



Intelligent System Usability and Customer Satisfaction in Digital Banking: The Mediating Role of User Experience Quality

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ABSTRACT

This research aims to explore the mediating effect of user experience quality between purpose and intelligent system usability and customer satisfaction, and in the specific of the digital banking sector in the Kingdom of Jordan. An online survey method was used to gather data from 248 customers of digital banking services from different financial institutions in Jordan. A model of research was proposed that was tested with mediation analysis using PROCESS Macro Model 4. The theoretical framework of this study is based on the Technology Acceptance Model (TAM) and Expectation-Confirmation Theory (ECT). Based on the results of the research it is determined that ISU has a significant positive effect on user experience quality (UEQ), and UEQ has a positive effect on CS. Furthermore, the mediation analysis shows that the relationship among intelligent system usability (ISU) and customer satisfaction (CS) is significantly mediated by UEQ. This work poses future research indications to explore the multidimensional nature of ISU and UEQ to create more comprehensive models. This framework could be expanded in the future into other digital service areas including ecommerce or financial technology (fintech) on different cultural contexts. For practical purposes, the digital banking managers should focus on the usability of the system, as this will boost the UEQ and ultimately the CS. This study builds upon the current body of knowledge on digital systems and user experience by providing a holistic perspective of the interaction between ISU, UEQ and CS.

Keywords: Intelligent System Usability, User Experience Quality, Customer Satisfaction

JEL Classifications: G2, L86

1. INTRODUCTION

This study falls under the context of the fast-paced digital transformation of the banking industry, and the central role intelligent systems play in service delivery, customer engagement and competitive advantage in emerging markets like Jordan. ISU is the extent to which a digital banking system is perceived as efficient, effective and easy to interact with by users (Annas et al., 2025; Abbas et al., 2024). UEQ is a perception scale that reflects users' emotional, cognitive and functional experiences with digital platforms (Sujanto et al., 2024). In general, CS formed by users' evaluative judgments based on comparing the expected service

performance with the perceived service performance (Candiwan and Annikmah, 2024). The chosen variables are strategically selected because they all reflect how technological systems become perceived value and maintained customer relationships in a digital banking context. The banking world has seen a digital revolution that is unprecedented, with over 75% of bank interactions taking place online (Siregar et al., 2025). The initiatives of financial inclusion by the government and the growth of fintech have contributed to a significant increase in digital banking adoption in Jordan, where the mobile banking uptake rate has risen by more than 40% over the past 5 years (Zainol et al., 2023). Despite this, the customer retention rate is uneven as there are usability

issues and differences in UEQ between platforms (Candiwan and Annikmah, 2024). This underscores the need to explore the impact of ISU on UEQ and ultimately on CS in this regard. The TAM and ECT both offer a solid theoretical basis for this study, which explains how perceived ease of use, usefulness and expectation fulfillment create user behavior and satisfaction (Davis, 1989; Bhattacharjee, 2001; Venkatesh and Bala, 2008).

Although numerous researchers have studied digital banking and intelligent systems, there are still some gaps in research. The relationship between system usability and CS has been largely studied in isolation with little being done to understand the mechanisms that underlie this relationship (Gokah et al., 2025). This leaves a conceptual gap in the understanding of the process-oriented pathway of the user behavior. Although it has the potential of explaining the relationship between technical system features and US, (Frans et al., 2024), UEQ has so far been used as an outcome, rather than a mediating construct. Consequently, little research has been done in digital banking in developing nations like Jordan, and its role as a mediator is still under-studied in digital banking research despite the differences in digital maturity, trust, and user behaviors between the developed and developing world (Chauhan et al., 2022; Nursalamah, 2025). This narrows the scope of generalizability of previous findings because these studies typically use a simple direct effect model, without taking into account mediation pathways that better reflect user perceptions in digital environments (Chen et al., 2021). This means that the explanatory depth in the process of formation of customer satisfaction is reduced. Lastly, not enough integration between TAM and ECT in a single mediation model, especially in cases of intelligent banking systems, where usability needs to be studied before and after the adoption, and thus requires a joint investigation (Lin, 2024; Alghizzawi et al., 2025). This is why the present study is justified.

