was found the most predictive one for the customer's satisfaction.

© 2022 by the authors; licensee Growing Science, Canada.

1. Introduction

Service quality has a significant role in increasing customers' satisfaction and their loyalty, therefore it is considered today as an inevitable demand for IT that entered all industrial fields (Gorla, Somers, & Wong, 2010). Therefore; as servicing organizations, banks should enhance their mobile banking services quality to retain users of this innovative technology and expand its usability. With ongoing development and ubiquity of mobile technology, mobile banking has become a preferable electronic means to be used in daily life and business activities (Tan & Lau, 2016). Mobile banking increased the potential of internet banking by connecting mobile technology to the internet access allowing customers to practice banking operations flexibly (Alsaleh et al., 2019). This formidable progress in mobile technology converted e-commerce intention to m-commerce (Sumita & Yoshii, 2010). The remarkably increasing rate of mobile technology usage in different fields of business has changed the way in which service providers and customers are engaged in the service delivery process (Jun & Palacios, 2016). This progressive advancement in mobile technology has enabled banks to provide more competitive and value-added banking services such as interactivity, convenience, availability, etc. surpassing geographical and time constraints (Chaouali, Souiden, & Ladhari, 2017; Malaquias & Silva, 2020). As bi-beneficial advantage, mobile banking has provided banks and customers with unprecedented, flexible, and convenient benefits; it can be imagined how mobile banking has greatly minimized the transactional costs to be about one to fiftieth of traditional banking costs, one tenth of that for ATM, and one – half of that for internet banking (Shaikh & Karjaluo, 2015). This cost-effective service by these highly reduced transaction costs has motivated banks to make closure to a large number of their net branches (Choudrie et al., 2018; Saeed & Xu, 2020). In addition, mobile banking has enabled banks to get beyond the tangible profits; mobile banking provides banks with

* Corresponding author.

E-mail address: j_algasawneh@asu.edu.jo (J. A. Al-Gasawneh)

open channels so that they can expand their customers' base to identify their customers' demands and requirements and plan well to get their customers' loyalty.

By looking considerably to the accelerated servicing activities, especially in the banking industry, in parallel with the prodigious development in mobile technology as well the stunning role of information communication technology (ICT) in accomplishing banking services, mobile banking is continually given a specialized importance (Alalwan et al., 2016; Baabdullah et al., 2019). Since 2013, mobile banking has witnessed an obvious acceptance at Jordanian citizens (Tarhini et al., 2019). Although, mobile phone users' community in Jordan is considered large, the percentage of mobile banking users in Jordan is still small (Anouze & Alamro, 2019). Accordingly, as mobile communications are running synchronically with banking services on the same device, this bi-advantage can provide a valuable chance to a researcher concerned with this field as well as banks' management in Jordan to make significant change by motivating non-users of mobile banking to be active via increasing their satisfaction to use this innovative technology.

1.1 Research Problem

Although Jordanian community is enjoying mobile technology especially mobile phones, the percentage of m - banking users is low. This reason motivates the research focused in this domain to increase the customers' satisfaction with the usage of this innovative technology through increasing the service quality provided by mobile banking. Therefore, the research problem can manifest in the following main question:

Is there a significant effect of mobile banking service quality on the customers' satisfaction with mobile banking in Jordan?

Through this main question, the following questions can be manifested:

Q1: Is there a significant effect of information quality of mobile banking on the customers' satisfaction with mobile banking in Jordan?

Q2: Is there a significant effect of system quality of mobile banking on the customers' satisfaction with mobile banking in Jordan?

Q3: Is there a significant effect of interface design-quality of mobile banking on the customers' satisfaction with mobile banking in Jordan?

1.2 Aim and Objectives

The study aims to propose a new model that can integrate a relationship between the m-banking service quality and customer satisfaction. Based on mobile banking literature in this study and the research problem, the study aim leads to the following objectives:

To investigate the effect of information quality of mobile banking on the customers' satisfaction with mobile banking in Jordan.

To investigate the effect of system quality of mobile banking on the customers' satisfaction with mobile banking in Jordan.

To investigate the effect of interface design-quality of mobile banking on the customers' satisfaction with mobile banking in Jordan.

2. Literature Review

2.1 Overview of Mobile Banking

Mobile banking is an approach for providing financial services through ICT which facilitates selection of mobile services in even low-income countries (Anderson, 2010). Mobile banking is a term used for performing balance checks, account transactions, payments, etc. via a mobile device such as mobile phone (Danyali, 2018, Hammouri et al., 2021). Mobile banking can be defined as using a mobile technology connected to the internet access to perform banking operations and transactions (Baptista & Oliveira, 2017). Mobile banking can be defined as a product or service provided by the financial industry using a mobile device, namely a mobile phone, Smartphone, or tablet (Shaikh & Karjaluo, 2015).

ICT played a major role in creating radical transformation that led banks to exceed geographical, legal, and industrial barriers across the worldwide new products and services (Poromatikul et al., 2019; Al-Weshah, 2017). The proliferation of IT within the banking industry motivated banks to build multi-channel strategies that enabled them to serve their consumers efficiently (Tam & Oliveira, 2016; Saeed & Xu, 2020). Today, e-banking channels including ATM, phone banking, internet banking, and mobile banking offer interchangeable benefits to the banks and customers; by using self-service technologies, customers can instantly access their accounts without need to visit their banks' branches and the banks can largely cut the costs incurred in the traditional banking network. M-banking today spurs banks to expand their services worldwide electronically, penetrating new markets in other countries and accordingly increasing their market share by attracting new customers.

