



Impact of the Quality of Financial and Banking Applications Used on Smartphone on the Customer Satisfaction of Jordanian Islamic Bank

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ABSTRACT

This study aimed to identify the impact of the quality of financial and banking applications through the dimensions of (information security, trust, privacy) used on smartphones on the satisfaction of Jordanian Islamic bank customers. The researcher employed a descriptive-analytical approach in constructing the study. The study population consisted of all customers of Jordanian Islamic banks. The researcher developed a research tool (a questionnaire) to align with the study's dimensions. A random sample of Islamic bank customers was selected, and the research tool was distributed to them electronically. The researcher was able to obtain responses from 249 participants. One of the key findings of the study was that there is a high level of usage of financial and banking applications on smartphones in Islamic banks. Among the dimensions, "privacy" ranked the highest in importance based on the participants' responses. The results also revealed a significant impact of the quality of financial and banking applications used on smartphones, through the dimensions of (information security, trust, and privacy), at a significance level of ($\alpha \leq 0.05$) on the satisfaction of Jordanian Islamic bank customers. Among the key recommendations was the need for greater focus on quality factors related to financial and banking applications by emphasizing the dimensions of information security, trust, privacy, and data protection due to their significant role and impact on customers using these applications. Additionally, there is a potential for further research and studies on the factors affecting the quality of financial and banking applications on smartphones for electronic banking services offered to customers.

Keywords: Quality of Financial and Banking Applications, Smartphones, Customer Satisfaction, Islamic Banks, Jordan

JEL Classifications: G15, O14, M15

1. INTRODUCTION

The widespread adoption of financial technologies and the shift of the global economy towards a digital economy, along with the pursuit of financial inclusion and globalization, have made it essential for banks to keep pace with technological developments and incorporate them into their daily operations. Smartphones,

in particular, are among the most widely used tools, offering numerous services that customers use frequently (Al-Adamat et al., 2023; Al-Shanableh et al., 2024a). However, the level of knowledge and ability to utilize these services varies from one customer to another due to several factors, with the quality of financial and banking applications on smartphones being one of the most prominent. These services include various financial data and

specialized services, which require a high degree of efficiency and quality in their delivery to customers (Mohammad et al., 2024a; Al-Daoud et al., 2023).

Technological advancements have produced numerous forms of services and transactions provided by banks, which have contributed to transforming banking systems to align with the requirements of the technological era (Al-Hawary and Obiadat, 2019; Al-Momani et al., 2024; Al-Majali et al., 2024). This transformation aims to introduce new services, improve existing ones, and offer solutions to problems faced by customers, while also exploring customer expectations and preferences through continuous improvement (Mohammad et al., 2024; Alkhawaldeh et al., 2024).

Jordanian Islamic banks are among the sectors that continuously strive to enhance the application of electronic services and make optimal use of them to attract the largest possible number of customers. Moreover, these banks view electronic services as a competitive advantage, helping them maintain a presence in the market. While profitability is a primary goal for banks, they also recognize the importance of customer satisfaction and work diligently to build trust and flexibility with their clients, thereby establishing a solid foundation for enhancing competitiveness.

Among the most prominent services provided by banks are financial services through smartphones, which facilitate the transfer of financial data in various forms and are available to customers at all times. Customers must be familiar with these services, including how to use and access information, highlighting the importance of quality standards between the parties involved. This study examines the impact of the quality of financial and banking applications used on smartphones on the satisfaction of customers of Jordanian Islamic banks. The study reflects customers' expectations and perceptions of the services offered through smartphones by Jordanian Islamic banks, which may assist bank management in making decisions regarding the use and distribution of services via smartphones, and to what extent they can be applied, ultimately contributing to improving the quality of services provided through these applications and attracting a larger customer base. Thus, this study aims to explore the impact of the quality of financial and banking applications used on smartphones on the satisfaction of Jordanian Islamic bank customers.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1. Electronic Services

E-business has automated performance in various fields, extending beyond the supplier-customer relationship to encompass all productive, administrative, financial, and service activities, as well as the relationship between the organization and its employees and customers, including the evaluation and control of work performance. In contrast, e-commerce focuses on business activities, particularly contracts for buying, selling, and requesting services through technological mechanisms within a digital environment (Alrfai et al., 2024; Abusaleh et al., 2024;

Al-Shanableh et al., 2024b; Ghaith et al., 2023). A closer look at the distinction between the two reveals that e-business involves the exchange of data and information unrelated to the direct sale and purchase of goods. Institutions use electronic mechanisms to distribute information and provide customer support, and since these activities are not commercial, the term "e-business" is broader than "e-commerce." Ultimately, the term "e-commerce" could be replaced with "e-business." (Haija et al., 2023; Bouazza and AlSsaideh, 2023; Hunitie et al., 2023; Khalayleh et al., 2022).