The study thus aims to overcome these shortcomings by integrating UEQ as the linking variable in a single structure. Furthermore, AI, automation, and personalized recommendation systems have become the new protagonists in digital banking, further emphasizing the role of usability in influencing trust and interaction efficiency (Candiwan and Annikmah, 2024). Varying levels of digital literacy and trust in online financial services (Frans et al., 2024) can lead to greater sensitivity by customers in emerging markets like Jordan on system reliability and interface simplicity. Thus, the UEQ can be seen as a vital psychological and behavioral link, which translates the usability of a system into satisfaction-based results. Furthermore, financial institutions have to offer different services in increasingly competitive fintech markets, where switching costs are low and customers' expectations are rising constantly (Annas et al., 2025). This serves as a reminder that there is a need for a model that integrates both cognitive and emotional reactions of users in a digital service environment.

This study has three objectives: To explore the influence of ISU on UEQ, to explore the relationship between ISU and UEQ, and to explore the mediation role of UEQ between ISU and CS. This study is significant, not only for the theoretical insights into the

phenomenon, but also because of the practical application it offers to digital banks looking to improve customer retention and engagement. The motivation for this study is that the intelligent banking systems are becoming more and more popular and so is the interest in understanding the effectiveness of user-centered design in emerging economies. It is unique in its ability to combine the three dimensions of usability, experience quality and satisfaction under one framework in a mediated manner in the Jordanian context. The results span the fields of both higher education and practice, as they provide empirical insight into service design for digital banking, which could be used to boost customer loyalty and financial service competitive advantage in a fast digitalizing financial ecosystem. This integration plays a crucial role in enhancing customer engagement and fostering sustainable digital banking adoption in Jordan, especially in a rapidly changing financial landscape.

2. THEORETICAL BACKGROUND

Theoretical foundation of this study is mainly based on TAM and ECT since these two theories together explain the user adoption, evaluation and satisfaction of digital banking systems. These theories are selected because they explain the perceptions of pre-adoption and post-adoption behavioral evaluations, which are important for understanding the ISU, the quality of user experience and customer satisfaction in an integrated manner. Davis (1989) has developed a TAM that views user acceptance of technology in terms of perceived usefulness and perceived ease of use, which directly influence perceptions of system usability. The concept of TAM is very relevant in digital banking, where users assess intelligent systems by considering their ease of use and efficiency in carrying out financial activities. TAM has been consistently validated in previous studies conducted in digital service settings, where it was found that usability has a significant impact on user attitudes and behavioral intentions (Armutcu et al., 2025; Siregar et al., 2025). Moreover, TAM has been extensively used in mobile banking and fintech research, proving that the system usability is crucial for understanding the engagement and satisfaction of users (Majeed et al., 2025). Yet, although the TAM model can account for the initial acceptance, it is not sufficient to explain the emotional and experiential aspects of post-adoption acceptance, so it requires the inclusion of other theories. To overcome this drawback, the ECT introduced by Oliver (1980) and extended by Bhattacharjee (2001) is used. According to ECT, satisfaction is the outcome of the confirmation or disconfirmation of a prior expectation following actual system usage. When it comes to digital banking customers, they have expectations on how their systems should behave, and satisfaction is the result when customer experience is at least as good as those expectations. Empirical research has been confirmed that the satisfaction and continuation of usage in online services are greatly affected by the degree of satisfaction of the expectations (Abbas et al., 2024).