The growth of telecommunications' technology has affected significantly on daily human life activities (Al-Weshah, 2018; Alalwan, Dwivedi, & Rana, 2017). The researchers and business organizations interested in this field tried to direct this major effect to the business activities so that they might hugely reduce the time and costs needed for contacting their clients (Alalwan et al., 2016). Mobile banking is one of these accelerating communications' technologies the banks use to achieve competitive advantage, such as reduced time, costs, and effort. Since the number of cell phones has bypassed that of PCs worldwide,

mobile banking has been more popular than other e-banking means (Frimpong et al., 2020). Moreover, mobile banking enhances the service quality because the customer can use it anywhere and anytime (Hanafizadeh et al., 2014). Therefore, it can be said that mobile banking is opening new opportunities to the banks and customers by providing the customers with new opportunities to practice the banking services without the time and place restrictions (e.g. in the house, office, car, etc.).

Nowadays, most of the banks are offering the same services; therefore, service quality is a vital means for differentiating them in the marketplace (De Leon, 2020; Al-Weshah, 2013). It was proved that meeting customers' expectations is no longer enough, therefore the banks, today, should look further by exceeding their customers' expectations (Alalwan et al., 2017). Mobile banking, as an innovative technology, provides a wide scope to the banks to achieve this competitive target. In this context, Jordanian banks are attempting to characterize their services through expanding their e-services and enhancing e-performance through high security of the customers' accounts, easy to access accounts, rapid and secure transaction processing, high level of responsiveness to the customers queries and demands, high level of integrity and transparency with the customers, and many other advantages that enable Jordanian banks to compete other rivals internationally. Exceeding its basic role represented in the simple talking and text messaging, mobile phones have a wide range of PC applications' functionalities to the extent that many observers speculate that many people in the near future mostly use mobile phones as alternatives to PCs (Baptista & Oliveira, 2016).

In spite of its development associated with magnificent benefits provided to the banks and customers- with knowledge that mobile technology users are continually increasing to the level that they bypass the PCs users in the near future- mobile banking needs more support to provide wider range of banking services (Cocosila & Trabelsi, 2016; De Leon, 2020). Mobile banking services and operations are still in their immaturity leaving a great deal of room for development (Moser, 2015, Halimi et al., 2021). This speculated choice indicates how much mobile banking should be in the future.

2. 2 Mobile Banking Service Quality

Banks' customers use mobile banking through their bank web site including all its applications; therefore, mobile banking system quality is correlated to the web site quality. Cao, Zhang, & Seydel (2005) investigated factors constituting web site quality. Their study used a questionnaire survey to verify the web site quality measures and the study framework was developed based on TAM and SERVQUAL. In their study, web site quality, in its four dimensions: information quality, service quality, system quality, and attractiveness, was measured against intention to use the web site. The results of their study indicated that system quality, information quality, and service quality affect the customers' intention to use the web site whereas attractiveness is less critical. This indicates that information quality and system quality are related to the customers' satisfaction through their intention to use mobile banking for proceeding the banking services.

In his empirical study in examining the initial trust impact on mobile banking adoption, Zhou (2011) asserted that information quality and structural assurance are the main factors affecting perceived usefulness that affects the customer trust. He added that customer trust affects perceived usefulness and that both factors affect the customer's intention to use mobile banking. Moreover, he explained that in case of the customer's lack of experience, he depends on his own perception of mobile banking services such as system quality or information quality to use mobile banking. It can be deduced by Zhou's study findings that the customers' perception of the system quality and information quality is related to their use of mobile banking that mostly reflect positively on the customer' satisfaction of using mobile banking.

Thakur (2014) stated that as internet-based technology, mobile banking is highly close to online banking and has dimensions that are comprised in that technology. His study aimed at assessing the effect of three quality factors: system quality, information quality, and interface design quality, on the customer's trust of and satisfaction with online banking. The survey method was used for data collection and partial least square (PLS) was used for data analysis. The study results found that information quality and system quality significantly affect customer's trust and satisfaction but affect customer's trust more than customer's satisfaction. Also, customer's trust is the most effective factor on customer's satisfaction with on or offline banking. Moreover, interface design quality is an important factor in building customer's trust but at a lower level than information quality and system quality. According to Thakur's study results, customer's satisfaction is not an independent factor that is affected directly by m-banking service quality, rather it is correlated to the customer's trust as a constructive variable that may reflect the effect of m-banking positively or negatively on the customer's perception and intention to use m-banking as a new and effective technology.

In their study aiming at investigating the relative importance of quality factors related to mobile banking, Lin (2013) built an evaluation model prioritizing the relative weights of mobile banking quality factors between high experienced and low experienced customer groups. The study used fuzzy analytic hierarchy process (AHP) in addition to an extent analysis approach. The study found that each group evaluated mobile banking quality in a different perspective. The low experienced customers' group evaluated mobile banking quality depending on the conventional customer service quality dimensions (reliability, responsiveness, trust, and empathy), where they received the highest weighting in this group, while the high-experienced customers' group evaluated mobile banking quality based on content quality, where its dimensions received the highest weighting in this group. It can be deduced from Lin's study findings that banks and other banking services organizations should look considerably at all services quality dimensions of m-banking to achieve satisfaction of their customers in all their segments.

