Factors Impacting E-Banking Adoption in Iraq

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Abstract

This research aims to examine factors impacting e-banking adoption in Iraq. The instrument for this study was adapted from literature, and validity was assessed through convergent and discriminant validity measures. A total of 350 questionnaires were distributed among consumers with a bank account, 285 respondents returned the filled questionnaires, and only 250 were used for analysis, with a response rate of 71.4%. Analysis showed that 63percent of the respondents were males, 70percent the majority of the respondents belonged to an age group of 18-25 years, 55percent held a bachelor's degree, and 56percent of the respondents were employees with more than six years of experience 45percent. The results for direct relationships reported a positive and significant impact on trust, privacy, and reliability of e-banking adoption. On the other hand, complexity showed a negative and significant impact on e-banking adoption, suggesting that an increase in complexity will reduce e-banking adoption. Lastly, awareness reported an insignificant impact on e-banking adoption.

Disciplinary: Marketing.

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1 Introduction

Past studies such as Din et al. (2017 & 2020) and King and Levine (1995) established that a well-developed financial sector might positively contribute to the economy through encouraging entrepreneurial activities, promoting commerce and trade, efficient risk pricing, pooling of resources, encourage savings and channelizing it to investments, improving marginal productivity of capital, and promoting innovation (Din et al., 2017). Literature reported that either demand or supply factors might influence banking sector development in the economy (Levine, 1997; Sarker et al., 2020). Authors like Samuel-Hope et al. (2022) claimed that supply leading factors (i.e., offering

new financial products and utilizing innovative distribution channels, etc.) might significantly help in financial deepening and economic growth.

In the last couple of years, competition in the banking industry has changed drastically; banks faced fierce competition for market share. Market share is one of the critical parameters for a bank's survival, growth, and profitability (Carranza et al., 2021). High market share may help banks in better management, improved and innovative services, market power, and economies of scale, which leads to higher profits and return on investment. The literature identified that forming joint ventures (Zahra & Garvis, 2000), customer retention (Stahl et al., 2012), brand creditability and extension (Sweeney & Swait, 2008), and customer satisfaction (Athanassopoulos et al., 2001) could influence market share. Factors like innovative and improved services and products, convenience, and competitive prices could play a vital role in deciding market share for the banking industry. Banks may utilize information and communication technologies (ICT) for various activities to prove services meet financial regulatory requirements. Advanced ICT might help banks enhance their service quality through innovative channels like electronic banking (e-banking hereafter) and its components, consequently increasing market share. The development in the field of ICT, on the one hand, has brought about a revolution in every field of life, including the banking sector. On the other hand, it also led to a gradual increase in competition (Helgadóttir, 2016). As a result of these technological developments, banks were able to face challenges, keep pace with development, and exploit technology to their advantage to satisfy customers by competing in providing the best services and facilities and reducing operating costs (Levine, 1997; Loayza & Ranciere, 2006).

Past studies such as Carranza et al. (2021), Jarrett (2015), Mousa et al. (2021), and Yap et al. (2010) argued that massive usage of electronic gadgets, ICT technologies, and the internet had captured the attention of researchers. Many companies have used ICT to communicate with customers, reduce costs, improve service quality, or offer new services. Due to the massive technological development in the mobile industry in the past decade, banking services have adopted this field and used it in the development of the banking industry. More than two billion people out of the world's population use mobile phones, as phones affect a person's life and thus affect the economic aspect, especially in developed countries. The use of mobile banking services facilitates electronic payments and commercial transactions. Mobile banking is closely associated with e-commerce. More precisely, mobile banking services have a significant impact on the development of countries' economies, as well as increasing the welfare of people in that country, and the country's economic stability contributes to the development of that country. This is particularly true for the Middle East and North Africa (MENA) countries like Iran, Libya, Syria, Yemen and Iraq, as these countries are slowly emerging from a massive economic strain due to war conflict in the past few years, and they are trying to regain the economic and political stability of their countries. Over the last ten years, the financial industry in Iraq has undergone considerable disruption because of the US invasion, civil war, ISIS emergence, and oil-related financial crisis (Abed, Ibrahim & Ahmed, 2018), resulting in changes in consumer behaviour, the development of

emerging technology, and the introduction of new goods and services to consumers (Baptista & Oliveira, 2016; Malaquias & Hwang, 2016). Therefore, clear comprehension and practical guidance of customers' intention to adopt e-banking in Iraq are still lacking.