Concerning the CS in intelligent banking systems, ECT is relevant to explain the post-adoption evaluation, thereby making it highly valuable to assess CS in intelligent banking systems (Alghizzawi et al., 2025). TAM and ECT together offer a more complete theoretical perspective; the usability perceptions are related to

satisfaction outcomes, which are assessed experientially. Previous studies in digital services have indicated that the integration of acceptance + expectation theory provides added value in digital service studies (Gokah et al., 2025; Zainol et al., 2023). Moreover, recent studies in the context of fintech and mobile banking services have also found that satisfaction is not just a product of usability, but also dependent on constructs related to user experience (Chen et al., 2021). According to this study, UEQ is considered as a mediating construct between system usability and CS. This is based on experience-centric human-computer interaction models which state that usability has an impact on cognitive and emotional assessments of the use of the system (Sujanto et al., 2024). The results of previous studies have validated that UEQ is a significant factor influencing satisfaction and loyalty in digital platforms (Majeed et al., 2025). Furthermore, studies on digital banking have revealed that user experience is vital in turning the functionality of the system into perceived value (Siregar et al., 2025). Overall, this study has a strong and coherent theoretical basis of the combined approach of TAM and ECT with the support of user experience theory. It provides a structured knowledge base for the relationship between ISU and increased UEQ and how this in turn provides high CS. The theoretical framework is well supported by the empirical literature in the fields of digital banking, fintech, and e-services, making it relevant and applicable to the Jordanian banking sector (Abbas et al., 2024; Majeed et al., 2025).

2.1. Intelligent System Usability and User Experience Quality

ISU is at the heart of user experience with digital banking systems, closely tied to the overall effectiveness and usability of the systems and their ability to support users in completing financial transactions. Previous studies have consistently shown that the more usable the system is, the more positive the cognitive evaluations are, and the more smooth the system in use, especially when service is provided through technology (Abbas et al., 2024; Gokah et al., 2025). Users' positive perceptions of their interactions with banking systems are more likely to be built when they feel banking systems are intuitive and responsive. If users feel banking systems are intuitive and responsive, then they are more likely to develop positive perceptions of their interactions with banking systems. Similarly, the human-computer interaction literature also highlights that how usable the system is directly affects their experiential evaluation and their interaction level with it (Alghizzawi et al., 2025). Usability plays a particularly significant role in digital financial services as users demand fast, accurate, and trouble-free transactions and these factors directly influence the users' perception of the financial services. (Gokah et al., 2025) The empirical results of mobile banking and fintech contexts also validate the fact that usability positively impacts perceived interaction quality and cognitive effort when using the system (Chen et al., 2021). In an intelligent banking environment, therefore, usability is not only a technical property, but also an important component of the user's experience of the system, and the basis of more positive experiential results in contexts of digital service provision.

- H_1 : ISU is positively related to UEQ.

2.2. User Experience Quality and Customer Satisfaction

The UEQ is a general assessment of users' cognitive, emotional, and functional experiences in using digital banking systems, which influences the effectiveness of service delivery to satisfy their expectations during and after use. Positive experiential quality has always been linked to greater satisfaction in digital service environments, where users assess services according to the comfort, clarity, and emotional reaction that they get from the interactions with the system (Annas et al., 2025). Seamless navigation, information design and system performance are the factors that can be experienced by the user, which can increase the value of services and produce more positive satisfaction outcomes (Zainol et al., 2023). The findings from the previous empirical research in digital banking and fintech areas also support the impact of improved experiential quality on user satisfaction, thereby lessening uncertainty and boosting trust in the outcomes of the system (Chauhan et al., 2022). Furthermore, the literature suggests that the emotional dimension of the platform's interactions positively affects emotional responses, thereby directly impacting the satisfaction judgment (Siregar et al., 2025). In the mobile and online banking environment, customers who experience high-quality interactions more likely to evaluate their service favorably and to indicate their intentions to continue banking services (Alghizzawi et al., 2025). Therefore, experiential quality is an important psychological and evaluation process in intelligent digital banking environments that influences the US judgments.

- H_2 : UEQ is positively related to CS.