2.3. Customer's Satisfaction

Customer's satisfaction is an effective measurement tool for organizations performance, because it reflects how well a product or service provided matches their customers' requirements and expectations (Sampaio, Ladeira, & Santini, 2017; Owusu Kwateng et al., 2019, Alghasawneh et al., 2021, Nusairat et al., 2021). The customer uses the service, compares the service provided with his expectations, and then evaluates the service based on the perceived difference (Zameer et al., 2015). Based on this service gap, the banks develop their business to get their customers' satisfaction. Further, the customers' satisfaction spurs banks to improve their services continually to keep their competitive position (Al-Weshah, 2017; Al-Weshah, 2013).

Banks should understand the psychological characteristics of their customers to identify their demands and requirements (Chawla & Joshi, 2018; Zhang, Lu, & Kizildag, 2019). This may require banks to upgrade their mobile banking applications to be more flexible and user-friendly. Accordingly, the banks should develop their mobile banking services to get their customers' satisfaction (Choudrie et al., 2018). In addition to the traditional service's dimensions, the mobile banking service must have properties that enable them to be distinguished from the traditional services such as privacy, security, ease of use, interactivity, integrity, and availability. The banks' customers today are highly concerned with receiving their required banking demands as much as the traditional transactions provide with highly safe processing on the internet.

Banks try to attain the customers' satisfaction as a gate to competitive advantage (Al-Weshah, 2017). To achieve this objective, they strive to get new technology like a mobile banking system that can connect the bank with its customers easily and securely (Al-Adwan et al., 2019). Beyond other e- banking systems, mobile banking exceeded the banks' expectations when it allowed the customers to connect to their banks all the day times and at any place they like with a highly secure and straightforward method.

3. The Conceptual Model and Hypotheses Formulation

The research model was tested using PLS technique (partial least squares). PLS is a regression analysis in structural equation modeling used to assess the measures of the reliability and validity and estimate the relationship between the constructs. PLS, as a widely used approach, helps researchers to assess the parameters of the measurement model in addition to the relationships between the structural path coefficients. According to the literature above, we can hypothesize that:

H1: Mobile banking service quality significantly affects customer satisfaction to use mobile banking.

H1-1: information quality significantly affects customer's satisfaction when using mobile banking.

H1-2: system quality significantly affects customer's satisfaction when using mobile banking.

H1-3: interface - design quality significantly affects customer's satisfaction to use mobile banking.

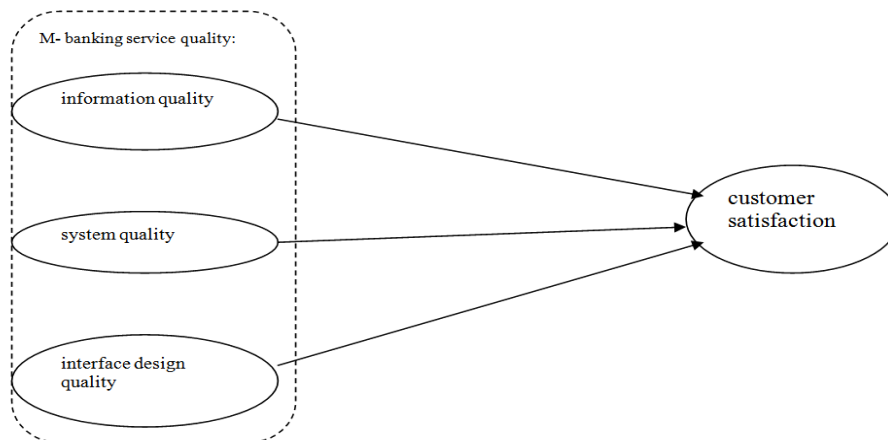


Fig. 1. The Conceptual Model

4. Methodology

4.1 The Measurements

A personally administered questionnaire was employed as an instrument for collecting data. To ensure the content validity, the study instrument was developed based on scales used in the previous validated inventory and slightly modified to fit the mobile banking context. Several items were used for measuring the variables (Table 1). The survey questionnaire was designed to be composed of two main parts. The first part was focused on describing the demographics of the respondents, whereas the second part was focused on measuring the effect of mobile banking service quality on the customers' satisfaction. For all variables, the five-point likert scale was used with anchors ranging from "strongly disagree" denoted by "1" to "strongly agree" denoted by "5". After reliability and validity tests of the instrument, the whole number of the instrument items (17) was included because they were compatible with the reliability and validity measurements. Hence, all the instrument items (17) were eligible for the study analysis.