2 Literature Review

Jamshidi and Kazemi (2020) stated that the diffusion of innovation (DOI) theory could explain consumers' adoption (rejection) of innovative products/services. DOI may have staged such as initiation and implementation (Bananuka et al., 2020). The new technology, product, service, or idea will be proposed, developed, and recognized in the first instance. In the second stage, consumers will have a chance to adopt or reject the innovative product, service, idea, or technology. Although e-banking is not new to the world, it could be considered a new and innovative service offered to the Iraqis; hence, the DOI framework could be used to support this study. Past studies such as Ali et al. (2019) and Din et al. (2019) argued that product characteristics such as complexity (level of understanding), reliability (consistently and accurately meeting customer's needs), awareness (knowledge and ability to use), trust and privacy risks could have a significant impact on service adoption.

US invasion coupled with ISIS emergence, sectarian war, weak infrastructure, and shortages of skills and technology were the challenges that Iraqis have faced during the past few years, which have impacted every field of life, including the financial sector (The World Bank, 2012; Abed et al., 2018). Internet coupled with ICT opened new horizons for banking sector development and helped customers enjoy innovative and improved banking services virtually. Even though approximately 92% of Iraqis have mobile subscriptions, and 60% of them have access to the internet (World Bank, 2022). Since mobile phones have become available to most Iraqis, integrating banking services with mobile devices through modern mobile applications and websites may provide a competitive advantage to banks. However, the e-banking penetration rate remained low and is still in the adoption phase (Mousa et al., 2021). For instance, Iraq Economic Monitor (2019) reported that only 23% of adult Iraqis have a bank account, and 47.6% utilize electronic banking services. Even though e-banking enhances market share, it obtains a competitive advantage and customer satisfaction. However, customers' unwillingness, data privacy and security issues, lack of awareness, and under-developed infrastructure were the key obstacles to implementing e-banking services, especially in Iraq. Past studies such as Allgood and Walstad (2016), Chaimaa et al. (2021), and Jamshidi and Kazemi (2020) found that lack of awareness may negatively influence product/service adoption.

H1: lack of awareness (knowledge & Skill) may have a negative impact on e-banking adoption in Iraq.

E-banking offers several benefits (see introduction), but at the same time, it might raise a lack of confidence and security concerns. The study of Chaimaa et al. (2021) identified several challenges for e-banking adoption, such as difficulty to use, accessibility of ICT, data security and privacy issues, and lack of trust were few to mention. Trust has long been documented as an

imperative component of human social connections and a critical component in influencing customer behaviour. Trust, in reality, is a subjective opinion that a party will fulfil its promises. It is particularly vital in computerized monetary transactions, where users are exposed to more significant risks of ambiguity and a sense of loss of control (Lu et al., 2011; Zhou, 2013). In the increasingly competitive financial services market, trust is valued above all else in pursuing solid, long-term customer relationships. Zainordin et al. (2022) investigated the factors impacting e-banking adoption for Klang Valley residents. The authors collected data from 390 respondents and applied a multiple regression model. This study found convenience was the most significant e-banking adoption factor, whereas the study also reported a positively significant relationship between data privacy and security in e-banking adoption.

H2: Trust may have a positive impact on e-banking adoption in Iraq.

H3: Privacy risks may have a negative impact on e-banking adoption in Iraq.

Reliability is the degree to which a new or improved product consistently performs the intended functions to the consumer's needs (Rogers, 2003). Past empirical studies such as Ali et al. (2019), Jamshidi and Kazemi (2020), Johnson et al. (2014) and Rogers (2003) found a positive and statistically significant impact of reliability on service adoption. Pauline et al. (2017) argued that e-banking, contrary to off-line banking, offers greater time flexibility, freedom to execute transactions virtually at any time, more efficiency, and less cost. Therefore, consumers might perceive it as more valuable and quickly adopt it if they persistently perform the said functions. On the other hand, Echchabi, Olorogun, and Azouzi (2014) concluded that reliability is not a vital product characteristic for takaful. Based on the above discussion, the following can be hypothesized.

H4. Reliability will have a significant positive effect on the adoption of takaful products.

Complexity is the number of problems encountered when applying mobile banking in banking transactions (Rogers, 2003). Complexity negates ease of use, as ease of use must take its course in mobile banking transactions to be more simple and effective than off-line banking (Rogers, 1983). The adoption of new ideas should be followed by the lack of complexity that leads to the alienation of customers, and an easy and practical framework must be created that satisfies the customer and banking management alike (Jamshidi & Kazemi, 2020). A lot of research is working on finding modern frameworks for innovation to keep pace with technological development and paramount customer satisfaction (Chircu et al., 2000; Devlin et al., 2015; Haider et al., 2017; Tan & Sutherland, 2004). Literature concluded an inverse relationship between complexity and service adoption (Jamshidi & Hussin, 2013; Thambiah et al., 2012).