2.3. Mediating Role of User Experience Quality

To understand the relationship between system usability, UEQ and satisfaction it is important to consider a process-oriented approach in which the experiential perceptions are considered as a link between system features and user evaluations. Usability is not the only factor that determines user satisfaction in digital banking environment; rather, it affects satisfaction by how users perceive and emotionally assess their interaction experience. The previous studies in information systems indicate that mediating mechanisms should be introduced to explain the relationship between the technical features of the IS and attitudinal outcomes (Abbas et al., 2024; Alghizzawi et al., 2025). Building on these principles, human-computer interaction literature underscores the user-experience as a psychological pathway that links the performance of a system to the satisfaction outcomes experienced by its users by influencing their cognitive and emotional responses while using the system (Majeed et al., 2025). This logic has also been supported by empirical studies in digital banking where it has been found that usability's influence on satisfaction is an indirect effect through experiential perceptions of ease, enjoyment and perceived value (Zainol et al., 2023). Likewise, research on fintech shows that UEQ is pivotal in improving the quality of interactions with the system into positive service evaluations (Alghizzawi et al., 2025). Furthermore, the studies on mobile banking reveal that the interaction experiences of the users have an indirect effect on their satisfaction, as it needs to be smooth, reliable, and emotionally positive (Armutcu et al., 2025; Annas et al., 2025). Thus, the relationship between usability and satisfaction is better understood

by considering an intervening experiential process that mediates the users' experience and interpretation of digital banking systems. The conceptual model is presented in Figure 1.

- H_3 : UEQ mediates the relationship between ISU and CS.

3. METHODS

3.1. Subjects and Procedures

The above hypotheses were tested by surveying Jordanian users of digital banking services. The questionnaire used is shown at the end of this article. The questionnaire was translated into Arabic and English, and the users of the banks were invited from various cities of Jordan to fill it with a link that was published on social media and online banking forums. The total number of questionnaires to be retrieved was 248 and 52 questionnaires were excluded because they were not complete or appropriate for analyzing. These were the users of digital banking products and services of different financial institutions in Jordan. Due to limited experience with digital banking applications or inconsistent responses from some of the respondents, these responses were omitted to guarantee data reliability and validity to analyze. Thus, these questionnaires were considered as inappropriate for analysis and removed. The data were gathered from April 10 to May 05, 2025.

3.2.1. Intelligent system usability

The scale adapted by Chauhan et al. (2022) was used to measure ISU. It is a 12-item scale comprising of two dimensions – perceived ease of use and perceived usefulness. Perceived ease of use is the users' belief that using the digital banking system is easy, whereas perceived usefulness is the user's belief that using the system increase their banking performance and efficiency. Those who fall within the higher range of this construct can instinctively maneuver digital banking applications and finish financial transactions with ease, without the need for excessive complexity. Questions were phrased using a 5 point Likert scale from 1 = strongly disagree to 5 = strongly agree. This scale was reported to have a Cronbach's alpha reliability coefficient of 0.821 for our data.

3.2.2. User experience quality

The scale used to evaluate UEQ is adapted from Zainol et al.'s (2023) scale and enhanced by literature in HCI. It is a 15-item scale with three dimensions (pragmatic quality, hedonic quality and emotional experience). Pragmatic quality is the aspect of interaction with the system that is aimed at its usability and efficiency, hedonic quality is pleasure and enjoyment in the interaction with the system, while emotional experience is the aspect of the interaction with the system that gives rise to the affective reaction of the user to the digital bank platform. The

participants were asked to answer the questions on a Likert scale of 1-5, from "strongly disagree" to "strongly agree." The Cronbach's α reliability coefficient of the scale for our data was 0.836.

3.2.3. Customer satisfaction

The scale was created by Chen et al. (2021) and used to measure CS. The scale has 10 items related to overall satisfaction, expectation confirmation, and post usage evaluation of the use of digital banking. It measures how satisfied customers are with the extent that their expectations of banking services are met via smart digital solutions. The participants were asked to answer on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). The Cronbach's alpha reliability coefficient of the scale for our data was reported as 0.849.

Based on the conceptual model, the relationship between ISU and CS is mediated by UEQ, mediated relationship is strong when UEQ is high, and weak when UEQ is low. To test the mediation, we used Model 4 of PROCESS developed by Hayes (2013). First, descriptive data for the sample was presented and second the correlation analysis was carried out to test the linear relationship between the variables. SPSS 26 was used to perform these analyses.