Table 1
Content Validity

Variable	Adapted from
Information quality	O'Cass and Carlson, (2012), Alalwan (2017)
System quality	Jun and Palacios (2016), O'Cass and Carlson (2012), De Leon (2020)
Interface design quality	O'Cass and Carlson (2012), Zhang et al. (2019)
Customer's satisfaction	Thakur (2014), Baptista & Oliveira (2017)

4.2 Sample and Data Collection

The targeted population was mobile banking users having banking accounts in Jordanian commercial banks. Therefore, the questionnaire was focused on the banks' customers having banks' accounts and downloaded mobile banking applications to implement their banking transactions. Based on the central bank of Jordan (<http://www.cbj.gov.jo>), the number of mobile banking users in Jordan for the year of (2019) is around (194.016) which represents the study population. The study sample was selected randomly. For confidence of (95%), and error level of (5%), the sample size that represents the targeted population is (384). To acknowledge the accuracy of the results and normality of the sample distribution, the questionnaire was delivered to (520) mobile banking users. A period of three weeks was given for the questionnaires' response. The properly filled questionnaire number was (439) which represented (84.4%) of the total distributed questionnaire. The properly filled questionnaire represents the sample size and is very suitable for the data analysis.

5. Analysis and Results

5.1 The Sample File

By looking for the age category, it can be noticed that (38%) of the respondents were of the age (30 - < 40) which constituted the highest percent of the respondents followed by the age of (20- < 30) with (34%) giving the percent of (72%) for the both categories. This means that the percent of (72%) of the respondents were of the youth age users who are more interested to use mobile banking to shorten work time and efforts needed for achieving their financial treatments.

Gender: for the gender category, male respondents were as much twice as the female gender with percent (64%) for male and (34%) for female. This duplicated percent for the male may interpret the female fear from the online transactional risks especially those concerned with banking operations.

Income: for the income category, it was found that (47%) of the respondents were of high- income (≥ 1000 JDS) followed by the medium income respondents with percent (39%) and finally lowest income respondents with percent of (14%). This explains that the more income the individual has, the more possibility to be engaged in the new efficient technology that can accomplish more business activities with shorter time.

Experience in using the internet: for the internet-based experience category, it can be noticed that half percent of the respondents (51%) used the internet for more than 15 years. Because mobile banking technology is very coherent to the internet and its applications are implemented through it, the users of the internet find themselves more familiar than those who are less experienced. Fig. 2 shows the demographic description for the respondents.

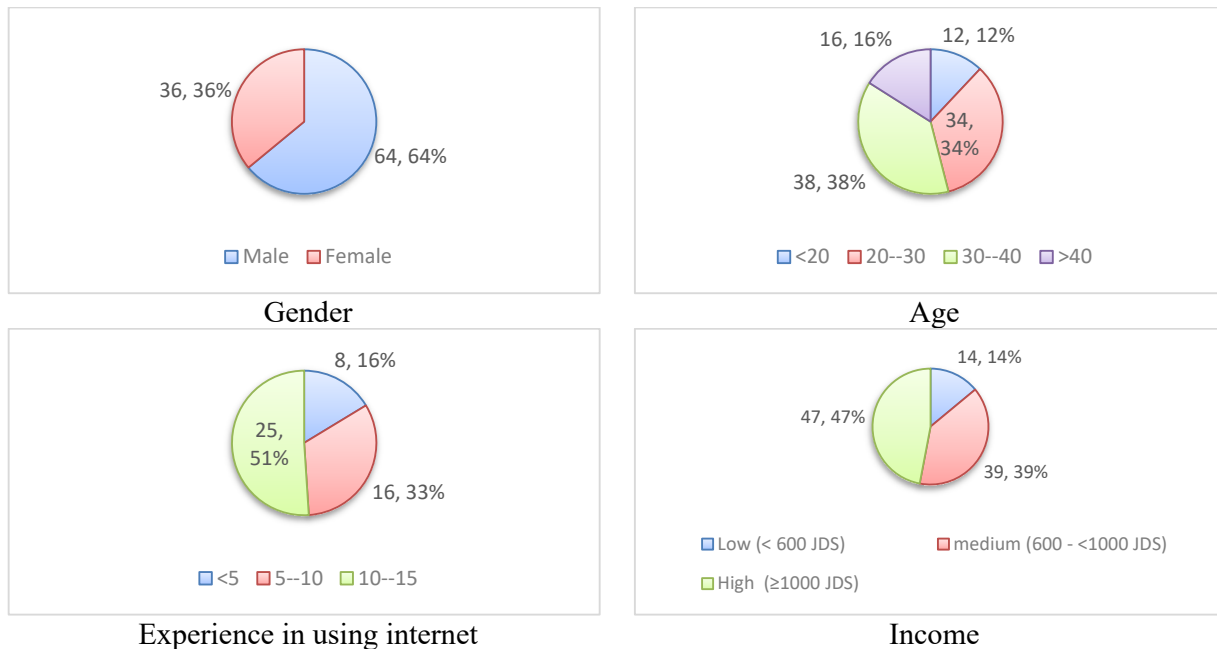


Fig. 2. Personal characteristics of the respondents

5.2 The Measurement Model

The measurement model was assessed using the reliability and validity measures. The reliability test is composed of the indicator reliability that should be above the cut-off value of (0.60) for each item, and composite reliability that should be above the cut-off value of (0.70) for each construct (Zhang, Zaho, & Wang, 2016). Table 2 shows that the measurement items and their constructs met the recommended levels and thus realized the indicator and composite reliability. The validity of the measurement model explains how block of items relate to its construct (Davey & Savla, 2010; Klesel et al., 2019; Mohd Thas Thaker et al., 2019), and can be assessed by two sub-measures: convergent validity and discriminant validity. The convergent validity can be realized if three conditions are met (Fornell & Larcker, 1981): the factor loading for each item should be greater than the value of (0.70), the composite reliability should be greater than the value of (0.70), and the average extracted variance (AVE) should be greater than the value of (0.50). The discriminant validity can be assessed using AVE values; for each construct, the square root of AVE should be greater than the correlation of that construct with the other constructs (Fornell & Larcker, 1981). Table 3 shows that all constructs met the sufficient level of discriminant validity. The PLS results indicated that the measurement model achieved the satisfactory level of reliability and validity.