Smartphones represent a clear turning point in the use of technology across various aspects of life, as their usage has increased rapidly, creating a revolution in daily operations. One of the key drivers of the increased use of smartphones is their ability to meet the diverse needs of users. Numerous sectors, such as education, healthcare, banking, and travel agencies, have witnessed a transformation in how they offer their services through smartphones (Mohammad et al., 2023a; Mohammad et al., 2024b; AIMkaneen, 2021; Al-Shanableh et al., 2024c). The widespread use of smartphones stems from their role as an alternative to personal computers and laptops, as they contain numerous applications that allow for the performance of many tasks (Alzoubi et al., 2024; Alzyoud et al., 2024).

Most banks around the world now offer mobile banking services, which represent a new strategy in banking. These services allow smartphone users to access their accounts via a banking application at any time and conduct various banking transactions quickly, efficiently, and at a low cost. Customers can log into their bank's mobile app using their internet-connected smartphone anytime and from anywhere (Mohammad et al., 2023b; Aawishe et al., 2024). Financial applications are defined as companies or representatives of companies that combine financial services with modern and innovative technologies. These applications provide the market with products and services online, aiming to attract customers by offering easier, more effective, and transparent products and services than before (Rahahle et al., 2024; Ghoneim and Arabasy, 2024). The key dimensions of these applications are trust, privacy, and information security.

2.1.1. Electronic trust

Trust in services provided through smartphones encompasses notions of competence, integrity, and fairness. On this basis, customers aim to reduce uncertainty and simplify electronic banking transactions by relying on their trust in the bank due to their familiarity with it. Numerous studies have demonstrated that trust is the most crucial factor for users, especially internet users. According to Sarram et al., (2024), trust significantly impacts the adoption of electronic banking services by customers. Trust is, therefore, seen as a key factor influencing whether customers choose to use these services.

Electronic trust emerges in environments where direct or physical communication does not occur, with interactions mediated by digital devices. Online trust does not differ fundamentally from face-to-face trust; the trust between humans is not substantially different from the trust between humans and machines. Online transactions are fraught with uncertainties and potential risks, making it difficult to imagine that customers would engage with

online service providers without placing their trust in them. Trust thus becomes a powerful strategy influencing customers' intentions (Al-Khair, 2023; Al-Batah et al., 2024a).

2.1.2. Privacy

The issue of privacy has garnered increasing attention from businesses after numerous problems arose due to websites publishing the personal data of customers who visit them and provide their information for research or access. As a result of the harm and inconvenience caused by the unauthorized dissemination of their data, many customers voiced their protests, and many refrained from visiting these websites due to privacy violations. These issues prompted governments to take corrective action, leading to the issuance of laws and regulations governing customer privacy.

In response, websites and online stores have also shown increased concern for privacy, with many now dedicating a prominent section on their websites titled "Privacy Policy," explaining in detail how customer information will or will not be used (Al-Adwan et al., 2024a; Al-Doori et al., 2024). Additionally, independent companies have emerged to strengthen the relationship between customers and websites through secure transactions and exchanges. Websites and online stores often register with these companies to assure customers of the privacy and protection of their data (Alshaketheep et al., 2024; Al-Batah et al., 2024b).

2.1.3. Information security

Information security is academically defined as the study of theories and strategies for protecting information from threats or attacks. Information undergoes scrutiny and is subject to measures aimed at safeguarding confidentiality, content integrity, and availability, as well as countering misuse or criminal activities within the system. It is understood as the study of policies and strategies necessary to protect information from various threats and risks it may face (Al-Adwan et al., 2024b).