4. RESULTS

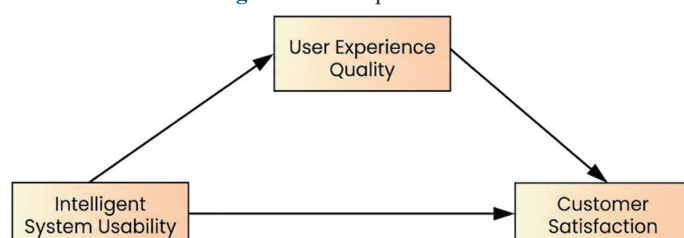
4.1. Descriptive Statistics and Correlations

Some demographic statistics are provided about the sample in Table 1. A total of 131 men (52.8%) and 117 women (47.2%) participated in the survey. Most participants (35.9%) are in the 26-35 age group. Around 47.6% of the participants have a bachelor's degree, while 35.5% have a master's degree. The majority of participants (37.4%) have access to retail banking services and

Table 1: Demographic profile of respondents (n=248)

Demographic variable	Category	Frequency	Percentage
Gender	Male	131	52.8
	Female	117	47.2
Age	18-25 years	55	22.2
	26-35 years	89	35.9
	36-45 years	63	25.4
	46+ years	41	16.5
Education	Bachelor's Degree	118	47.6
	Master's Degree	88	35.5
	PhD/Others	42	16.9
Digital banking usage type	Retail Banking Services	93	37.4
	Mobile Banking Users	57	23.1
	Internet Banking Users	52	21.0
	Fintech App Users	46	18.5
Employment type	Salaried Employees	101	40.7
	Self-employed	78	31.5
	Freelancers/Others	69	27.8
Work experience	0-3 years	95	38.5
	4-6 years	61	24.6
	7+ years	92	36.9
Monthly income (USD)	200-400	65	26.2
	401-700	77	31.2
	701-1000	56	22.6
	1000+	50	20.2

Figure 1: Conceptual model



another 23.1% are intensive users of mobile banking platforms for day-to-day banking activities. The majority of participants (40.7%) are in employment with various organizations and on salary. 38.5% of them have been using digital banking for 0-3 years, while 24.6% have been using it for 4-6 years, 21.8% have been using it for more than 7 years and the rest have been using them for 5-7 years. Monthly income frequency differs according to each category and the highest frequency of monthly income is in the 401-700 USD category (31.2%).

Descriptive data (means and standard deviations) and correlations between ISU, UEQ and CS, along with the demographic variables are provided in Table 2. According to the correlation results, ISU is positively correlated with UEQ ($r = 0.562$, $P < 0.01$) and CS ($r = 0.389$, $P < 0.01$). UEQ is also positively related to CS ($r = 0.521$, $P < 0.01$). Moreover, there is a high correlation between ISU and age ($r = 0.201$, $P < 0.05$). There is significant correlation between education level and UEQ ($r = 0.274$, $P < 0.01$). CS has a significant correlation with age ($r = 0.418$, $P < 0.01$) and digital banking usage experience ($r = 0.336$, $P < 0.01$).

4.2. Regression Analysis

Table 3 reports the results of the regression analysis performed with PROCESS model type 4. Both models are significant and provide

an acceptable fit based on R^2 values ($R^2 = 0.312$, $P < 0.001$ and $R^2 = 0.278$, $P < 0.001$). The first model shows that ISU explains 31.2% of the change in UEQ. The second model shows that ISU and UEQ together explain 27.8% of the change in CS.

4.3. Mediation Analysis

Table 4 shows the direct and indirect effects of the mediation analysis. Each section will be analyzed individually.

4.3.1. Direct effects

The first half of the Table 4 shows effect of ISU on UEQ. The direct effect of ISU on UEQ is positive and significant ($\beta = 0.589$, $P < 0.001$), thus supporting H_1 . The direct effect of UEQ on CS is positive and significant as well ($\beta = 0.476$, $P < 0.001$) and confirms H_2 . However, the direct effect of ISU on CS is not significant ($\beta = 0.162$, $P > 0.088$). This coefficient is the first indication of mediation, which is to be further explored besides the overall effects of ISU on CS. The direct effects studied in the proposed model are presented in Figure 2.

