The impact of electronic banking services on the use of technology by customers of conventional and Islamic banks in Jordan

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CHRONICLE	ABSTRACT
	The aim of this study was to examine and determine the impact of electronic banking services on the use of technology by customers of conventional and Islamic banks in Jordan. For the current study, a random sample of 580 customers in Jordanian conventional and Islamic banks was selected using the quantitative research methodology, and in order to gather the necessary data, the study employed a survey questionnaire instrument that was developed based on the earlier relevant literature and studies. The results of this study showed that perceived ease of use (PEU), perceived utility (PU), simplicity of use (SU), and social influence (SI) all significantly affected the use of technology in Jordanian conventional and Islamic banks.

1. Introduction

The Internet and current technological advancements can allow banks to stay ahead of the competition, with a focus on the quality of e-banking services and client contact points (Al-Hattami et al., 2021). People may now learn about events happening across the world in real-time thanks to technological improvements. Over the past few years, technology's rapid advancement has had an impact on virtually every industry, including banking services (Arshad Khan & Alhumoudi, 2022). By giving more comfortable banking services in established nations and new services to under-banked and unbanked persons in emerging areas, fintech has revolutionized the international financial and banking sector (Namahoot & Jantasri 2022). However, since their goods and services are very identical, the best way for banks and financial services to achieve a competitive edge is via the quality of services given to the consumers. High-quality service has been found to increase customer satisfaction and their propensity to return by lowering the perceived risk (Albort-Morant et al., 2022; Almatarneh et al., 2022). Where banks play a significant role in a country's economic growth, banks are undergoing rapid transformation as a result of the market's ongoing innovation and growing usage of electronic services (Rahi et al., 2019). Therefore, in the world of fintech, the effort required to use a service is a consideration related to ease of usage, complexity, simplicity, and how simple it is to understand (Al-Zaqeba et al., 2022). Additionally, an easy-to-use banking service will encourage personal clients to embrace this technology (Pham et al., 2022). When a client perceives new technology as being SU, the probability that they will adopt a banking

service is significantly increased. Despite the potential advantages that Internet banking may provide customers (Kusumawati & Rinaldi, 2020). It is important for banks and users to comprehend the key factors of Internet banking adoption. Many financial institutions in Jordan launched mobile banking as a service as a result of technological development. It simplified banking for the general public and increased geographic coverage within the area (Sarfaraz, 2017).

2. Literature Review

That the era of international economic integration, the growth of technology-based financial services is a necessary and objective development, as a result, the way banks approach offering simple, dependable, and fast services to customers has changed as a consequence of the use of technology and the internet to generate new products (Pham et al., 2022). The number of fintech companies is gradually increasing in Jordan, despite the reality that the initiative is still relatively new. Financial technology significantly affects the banking industry (Alsmadi et al., 2022). Customers' confidence, PEU, and customer creation in fintech services have a significance on their attitude toward adoption and intention to use the fintech platform, according to Shahzad et al., (2022), but perceived usefulness had little effect on adoption attitudes or behavioral intentions to use the technology. As a result, Jordanian banks have begun to voice worries about the cheap adoption rate of creative channels and cast doubt on their viability, especially given the enormous resources spent on them (Alsmadi et al., 2022).

Due to this, Internet banking is now thought to have both benefits and drawbacks. Islamic banks must provide online banking options since clients don't want to utilize this technology (Jarah et al., 2023 and Al-Jarrah et al., 2023). Instead, they must continue providing their services in person and absorb the associated operational and personnel costs (Hung et al., 2010). Information and transmission technology has been one of the main foundations supporting human welfare during the past two decades (Peral-Peral et al., 2020). For Islamic banks, technology has become an essential instrument for increasing output, profitability, operational management, and efficiency (Jarah et al., 2022). Customers may now realize their goal of banking at any time, any place. Internet banking can, at its most fundamental level, refer to a bank creating a web page to supply details about its offerings (Rahi et al., 2018). According to the research by Sarfaraz (2017), m-banking firms should concentrate on improving the functionality, security, and usability of the mobile banking system.