Information security is also defined as the technical policies, procedures, and measures taken to prevent accidental access, theft, or tampering with records. It refers to protecting and securing all resources used in processing information, which includes securing the organization itself, its employees, the computing systems used, and the media containing the organization's data. This is achieved by implementing numerous protection procedures and techniques to ensure the ultimate safety of information (Halteh et al., 2024; Alsharaiah et al., 2024). From a researcher's perspective, information security involves the study of theories, strategies, and laws concerning the protection of information from potential threats. It also involves applying the necessary measures and methods to provide security and respond to risks, overcoming them effectively.

2.2. Customer Satisfaction Concept

Many organizations recognize that creating customer satisfaction is an intangible asset that contributes to gaining a competitive advantage. Regarding services, customer satisfaction represents a combination of emotional and cognitive responses from customers towards the services they receive, forming a foundation for the organization (Adwan and Alsoud, 2024). Customer satisfaction is

a marketing concept derived from how an organization provides its product or service according to customer expectations. It is a performance process that must be observed and compared with the expectations, needs, and desires of customers.

If the performance exceeds expectations, the customer will be fully satisfied, even experiencing happiness. If the performance matches expectations, satisfaction will be achieved. However, if the performance falls below expectations, customers will feel disappointed and dissatisfied, potentially leading them to discontinue their relationship with the organization in the future. Customer satisfaction is a measure of how pleased customers are with the services and products provided by the organization. Information regarding customer satisfaction, including surveys and evaluations, can help organizations identify the best ways to improve or alter their services (Ahmed, 2021).

2.3. Quality of Financial and Banking Applications and Customer Satisfaction

Several field studies have explored the relationship between the quality of financial and banking applications and customer satisfaction. Tabaiba (2023) pointed out a positive effect of ease of use and trust, while there was no positive effect for perceived usefulness on customer behavior. Similarly, Abdulaziz's (2022) study, which aimed to identify the role of mobile banking in enhancing customer trust in electronic banking services, examined factors influencing the adoption of mobile banking services, such as perceived usefulness, ease of use, service quality, privacy, complexity, and information security. The study found no statistically significant differences between the variables of age and electronic trust, with an F-value of 2.148 at a significance level of 0.095, which is not statistically significant.

Conversely, Saravanan and Leelavathi's (2020) study found a significant relationship between service quality dimensions and customer satisfaction in electronic banking services in the Chennai region. The study's dimensions included efficiency, system availability, reliability, and privacy, with recommendations emphasizing the need to improve electronic services to retain customers. Additionally, the study by Ramadhani et al. (2019), which aimed to investigate the impact of electronic banking services on customer loyalty and satisfaction in TBK Bank in Indonesia, revealed that electronic banking facilities had a positive and significant impact on customer satisfaction. These facilities also directly and positively influenced customer loyalty and satisfaction. Based on the above, the study hypothesis can be formulated as follows:

Main hypothesis: There is an effect of the quality of financial and banking applications used on smartphones on the satisfaction of customers of Jordanian Islamic banks.

3. METHODOLOGY AND DATA

The researcher employed the descriptive-analytical method, which is based on studying the phenomenon as it exists in reality and describing it accurately. This is followed by analyzing the correlational relationships between the independent variable, quality of financial

and banking applications, and the dependent variable, satisfaction of customers of Jordanian Islamic banks, in an attempt to identify the impact of the independent variable on the dependent variable. The goal is to reach conclusions that contribute to developing and improving the current reality. Study model is presented in Figure 1.

The study population consists of customers of Islamic banks in the northern region of the Hashemite Kingdom of Jordan, who use financial applications via mobile phones provided by these banks (Table 1). There are a total of three Islamic banks. The researcher relied on a random sample of customers from these Islamic banks in the northern region, focusing on customers who use smartphones. A total of 249 customers were selected for the sample, and data were collected through an electronic questionnaire designed and distributed via a link.