Table 2
Reliability and Convergent Validity

construct	items	Indicator reliability	Item loadings	Composite reliability	Average variance extracted (AVE)
Information quality	IQ1	0.906	0.846	0.729	0.567
	IQ2	0.907	0.854		
	IQ3	0.909	0.748		
	IQ4	0.905	0.662		
System quality	SQ1	0.906	0.722	0.724	0.598
	SQ2	0.907	0.711		
	SQ3	0.908	0.805		
	SQ4	0.908	0.726		
	SQ5	0.908	0.786		
Interface design quality	IDQ1	0.906	0.746	0.755	0.625
	IDQ2	0.905	0.879		
	IDQ3	0.908	0.808		
	IDQ4	0.905	0.801		
Customer's satisfaction	CS1	0.904	0.831	0.727	0.770
	CS2	0.903	0.821		
	CS3	0.904	0.664		
	CS4	0.907	0.800		

Table 3
Discriminant Validity

	Mean	Standard DEV.		IQ	SQ	IDQ	CS
Information quality	3.5763	.75966	Sig. (2- tailed)	0.75			
System quality (SQ)	3.6491	.64769	Sig. (2- tailed)	0.412**	0.77		
Interface design quality (IDQ)	3.4613	.76219	Sig. (2- tailed)	0.350**	0.326**	0.79	
Customer's satisfaction (CS)	3.3785	.78479	Sig. (2- tailed)	0.495**	0.554**	0.546**	0.87

** Correlation is significant at 0.01 level (two-tailed)

5.3 The Structural Model

After assessing the proposed research model by testing reliability and validity, the partial least square (PLS) technique was used for assessing the structural model. In the structural model PLS test R^2 explains the percentage of variation in the dependent variable caused by the independent variable, and it indicates the entire predictive power of the model. R^2 should be not less than (10%) to provide substantial explanation (Brase & Brase, 2013; Spatz, 2007). Path coefficients were used to measure the strength of the relationships between the variables with significance levels (0.05) and (0.01). Table 4 reports the model summary where R^2 is (0.570) and thus explains substantial predictive power. The results indicate the goodness – of – fit of the model is acceptable where R^2 is (0.570) and Durbin -Waston value (1.923) is around 2.

Table 4
Model Summary

model	R	R^2	Adjusted R^2	Std. of the estimate	Durbin - Watson
1	0.755	0.570	0.558	0.50538	1.923

Notes: (a) Dependent variable: customer satisfaction; (b) predictors: (constant), information quality, system quality, interface face design quality.

Customer's satisfaction as a function of mobile banking service quality can be depicted in the form of the following equation:

$$CS = \alpha_0 + \beta_1(IQ) + \beta_2(SQ) + \beta_3(IDQ) + \varepsilon$$

where CS is the dependent variable, α_0 is the constant or intercept, β_1 , β_2 , and β_3 are the slopes (Beta coefficient) for the independent variables IQ, SQ, and IDQ respectively, and ε is the error term.

Table 5 reports the multiple regression analysis results. The results indicate that the variables: information quality, system quality, and interface design quality have a direct positive and significant impact on the customer's satisfaction with beta value (0.152, 0.276, 0.229) respectively and significance level (< 0.05) for IQ and (< 0.01) for SQ and IDQ. Also, information quality has a direct positive and significant impact on the customer's satisfaction but in a less marginal influence where beta value is (0.152) with significance level (< 0.05). According to these results, the variables can be ordered based on their impact marginality on the customer satisfaction with mobile banking as follows: system quality, interface design quality, and information quality.

Table 5
CS Coefficients Test

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	B		
(Constant)	0.221	0.286		0.770	0.442
Information quality	0.152	0.065	0.152	2.318	0.022
System quality	0.324	0.076	0.276	4.283	0.000
Interface design quality	0.221	0.064	0.229	3.49	0.001

Notes: * $p < 0.05$; ** $p < 0.01$; Dependent Variable: Customer Satisfaction (CS)

6. Discussion

The study has proposed the significant effect of mobile banking service quality, in its three dimensions: information quality, system quality, and interface design quality on the customer's satisfaction. Although the dimensions of the mobile banking service quality were tested against the customer's satisfaction in mobile banking in the prior research, never were they integrated together to be tested against customer satisfaction except this study as a considerable contribution. The study model was found to have a high power in predicting the relationship between the mobile banking service quality and customer's satisfaction where the mobile banking service quality dimensions explain (0.577) of the variance related to the customer satisfaction which reinforces this study contribution.