4.3.2. Indirect effect

The results of the mediation analysis show that ISU has an indirect effect on CS ($\beta = 0.296$) and this effect is significant (bootstrapped 95% confidence interval LLCI = 0.168 and ULCI = 0.462 does not

Table 2: Descriptive statistics and associated measures

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
ISU	4.102	0.428	1									
UEQ	3.894	0.451	0.562**	1								
CS	3.678	0.506	0.389**	0.521**	1							
Gender	1.47	0.500	0.132	0.084	0.101	1						
Age	2.18	1.012	0.201*	0.176	0.418**	-0.087	1					
Education	3.09	0.867	0.143	0.274**	-0.062	0.149	0.118	1				
Usage Type	2.76	1.692	-0.095	-0.071	-0.084	-0.241**	-0.198**	-0.552**	1			
Position	2.58	1.241	0.176*	-0.041	0.019	0.052	0.071	0.221**	-0.069	1		
Experience	2.29	1.176	0.008	0.141	0.336**	-0.131	0.702**	-0.018	0.041	0.155	1	
Income	2.91	1.342	0.129	0.118	0.139	-0.074	0.251**	0.058	0.046	0.138	0.402**	1

ISU: Intelligent system usability, UEQ: User experience quality, CS: Customer satisfaction. $P < 0.05$, ** $P < 0.01$

Table 3: Model summaries for regression analyses (PROCESS model type 4)

Outcome	R	R ²	MSE	F	df1	df2	P-value
UEQ	0.559	0.312	0.138	62.418	1.000	145.000	<0.001
CS	0.527	0.278	0.201	27.944	2.000	144.000	<0.001

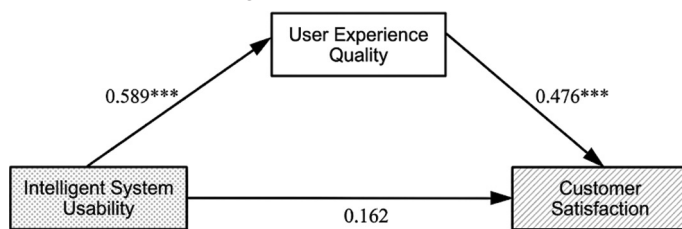
ISU: Intelligent system usability, UEQ: User experience quality, CS: Customer satisfaction

Table 4: Results of mediation analysis on customer satisfaction

Direct effect on UEQ	Coefficient	SE	t-value	P-value	LLCI	ULCI
ISU	0.589	0.078	7.551	0.001	0.437	0.741
Direct effects on CS	Coefficient	SE	t-value	P-value	LLCI	ULCI
ISU	0.162	0.097	1.666	0.088	-0.027	0.351
UEQ	0.476	0.093	5.118	0.001	0.292	0.660
Indirect effects on CS	Effect	BootSE	Significance		BootLLCI	BootULCI
ISU→CS	0.296	0.076	Sig		0.168	0.462
Total effect of ISU on CS	Effect	SE	t-value	P-value	LLCI	ULCI
Total effect	0.458	0.094	4.872	0.001	0.273	0.643

ISU: Intelligent system usability, UEQ: User experience quality, CS: Customer satisfaction. Bootstrapped standard errors and 95% confidence intervals are based on 5,000 replicates. Intercepts are omitted in the Table 4

Figure 2: Results of the hypothesized mediation model. Level of significance: *** $P < 0.01$



include zero), supporting the H_3 . Finally, ISU has a positive and significant overall effect on CS ($\beta = 0.458$, $P < 0.001$).