Figure 1: Study model

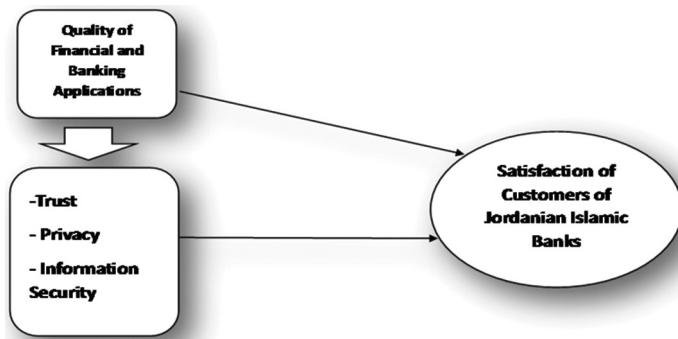


Table 1: Names of Islamic banks

Bank name	Year established	Number of employees	Year
Jordan Islamic Bank	1978	2,439	2022
Arab Islamic International Bank	1997	1,027	2022
Safwa Islamic Bank	2009	628	2022
Total		4,094	

Source: Jordanian association of commercial banks

Table 2: Arithmetic means and standard deviations for the dimensions of financial and banking applications quality

S. No.	Dimension	Rank	Arithmetic mean	Relative importance
1	Trust	3	3.74	High
2	Information Security	2	3.78	High
3	Privacy	1	3.83	High
	Overall Quality		3.78	High

Table 3: Opinion results of the study sample on customer satisfaction with Jordanian Islamic banks

#	Question	Arithmetic mean	Standard deviation	Rank	Relative importance
18	I rely on mobile applications for my banking transactions	3.63	1.000	3	Medium
19	Others cannot access my personal account through the mobile application	3.82	0.891	2	High
20	Multiple services are available through the mobile application related to the bank	3.92	0.832	1	High
21	Mobile banking services enhance my trust in the bank	3.47	1.017	4	Medium
22	I prefer conducting banking transactions through mobile applications	3.12	0.879	5	Medium
	Overall Satisfaction	3.59			Medium

4. STATISTICAL ANALYSIS AND HYPOTHESIS TESTING

4.1. Descriptive Analysis

4.1.1. Results related to the arithmetic means of the dimensions of financial and banking applications quality

After analyzing the data, the researcher reached the following arithmetic means for the dimensions of financial and banking applications quality:

Table 2 shows that the overall arithmetic mean for the dimensions of financial and banking applications quality, in terms of relative importance, is high, with an overall mean of 3.78. The Privacy dimension ranked first with a mean of 3.83 and a high relative importance, while the Trust dimension ranked last with a mean of 3.74, also with high relative importance.

4.1.2. Results related to the arithmetic means of customer satisfaction for Jordanian Islamic banks

The fourth dimension of the questionnaire consisted of five questions designed to reflect practical reality. The data obtained were analyzed, and Table 3 presents the results of the statistical analysis for the overall study population regarding customer satisfaction with Jordanian Islamic banks.

Table 3 reveals that the general arithmetic mean for the dimension of customer satisfaction with Jordanian Islamic banks falls within the medium range, with an overall mean of 3.59. The highest mean, 3.92, was for the statement “Multiple

services are available through the mobile application related to the bank,” while the lowest mean, 3.12, was for the statement “I prefer conducting banking transactions through mobile applications.”

From the review of the sample responses, the researcher notes a variation in customer responses regarding the reliability and dependability of using mobile applications. The responses ranged from high to medium, indicating that these services are influenced by several factors that either encourage or discourage the use of such applications.

4.2. Testing for Normal Distribution of Data

If the skewness coefficient is (0) or close to it, and the kurtosis coefficient is (3) or close to it, this indicates that the data follows a normal distribution. The following Table 4 presents the results.

Table 4 shows the results of testing the normal distribution of variables using skewness and kurtosis coefficients. The skewness values for all variables are close to zero, with the information security variable showing the lowest skewness value at (-0.826). Regarding kurtosis, all variables have values close to (3), with the information security variable having the lowest kurtosis value of (0.325). Based on the skewness and kurtosis values, the data appears to follow a normal distribution.