As the number of internet users increases globally and its advantages become more apparent, online banking is gaining attention (Foon & Fah, 2011). According to Ghalandari (2012), consumers' behavior and desire to utilize e-banking services were significantly and favourably impacted by performance expectation, effort expectancy, SI, and enabling factors. The use of technology has made digital banking the latest technology in banking. One smartphone app can handle all of your banking needs; an offline branch is not even offered (Kusumawati & Rinaldi, 2020). According to Alkhowaiter's (2022) and Upadhyay et al., (2022), findings facilitating conditions and performance expectancy are factors that structure the dependent variables. It has been found that behavioral intention and usage are closely related to trust. The connection between behavioral intentions to utilize m-payments has also been shown to be favorably moderated by Islamic beliefs. According to the findings of Peral-Peral et al. (2020), there are significant disparities in self-efficacy has a beneficial impact on how useful and effective online banking is judged to be. Therefore, the researchers have even used TAM in consumer acceptability studies in online environments, such as mobile internet services, while the initial goal of the Technology Acceptance Model was to imitate the usage of technology in simulated situations (Fedorko et al., 2021). The use of the technology model was originally designed to replicate the usage of technology in simulated situations (2021). According to Hossain et al., (2021) research, client loyalty and service satisfaction are significantly influenced by service fairness and quality. Customer loyalty is significantly impacted by SI impact, although service satisfaction is unaffected. According to Abdul-Rahim et al., (2022), perceived advantages have a substantial impact on fintech adoption, while perceived risk does not, and fintech adoption has a big impact on sustainability. The study by Mindra et al. (2022) demonstrates that attitude and desire to adopt Islamic banking are closely related; the price of traditional bank products and SI both control and reinforce this relationship. According to Anggraeni et al. (2021), habit is the primary factor in influencing behavioral intention and use behavior, and SI.

E-banking is a method that banks and other financial service providers are increasingly using to offer their services (Wang et al., 2017). Using technology for secure and useful services, the bank aims to provide the convenience of service. Additionally, the bank offers ease of service in terms of adaptability, effectiveness, and simplicity (Usman et al., 2020). According to Al-Sharafi et al. (2017), the perceived usefulness of online banking enhances user trust, while PEU is unable to predict Jordanians' willingness to accept and utilize banking. Mutahar et al. (2018) observed that self-efficacy had a significance on PU and PEU. Furthermore, the SU and utility of technology have a direct influence on the intention to utilize technology. According to Andavara et al., (2021), findings PU and perceived usefulness of using both have a large direct effect on the attitude to use technology; additionally, PEU has a strong indirect influence on mobile payment system intention through the mediating component, perceived usefulness. According to Nugroho and Apriliana (2022), PU and convenience of use affected the desire to utilize Go-Pay. Rezvani et al., (2022) discovered that PEU had a significance on perceived usefulness, user happiness, and application usage behavioral intention. Sathar et al., (2022) revealed that PU and PEU are related to customers' propensity to utilize banking. According to Almaiah et al., (2022), SI, perceived risk, and SI, all have a beneficial impact on satisfaction with the safety of near-field communication electronic payment. Furthermore, Namahoot and Rattanawiboonsom (2022) revealed that perceived usefulness, PEU, attitude, perceived risk, and bitcoin platform acceptability all had a significant influence. The findings of the study by Saleem et al., (2022) and Shanmugam et al., (2014) revealed that an augmented actuality app directly affects perceived usefulness, PEU, and perceived enjoyment. Prastiawan et al., (2021) discovered that PU, PEU,

and SI had both direct and indirect effects on mobile banking usage via attitude toward use as a mediator. The findings of Kumar and Krishnan (2020) indicated that the independent factors had a strong association and impact on the intention to use.

To enable the effective adoption of e-banking services, thorough, engaging, and informative actions should be accomplished to increase users' understanding of these benefits, and e-banking services should be developed in such a way that users encounter no problems when utilizing such services (Mufarih et al., 2020). According to Patel and Patel (2018), perceived security has a heightened effect on the intention to use online banking, followed by perceived value, PEU, and SI. Singh et al. (2020) observed that SU, usefulness, perceived risk, and attitude all had an impact on user intention and that stress to use and SI had a moderating effect on users' subjective satisfaction and endorsement of money services. Fedorko et al. (2021) discovered that the influence of PEU on behavioral intent and usage is inconsistent with the capacity of system sophistication. According to the findings of Susanto et al. (2016), consumers' confirmation following the first usage of smartphone banking benefits has a substantial influence on perceived safety, and PU, the most important component in the results of Martins et al., (2014) that explain Internet banking usage behavior intention. The findings of Usman et al., (2020) have substantial importance for the promotion of use intention behavior through the adoption of technology by bank e-banking consumers. Rahi et al., (2021) discovered that the recently established integrated technology continuation study model has significant predictive value for Internet banking user continuation intention.

3. Methodology

The aim of the current study is to determine the impact of electronic banking services on the use of technology by customers of conventional and Islamic banks in Jordan. Currently, both conventional and Islamic banks in Jordan are included in the research population. The researchers devised a standardized table to determine the study sample size. For the current study, a random sample of 580 customers in Jordanian conventional and Islamic banks was selected using the quantitative research methodology. The independent variable was measured using four constructs based on the literature: Perceived Ease of Use (Andavara et al., 2021; Nugroho & Apriliana, 2022; Namahoot & Rattanawiboonsom, 2022), Perceived Utility (Prastiawan et al., 2021; Patel & Patel, 2018), Simplicity of Use (Sathar et al., 2022; Namahoot & Rattanawiboonsom, 2022; Singh et al., 2020), and Social Influence (Ghalandari, 2012; Prastiawan et al., 2021; Mindra et al., 2022, Anggraeni et al., 2021; Almaiah et al., 2022; Singh et al., 2020), while the dependent variable Use of Technology, measured based on (Mutahar et al., 2018; Andavara et al., 2021; Usman et al., 2020; Rahi et al., (2021).