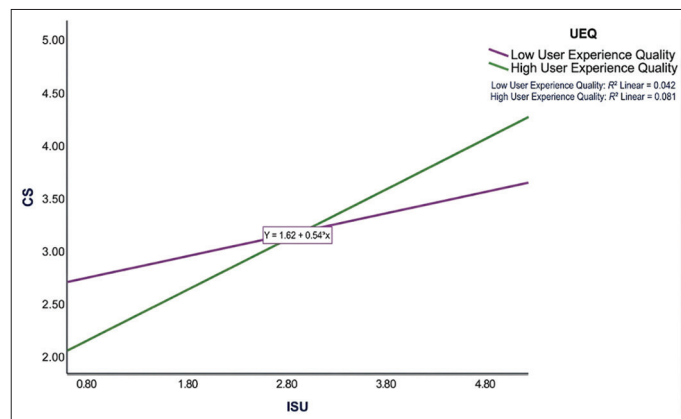
In Figure 3, we have shown the interaction between the variables. The UEQ was converted into a categorical variable, where 1 was low UEQ and 2 was high UEQ. The lower the ISU, the lower are the UEQ and CS of users and vice versa.

5. DISCUSSION

This study's results offer robust empirical evidence of the relationships between ISU, UEQ, and CS in the context of digital banking services in Jordan. In conclusion, the results corroborate a structured progression in which usability is used as a first technology, and UEQ as a psychological and experiential mechanism towards CS. This aligns with the acceptance and post-adoption theories that assert that the perception and confirmation of the user influence the result of their actions in digital environments (Chauhan et al., 2022; Lin, 2024). The first key finding indicated that ISU has significant impact on improving UEQ. The finding aligns with previous studies that have indicated that ease of use and perceived usefulness are vital factors in user interactions with digital systems (Majeed et al., 2025; Abbas et al., 2024). These findings are also aligning with previous studies on mobile banking, which show that usability plays a crucial role in the perceived quality of interaction and engagement experienced by users (Siregar et al., 2025). Similar studies cited in the literature of human-computer interaction confirm this link: The simplicity of the system's design and its functionality directly affect the emotional and practical experiences of users (Chen et al., 2021; Alghizzawi et al., 2025).

The results, however, are different from some of the previous research that has defined usability as a purely technical concept, as it brings a wider experiential aspect of usability into affective user perception domains (Gokah et al., 2025). The second finding signified that UEQ has a significant positive effect on CS. This is in harmony with previous empirical research conducted in digital service and fintech contexts, which has found experiential quality to be a key factor in satisfaction outcomes (Lin, 2024; Annas et al., 2025). This connection is also supported by research in the field of mobile banking, which shows that when users have a better, more enjoyable, and more positive experience of banking, they are more satisfied with their experience (Chen et al., 2021). Moreover, research based on the service quality theory highlights that perceived service experience is a significant driver of satisfaction, and this is not solely dependent on the service features

Figure 3: Grouped scatter of ISU by UEQ by CS



(Majeed et al., 2025; Frans et al., 2024). This study supports these arguments with the findings that experiential quality is to a large extent a predictor of satisfaction in digital banking systems. One of the most significant findings is that there is no significant direct impact of the usability of intelligent systems on CS. This finding partly challenges the findings of previous studies which found a direct relationship between usability and satisfaction (Lin, 2024). But, it aligns with the later studies that claimed that usability does not directly affect satisfaction, unless it is being mediated by experiential or emotional factors (Siregar et al., 2025; Abbas et al., 2024). This change represents a change in the nature of digital banking; users no longer just need to be efficient; they want their digital banking experience to be meaningful and engaging.

The most important implication from the findings is that it is confirmed that the quality of user experience plays a mediating role between usability and satisfaction. This is a theoretical link between TAM and ECT, which states that perception of the system results in evaluation from experience and finally satisfaction (Chen et al., 2021). The concept of the mediation effect was previously experienced in other studies, but the number of studies and the scope of their application were limited, especially in the field of fintech and mobile banking (Candiwan and Annikmah, 2024). The findings also corroborate studies focusing on experiential constructs as psychological bridges between usability and emotional and cognitive satisfaction in digital systems (Alghizzawi et al., 2025). In addition, research from developing countries has pointed to the role mediation as a result of different levels of digital literacy and trust (Abbas et al., 2024).