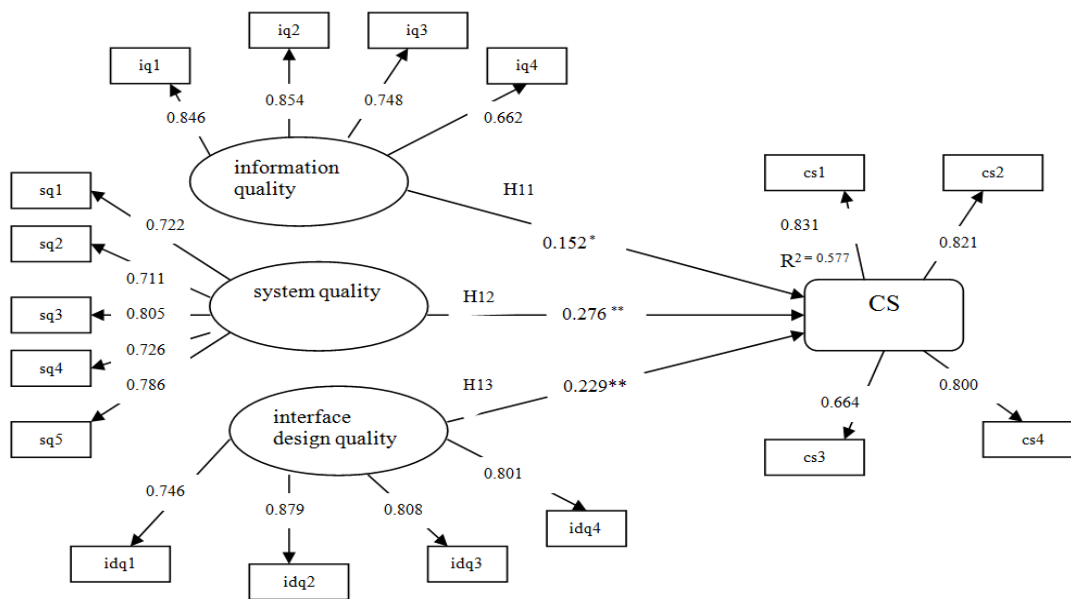


Fig. 3. The Structural Model

For all variables, when they were entered into the regression model to be tested against customer's satisfaction, it was found that all them have significant influence on the customer's satisfaction; system quality was found to have the highest effect on the customer's satisfaction ($\beta = 0.276$, p -value < 0.01) (Fig. 3). This means that mobile banking users in Jordan perceive system quality introduced by mobile banking as a very essential to realize their satisfaction. Mobile banking users in Jordan look behind the traditional service quality components represented in tangible, reliable, responsive, quality assurance, and empathy proposed by SERVQUAL model (Mostafa, 2020). It should be very inevitable for Jordanian mobile banking users

to look forward to find new customer service quality properties fitting to the e- communicative banking systems such as safety and security, system interactivity, speed (in terms of bit/ sec.) and other quality properties that enable the users of mobile banking to achieve their mobile banking transactions effectively. Interface design quality had a significant effect on the customer's satisfaction with mobile banking ($\beta = 0.229$, p - value < 0.01). This interprets the extent to which Jordanian mobile banking users give to the mobile banking application interface design in terms of properties and features through which they can implement their banking transactions. As mobile banking users perceive mobile banking application interfaces designed to be easy to use, flexible to interact with, and attractive, they may be motivated to reuse and be more satisfied within its usage, especially when they find perceived benefits more differentiated than those introduced by traditional banking systems. Information quality provided on mobile banking systems was found to have a significant effect on the customer's satisfaction with mobile banking service ($\beta = 0.152$, p - value < 0.05). Information quality, that is represented in the content quality and data processing quality, is considered very essential for the customers' satisfaction to use the mobile banking system. Mobile banking users need to find the banking information relating to their diverse required transactions (fund transfer, accounts' check, bills' payment, etc). Further, while their required transactions run on the mobile banking application, they need this different field information to be processed successfully; they need their transactions to be processed in a compatible, integrative, and rapid manner.

7. Conclusion and Implications

Customer's satisfaction is a very essential and a proactive step to the use of a new information system. Therefore, based on the literature, the study has built the satisfaction model and determined its identifiers for the purpose of increasing the satisfaction level at the non users and expanding its usage. Depending on the literature, the study identified mobile banking service quality identifiers and tested them against customer's satisfaction. The variables of mobile banking service quality: information quality, system quality, and interface design quality were tested against the customer's satisfaction. It was found that the study model has a significant power to predict the customer satisfaction where R^2 is (0.577). Also, system quality was found to have the strongest impact on the customer's satisfaction followed by interface design quality, and finally the information quality that had the weakest impact. The study results indicate that banks management and research in the mobile banking domain should concentrate on three identifiers of the mobile banking service quality (information quality, system quality, and interface design quality) to increase the customer's satisfaction with mobile banking and motivate its usage expansion.

The study was limited to the mobile banking service quality to which the customer's satisfaction can be controlled. There're other factors that may control the customer satisfaction with mobile banking and not identified in this study, such as perceived security, compatibility, customers' trust, and others. The future research interested in this field should take these factors in considerations. Moreover, the study measured the customer's satisfaction with mobile banking from the individual's perspective not from the organizational perspective; this may open a new gate for the future research to build an integrative model including the two perspectives.