4.3. Variance Inflation Factor (VIF) and Variance Test for Study Variables

Table 5 shows the results for the Variance Inflation Factor (VIF) test. The VIF values for all dimensions of the study are < 10, indicating that there is no high multicollinearity among the independent variables. Additionally, the tolerance values for all dimensions are > 0.05, suggesting that there is no high correlation

Table 4: Normal distribution data for study variables

Variable	Skewness	Kurtosis
Trust	-0.455	1.229
Information security	-0.826	0.352
Privacy	-0.622	0.539

Table 5: Results of the multiple correlation test between independent variables

Dimension	Tolerance (Tolerance)	Variance inflation factor (VIF)	Result
Information security	0.729	1.552	No multicollinearity
Trust	0.347	1.433	No multicollinearity
Privacy	0.422	1.329	No multicollinearity

Table 6: Value of R and R-squared

Model	R	R ²	Adjusted R square	Standard error of the estimate
1	0.752	0.565	0.563	0.51777

Table 7: Calculated F value and significance level

F-value	Significance (Sig)	Mean square	Degrees of freedom	Sum of squares
132.992	0.000	66.733	2	200.200
		0.268	246	154.149
				354.350

among the independent dimensions. Therefore, all dimensions can be used in the regression model to determine which of them has a statistically significant effect on the dependent variable.

5. RESULTS OF MULTIPLE REGRESSIONS

Main hypothesis: There is no effect of the quality of financial and banking applications used on smartphones at a significance level ($\alpha \leq 0.05$) on the satisfaction of customers of Jordanian Islamic banks.

The main hypothesis was tested at a significance level ($\alpha \leq 0.05$), and the results are as follows:

- The calculated F value, as shown in Table 7, was $F = 132.992$ with a significance level of 0.0000.0000.000, which is less than the significance level (0.05). This indicates a statistically significant effect of the independent variables on the dependent variable
- According to Table 6, the R value indicates a strong positive correlation between the independent variables and the dependent variable, with $R = 0.752$. This suggests a strong positive relationship among the independent variables: (Information Security, Trust, Privacy) and the dependent variable
- The R-squared value ($R^2 = 0.565$) indicates that the combined independent variables (Information Security, Trust, Privacy) explain approximately 56.5% of the variability in customer satisfaction of Jordanian Islamic banks
- The constant value ($B = 0.306$) is necessary to construct the regression equation, which is formulated as follows:

Based on results listed in Table 8, Customer Satisfaction of Jordanian Islamic Banks = $0.306 + 0.483 \times (\text{Information Security}) + 0.165 \times (\text{Trust}) + 0.322 \times (\text{Privacy})$

Table 8: Multiple regression results

B	Standard error	t	Sig.	Beta
(Constant)	0.306	0.130	2.344	0.019
Information Security	0.483	0.049	9.856	0.000
Trust	0.165	0.054	3.038	0.002
Privacy	0.322	0.068	3.756	0.000

This equation can be used to predict customer satisfaction based on the levels of Information Security, Trust, and Privacy in financial and banking applications.

6. CONCLUSION AND RECOMMENDATIONS

The study's findings indicate that the quality of financial and banking applications used on smartphones, through its dimensions (Information Security, Trust, Privacy), significantly affects the satisfaction of customers of Jordanian Islamic banks at a significance level of $\alpha \leq 0.05$. This result aligns with Abdul Aziz and Sarah (2022), which revealed that mobile banking plays a crucial role in enhancing customer trust in electronic banking services. Similarly, it corresponds with the findings of Tabaiba (2023), which indicated that trust in using smartphones impacts the behavior of customers at Banxy Bank. Furthermore, the study supports the conclusions of Wamai and Kandiri (2017), which demonstrated that smartphone services affect customer satisfaction.

Based on the aforementioned results, the study recommends the following:

- **Adapting to Technological Advancements:** Banks should keep up with modern technological developments in the field of smartphone services and integrate these advancements into all aspects of their operations to enhance the efficiency of smartphone applications and improve service quality
- **Focusing on Quality Factors:** Greater attention should be given to the quality factors related to financial and banking applications, specifically emphasizing Information Security, Trust, Privacy, and Data Protection, as these elements significantly influence customer satisfaction and user experience
- **Conducting Further Research:** There is a need for more research studies regarding the factors that affect the quality of financial and banking applications offered through smartphones in electronic banking services
- **Developing Technological Infrastructure:** It is crucial to provide the necessary technological infrastructure for banking operations, including the development of the telecommunications sector and the services offered through smartphones.

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