The results overall indicate that in the Jordanian digital banking environment, usability is not a direct determinant of CS, but rather it is through the experiential quality created while interacting with the system. This maps onto a wider shift in digital service environments where emotional and cognitive user assessments have come to play an important role in determining satisfaction (Majeed et al., 2025). The results are consistent with previous literature, which further enhances their validity, and the differences show the contextual distinctiveness of the emerging digital banking systems.

5.1. Theoretical Contributions

This study's theoretical contributions are quite remarkable, as it merges the TAM and the ECT into a single mediation process,

and introduces the notion of intelligent system usability operating through experiential processes as well as direct impact on behavioral perceptions. The paper enriches the digital banking literature by reinforcing that the effects of usability are mediated, in contrast to previous TAM-ECT integrations that mostly focus on cognitive acceptance constructs, and further reveals that satisfaction in digital banking is mediated by experiential evaluation constructs in addition to usability constructs. Last but not least, the study contributes to the theory by establishing the model framework in the context of developing countries, moving TAM and ECT beyond western and advanced economies. As a whole, this study contributes to the theoretical discussion on a psychological process, namely user experience, that appear to bridge the gap between usability and satisfaction.

5.2. Practical Implications

The findings of this study have significant ramifications for digital banking institutions, fintech developers, and policy makers. One, the results suggest that improvements in ISU are critical, but not enough—banks need to make sure that the improvements in ISU also positively affect their CS in order to gain higher CS. Based on the results, it is recommended that the banking institutions in Jordan place emphasis on emotional and experiential elements of the bank interface such as personalization, responsiveness and features for user engagement, as these are key drivers in shaping overall user experience satisfaction outcomes, in addition to investing in the development of intuitive interface design and streamlined navigation processes. It is also recommended that financial institutions in Jordan establish continuous user feedback systems to track the quality of the user experience in real-time as the user experience is found to be experience-driven. Lastly, there is a need for digital literacy programs that strengthen the users' ability to interact with intelligent systems and boost the quality of digital bank user experience and trust. Together, these all point us in the direction of an approach to digital banking that is centered on users.

6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The present study examined the relationships between ISU, UEQ and CS in the context of digital banking services provided in Jordan. The study built and validated a mediation model which accounted for the relationship between usability and satisfaction via the user experience quality, grounded on TAM and ECT. The results validate that ISU has a significant positive impact on UEQ, in turn positively impacting CS. The direct contribution of usability to satisfaction, however, was not found to be significant, and thus the role of usability as a critical mediator in this relationship was highlighted. This is a testament to the fact that satisfaction in digital banking is not just about the usability of the system but also a reflection of the user experience and emotions that are created as people interact with the system. This study enriches the existing literature by bringing together the theories of acceptance and the theories of expectation into a single framework and by the focus on experiential aspects of quality in digital service contexts. It also broadens the knowledge of digital banking behaviour in the

context of developing economies, specifically Jordan where digital transformation is a rapidly changing landscape.

In practice, the results indicate that the banking institutions need to go beyond system improvements and look towards improving customer satisfaction by focusing on the user experience. Finally, this study demonstrates that usability is only one aspect of intelligent system design, but also that satisfaction-creating meaningful user experiences. Digital banking systems aim to increase user engagement and foster long-term success by connecting the technological functionality with the user-centric experience, in an increasingly competitive financial landscape.

Although this study offers contribution, there are also some limitations of the study and thus it opens room for future research. This study is of cross sectional research design which will not be able to capture the changes of user perceptions over time. The method used in collecting data is self-reported, which could lead to common method bias and subjective interpretation. Further studies are needed to elucidate the changes in usability and experience over time with extended use of the system. The study is limited to the digital banking sector in Jordan this may not be generalizable to different cultural and economic settings. While the model includes one mediating variable, further research might include other constructs like trust, perceived risk or technology anxiety to create a broader framework. Lastly, demographic variables were not extensively explored as moderators; future studies could explore how the age, digital literacy, and experience variables affect the proposed relationships. These instructions would enhance the theoretical strength and contextual relevance.

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