8. The Author's Contribution

This study explained the most important factor needed by banks and customers to support banking services (i.e. m-banking). This importance of m-banking is perceived to be clearer in risk situations than others. For instance, during the Corona pandemic situation associated with lockdown in most countries, customers have been mostly compelled to use mobile banking applications to achieve their demands.

Although Jordanian banks have many and different m-banking services, banks' customers still do not trust m-banking services. This may be attributed to the fear of financial security penetration and hacking they may be exposed to in some financial issues. The banking services achieve the customers satisfaction through services' quality. Therefore, the study model included m-banking service quality via three main dimensions; information quality, system quality, and interface design quality.

References

- Al-Adwan, A.S., Alrousan, M., Al-Soud, A., & Al-Yaseen, H. (2019). Revealing the black box of shifting from electronic commerce to mobile commerce: the case of Jordan. *Journal of Theoretical and Applied Electronic Commerce Research*, 14(1), p 51-67.
- Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99-110.
- Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118-139.
- Alsaleh, D. A., Elliott, M. T., Fu, F. Q., & Thakur, R. (2019). Cross-cultural differences in the adoption of social media. *Journal of Research in Interactive Marketing*, 13(1), 119-140.
- Alghasawneh, L. A. S., Akhorshaideh, A. H., Alharafsheh, M., Ghasawneh, A., Al-Gasawneh, J. A., & Al-Hadid, A. Y. (2021). Determinants of Supply Chain Management Practices in Jordanian Pharmaceutical Firms. *Solid State Technology*, 64(2), 2986-3001.

- Al-Weshah, G., Al-Manasrah, E., & Al-Qatawneh, M. (2019). Customer relationship management systems and organizational performance: a quantitative evidence from Jordanian telecommunication industry. *Journal of Marketing Communications*, 25(8), 799-819.
- Al-Weshah, G. (2018). E-marketing practices from Jordanian tourism agencies perspectives: a qualitative evidence. *International Journal of Online Marketing (IJOM)*, 8(1), 21-36.
- Al-Weshah, G. (2017). Marketing intelligence and customer relationships: empirical evidence from Jordanian banks. *Journal of Marketing Analytics*, 5(3/4), 141-152.
- Al-Weshah, G. (2013). The role of internet banking in continuous improvement areas: a quantitative evidence from Jordanian banks. *International Journal of Business Performance Management*, 14(2), 181-196.
- Anderson, J. (2010). M-banking in developing markets: competitive and regulatory implications. *Info*, 12(1), 18–25.
- Hammouri, Q., Majali, T., Almajali, D., Aloqool, A., & AlGasawneh, J. A. (2021). Explore the Relationship between Security Mechanisms and Trust in E-Banking: A Systematic Review. *Annals of the Romanian Society for Cell Biology*, 25(6), 17083-17093.
- Anouze, A. L. M., & Alamro, A. S. (2019). Factors affecting intention to use e-banking in Jordan. *International Journal of Bank Marketing*, 38(1), 86-112.
- Baabdullah, A. M., ALalwan, A. A., Rana, N. P., Patil, P., & Dwivedi, Y. (2019). An integrated model for m-banking adoption in Saudi Arabia. *International Journal of Bank Marketing*, 37(2), 452-478
- Baptista, G., & Oliveira, T. (2016). A weight and a meta-analysis on mobile banking acceptance research. *Computers in Human Behavior*, 63, 480-489.
- Baptista, G., & Oliveira, T. (2017). Why so serious? Gamification impact in the acceptance of mobile banking services. *Internet Research*, 27(1), 118-139.
- Brase, C. H., & Brase, C. P. (2013). *Understanding basic statistics*. Sixth edition. Boston: Books/Cole.
- Cao, M., Zhang, O., & Seydel, J. (2005). B2C e-commerce web site quality: an empirical examination. *Industrial Management and Data Systems*, 105(5), 645- 661.
- Chaouali, W., Souiden, N., & Ladhari, R. (2017). Explaining adoption of mobile banking with the theory of trying, general self-confidence, and cynicism. *Journal of Retailing and Consumer Services*, 35, 57-67.
- Chawla, D. and Joshi, H. (2018). The moderating effect of demographic variables on mobile banking adoption: an empirical investigation. *Global Business Review*, 19. Suppl 3, S90-S113.
- Choudrie, J., Junior, C.O., McKenna, B. & Richter, S. (2018). Understanding and conceptualizing the adoption, use and diffusion of mobile banking in older adults: a research agenda and conceptual framework. *Journal of Business Research*, 88, 449-465.
- Cocosi, M., & Trabelsi, H. (2016). An integrated value-risk investigation of contactless mobile payments adoption. *Electronic Commerce Research and Applications*, 20, 159-170.
- Danyali, A. (2018). Factors influencing customers' change of behaviors from online banking to mobile banking in Tejarat Bank, Iran. *Journal of Organizational Change Management*, 31(6), 1226-1233.
- Davey, A., & Savla, J. (2010). *Statistical power analysis with missing data: A structural equation modeling approach*. Routledge: Taylor & Francis Group.
- De Leon, M. (2020). Factors influencing behavioral intention to use mobile banking among retail banking clients. *Indonesian Journal of Communications Studies*, 3(2), 118-137.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18 (1), 39-50.
- Frimpong, K., Shuridah, O., Wilson, A., & Sarpong, F. (2020). A cross-national investigation of trait antecedents of mobile-banking adoption. *Thunderbird International Business Review*, 62(4), 411-424.
- Gorla, N., Somers, T., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *The Journal of Strategic Information Systems*, 19(3), 207-228.
- Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., Jalilvand, M., & Tabar, S. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62-78.
- Halimi, F. F., Gabarre, S., Rahi, S., Al-Gasawneh, J. A., & Ngah, A. H. (2021). Modelling Muslims' revisit intention of non-halal certified restaurants in Malaysia. *Journal of Islamic Marketing*.
- Jun, M., & Palacios, S. (2016). Examining the key dimensions of mobile banking service quality: an exploratory study. *International Journal of Bank Marketing*, 34(3), 307 – 326.
- Klesel, M., Schuberth, F., Henseler, J., & Niehaves, B. (2019). A test for multi-group comparison using partial least squares path modeling. *Internet Research*, 29(3), 464-477.
- Lin, H. (2013). Determining the relative importance of mobile banking quality factors. *Computer Standards and Interfaces*, 35(2), 195–204.
- Malaquias, R. F., & Silva, A. F. (2020). Understanding the use of mobile banking in rural areas of Brazil. *Technology in Society*, 62, 114-128.
- Mohd Thas Thaker, M. A., Allah Pitchay, A. B., Mohd Thas Thaker, H. B., & Amin, M. F. (2019). Factors influencing consumers' adoption of Islamic mobile banking services in Malaysia: An approach of partial least squares (PLS). *Journal of Islamic Marketing*, 10(4), 1037-1056