The following is a summary of the hypotheses:

H₁: *Perceived Ease of Use has a significant effect on the Use of Technology.*

H₂: *Perceived Utility has a significant effect on the Use of Technology.*

H₃: *Simplicity of Use has a significant effect on the Use of Technology.*

H₄: *Social Influence has a significant effect on the Use of Technology.*

The study was interested in acquiring the required number of responses from a diverse sample of customers in Jordanian conventional and Islamic banks in order to accurately depict the target audience. The study used a survey questionnaire instrument built based on previous relevant literature and studies to collect the essential data. A five-point scale from strongly agree to strongly disagree was used so that respondents could easily pick the proper response. The current study sought to explore two commonly used models, the measurement model and the structural model, which are frequently used to assess the validity of research models and hypotheses (Hair et al., 2019). Another reason for doing this research is the approach's capacity to give significant tests for the model with crucial elements such as the bootstrapping procedure for research hypothesis evaluation.

4. Theoretical Framework
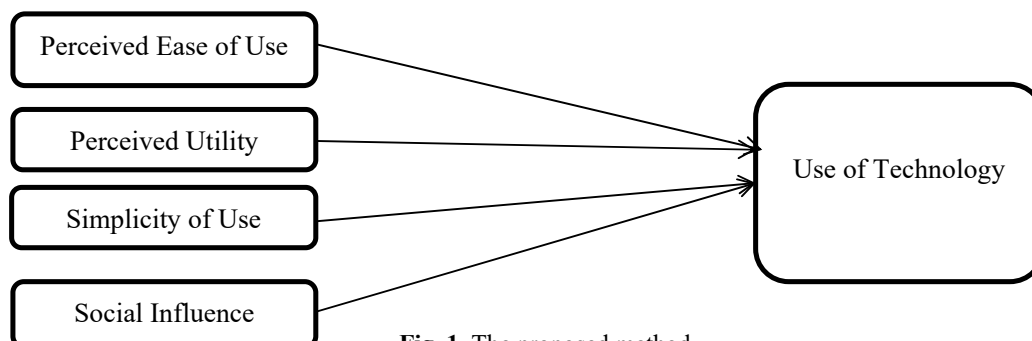
Fig. 1 presents the structure of the proposed study.

Fig. 1. The proposed method

5. Results

The study was carried out in two steps: first, the measurement model was used to assess the validity and reliability of the created variable, and then the structural model was used to examine the hypotheses. Table 1 summarizes the measurement model outcomes.

Table 1
Results of the Measurement Model Assessment

Variables	Items	Mean	S.D	Cronbach's	CR	AVE
PEU	PEU1	3.87	0.73	0.824	0.791	0.652
	PEU2	3.91	0.60			
	PEU3	3.93	0.89			
	PEU4	3.82	0.81			
	PEU5	3.80	0.92			
	PEU6	3.73	0.94			
PU	PU1	3.69	0.82	0.848	0.804	0.521
	PU2	3.76	0.83			
	PU3	3.89	0.63			
	PU4	3.78	0.92			
	PU5	3.81	0.81			
	PU6	3.91	0.52			
SU	SU1	3.86	0.73	0.892	0.907	0.608
	SU2	3.88	0.66			
	SU3	3.80	0.90			
	SU4	3.82	0.80			
	SU5	3.90	0.88			
	SU6	3.73	0.93			
SI	SI1	3.78	0.82	0.819	0.775	0.702
	SI2	3.76	0.81			
	SI3	3.79	0.65			
	SI4	3.96	0.75			
	SI5	3.70	0.93			
	SI6	3.80	0.90			
UT	UT1	3.82	0.80	0.876	0.808	0.607
	UT2	3.92	0.54			
	UT3	3.86	0.73			
	UT4	3.88	0.66			
	UT5	3.80	0.90			
	UT6	3.82	0.80			
	UT7	3.92	0.88			
	UT8	3.72	0.93			
	UT9	3.76	0.82			
	UT10	3.82	0.64			

The mean values of the six indicators used to measure PEU ranged from 3.73 to 3.93. The same six indications that were used to gauge PU were also employed, and the resulting mean values ranged from 3.69 to 3.89. Meanwhile, six factors with mean values ranging from 3.73 to 3.90 were used to evaluate the SU. The six SI measures were also employed, and the resulting mean values ranged from 3.70 to 3.96. The dependent variable, the use of technology, was evaluated using ten indicators, with mean values ranging from 3.72 to 3.92. In this study, a number of common tests that have been published in the literature and often utilized were employed. In this study, the factor loadings for the items are shown first to demonstrate their validity. The factor loading values should be larger than 0.7 to obtain strong indication validity, but the lowest acceptable value was (0.4), and any indications with a factor loading below 0.4 should be removed. Additional reliability and validity measures were Cronbach's alpha, AVE, and composite reliability (CR). The results of this investigation, which were positive and surpassed the low cut-offs (AVE>0.50), CR >0.70, and Cronbach's alpha >0.7), are shown in Table 1. The measuring model's findings supported every assumption and established the constructs' reliability and validity (Afthanorhan et al., 2020). Pearson's correlation indicates that there is a statistically significant association between PEU and UT at the significance level of (0.05), with Pearson Correlation reaching (0.871). Pearson Correlation reaches (0.000) at the significance level (0.05), indicating a substantial positive association between PU and UT (0.838). Pearson Correlation reaches (0.000) at the significance level (0.05), indicating a substantial positive association between SU and UT (0.837). As demonstrated in Table 2, there is a substantial positive connection between SI and UT, with Pearson Correlation reaching (0.745), which is significant (0.000).

Table 2
Pearson Correlation between Variables

Variables	PEU	PU	SU	SI	UT
PEU	-	0.746**	0.732**	0.874**	0.871**
PU		-	0.751**	0.726**	0.838**
SU			-	0.780**	0.837**
SI				-	0.745**
UT					-

*($\alpha \leq 0.05$)   ** ($\alpha \leq 0.00$)

The Kolmogorov-Smirnov Z test was used to determine if dependent and independent variables' distributions were normal and whether their curves were normal. (Z) As shown in Table 3, each variable's value is below the cutoff value (1.96), demonstrating that the data is distributed regularly.

Table 3
The Normal Distribution of the Variables of the study

Variables	Positive trend	Negative trend	Kolmogorov-Smirnov Z	Sig.
PEU	0.141	-0.132	1.781	0.02
PU	0.156	-0.187	1.212	0.03
SU	0.142	-0.114	1.485	0.05
SI	0.139	-0.168	1.362	0.01
UT	0.161	-0.155	1.810	0.01

Table 4
Hypotheses Testing

	Path Hypotheses	Path Coefficient	T	P	Decision
H1	Perceived Ease of Use → Use of Technology	0.601	5.507	0.000	Supported
H2	Perceived Utility → Use of Technology	0.506	5.901	0.000	Supported
H3	Simplicity of Use → Use of Technology	0.408	6.308	0.000	Supported
H4	Social Influence → Use of Technology	0.503	4.418	0.000	Supported

The association between electronic banking services and technology used by customers of conventional and Islamic banks in Jordan was investigated using the bootstrapping approach. The path coefficients, T-value, and p-value are the most often encountered outcomes in the structural model to comprehend the significance levels (Hair et al., 2017). PEU, PU, SU, and SI all significantly influenced the use of technology in Jordanian conventional and Islamic banks, according to the results of the direct effects shown in Table 3 (p≤0.05).

6. Discussion and Conclusions

The development of technology has made digital banking a new technology in banking (Kusumawati & Rinaldi, 2020). Additionally, the study by Upadhyay et al., (2022), found that attitude has an impact on attitude to use; attitude to use has an impact on intention to use, and performance expectancy. According to Abdul-Rahim et al., (2022), perceived advantages have a substantial impact on fintech adoption, while perceived risk does not, and FinTech adoption has a big impact on sustainability. According to the findings of the researchers Andavara et al., (2021), PU and perceived usefulness of using both have a large direct effect on the Attitude to Use Technology mobile payment. Rezvani et al., (2022) discovered that PEU had a significance on perceived usefulness, user happiness, and application usage behavioral intention. Furthermore, Sathar et al., (2022), Namahoot and Rattanawiboonsom (2022), Patel and Patel (2018), Saleem et al., (2022), Singh et al. (2020), Almaiah et al., (2022), Shanmugam et al., (2014) and Prastiawan et al., (2021) discovered that PU, PEU, and SI had both direct and indirect effects on mobile banking usage via attitude toward use. Therefore, the aim of this study was to examine and determine the impact of electronic banking services (including PEU, PU, SU and SI) on the use of technology by customers of conventional and Islamic banks in Jordan. For the current study, a random sample of 580 customers in Jordanian conventional and Islamic banks was selected using the quantitative research methodology. The results of this study showed that PEU, PU, SU, and SI all significantly affected the use of technology in Jordanian conventional and Islamic banks at the level (p≤0.05).

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