- Moser, F. (2015). Mobile Banking: A fashionable concept or an institutionalized channel in future retail banking? Analyzing patterns in the practical and academic mobile banking literature. *International Journal of Bank Marketing*, 33(2), pp. 162-177.
- Mostafa, R. B. (2020). Mobile banking service quality: a new avenue for customer value co-creation. *International Journal of Bank Marketing*, 38(5), 1107-1132.
- Nusairat, N., Al-Gasawneh, J., Aloqool, A., Alzubi, K., Akhorshaideh, A., Joudeh, J., & Ibrahim, H. (2021). The relationship between Internet of things and search engine optimization in Jordanian Tele-Communication Companies: The mediating role of user behavior. *International Journal of Data and Network Science*, 5(3), 163-172.
- O’Cass, A., & Carlson, J. (2012). An empirical assessment of consumers’ evaluations of web service quality: conceptualizing and testing a formative model. *Journal of Services Marketing*, 26(6), 419 – 434.
- Owusu Kwateng, K., Osei Atiemo, K. A., & Appiah, C. (2019). Acceptance and use of mobile banking: an application of UTAUT2. *Journal of Enterprise Information Management*, 32(1), 118-151.
- Poromatikul, C., De Maeyer, P., Leelapanyalert, K., & Zaby, S. (2019). Drivers of continuance intention with mobile banking apps. *International Journal of Bank Marketing*, 38(1), 242-262.
- Saeed, K. A., & Xu, J. (2020). Understanding diffusion of information systems-based services: evidence from mobile banking services. *Internet Research*, 30 (4), 1281-1304.
- Sampaio, C. H., Ladeira, W. J., & Santini, F. D. (2017). Apps for mobile banking and customer satisfaction: a cross-cultural study. *International Journal of Bank Marketing*, 35(7), 1133-1153
- Shaikh, A., & Karjaluo, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129 - 142.
- Spatz, C. (2007). *Basic statistics: Tales of distributions*. 9th edition. Thomson learning. Inc.
- Sumita, U., & Yoshii, J. (2010). Enhancement of e-commerce via mobile accesses to the internet. *Electronic Commerce Research and Applications*, 9(3), 217-227.
- Tam, C., & Oliveira, T. (2016). Performance impact of mobile banking: Using the task-technology fit (TTF) approach. *International Journal of Bank Marketing*, 34(4), 434 – 457.
- Tan, E. & Lau, J. (2016). Behavioural intention to adopt mobile banking among the millennial generation. *Young Consumers*, 17(1), 18-31.
- Tarhini, A., Alalwan, A. B., Shammout, A. B., & Al-Badi, A. (2019). An analysis of the factors affecting mobile commerce adoption in developing countries towards an integrated model. *Review of International Business and Strategy*, 29(3), 157-180.
- Thakur, R. (2014). What keeps mobile banking customers loyal?. *International Journal of Bank Marketing*, 32(7), 628 – 646.
- Zameer, H., Tara, A., Kausar, U., & Mohsin, A. (2015). Impact of service quality, corporate image and customer satisfaction towards customers’ perceived value in the banking sector in Pakistan. *International Journal of Bank Marketing*, 33(4), 442 – 456.
- Zhang, T., Lu, C., & Kizildag, M. (2018). Banking “on-the-go”: examining consumers’ adoption of mobile banking services. *International Journal of Quality and Service Sciences*, 10(3), 279-295.
- Zhang, J., Zhao, Y. and Wang, Y. (2016). A study on statistical methods used in six journals of library and information science. *Online Information Review*, 40(3), 416-434.
- Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*, 21(5), 527-540.

E-Resource

www.cbj.gov.jo



© 2022 by the authors; licensee Growing Science, Canada. This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY). license (<http://creativecommons.org/licenses/by/4.0/>).