Similarly, Amin et al. (2013) and Yusof (1999) argued that adopting e-banking will be quick if the innovation does not require users to acquire additional expertise. The easier the technology is to use, the more advantageous it could be, increasing its acceptance, usage and adoption (Ali & Arshad, 2016). Based on the above discussion, the following can be hypothesized

H5: complexity may have a negative on e-banking adoption in Iraq.
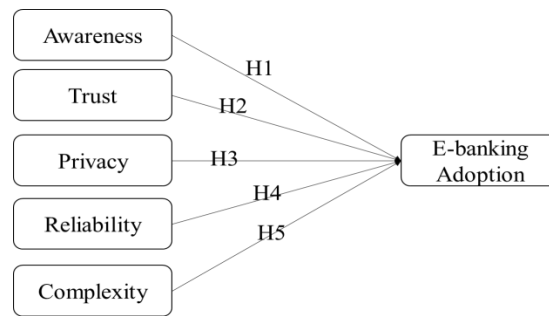
Figure 1: A proposed model of mobile banking

3 Method

This study aims to investigate the factors impacting e-banking adoption in Iraq. Literature showed that factors like trust, relative advantage, complexity, lack of awareness, and data privacy were vital e-banking adoption factors (Ali et al., 2019; Din et al., 2019; Jamshidi & Kazemi, 2020; Raza et al., 2020). A quantitative research approach was used in this study to test hypotheses. The questionnaire was adopted from various studies i.e., lack of awareness (Jamshidi & Kazemi, 2020), data privacy (Zhou, 2013), trust (Din et al., 2019), relative advantage and complexity (Ali et al., 2019). The authors used the self-administrative questionnaire to collect data for this study on a five-point Likert scale from a total of 350 customers having a bank account. The authors used partial least square structural equation modeling (PLS-SEM) for hypothesis testing. This technique is superior compared to other statistical methods in many ways (Hair et al., 2017). For instance, relaxed data normality and soft modeling assumption, with no sample size restriction, is effective for statistical model building along with forecasting and is precise and accurate in estimation (Hair et al., 2017; Osborne, 2011). Moreover, SEM is a combination of two powerful statistical approaches, exploratory factor analysis and structural path analysis, which enable the simultaneous assessment of the measurement model and the structural model.

4 Result and Discussion

Of the 350 distributed questionnaires, 285 respondents returned the filled questionnaires, and only 250 questionnaires were used for analysis purposes with a response rate of 71.4%. It is important to check for multivariate kurtosis and skewness before estimating regression coefficients (Cain et al., 2017; Hair et al., 2007). Hence, the authors used https://webpower.psychstat.org/models/kurtosis to check for multivariate kurtosis and skewness and affirmed no multivariate normality in the data; hence, SmartPLS, a non-parametric analysis technique, could be used.

Descriptive statistics of the respondent's profiles are given in Table 1. Analysis showed that 63% (37%) of the respondents were males (females), the majority of the respondents belonged to an age group of 18-25 years (70%), 55% holds a bachelor's degree, 56% of the respondents were employees with more than 6 years of experience (45%).

Table 1: Respondent's Profile

Description		Frequency	Percent
Gender	Male	157	63
	Female	93	37
Age	18-25	175	70
	26-30	37	15
	31-40	25	10
	41 and more	13	5
Education	PhD	55	22
	Masters	38	15
	Bachelors	137	55
	others	20	8
work	Employee	140	56
	Business	63	25
	Other	47	19
Experience	Less than 1 year	60	24
	From 1-6	78	31
	Above 6	112	45

The instrument's validity was assessed through convergent (composite reliability and average variance extract) and discriminant validity (see Tables 2 & 3). For convergent validity, AVE must be greater than 0.5, CR must be greater than 0.8 and factor loading should be higher than 0.5 (Din et al., 2021 & 2019; Hair et al., 2007). The results reported in table-2 revealed that all the factor loadings and AVE values are greater than 0.5 and CR values are greater than 0.8, indicating convergent validity of the instrument.

Table 2: Factor Loading, Convergent Validity (CR & AVE), and Cronbach Alpha

Construct	Items	Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach Alpha
E-banking Adoption	EA1	0.668			0.912
	EA3	0.737			
	EA4	0.756			
	EA5	0.742	0.87	0.527	
	EA6	0.740			
	EA7	0.709			
Awareness	A1	0.592			0.843
	A2	0.781			
	A3	0.780			
	A4	0.760	0.869	0.528	
	A5	0.778			
	A6	0.647			
Trust	Ful2	0.771			0.908
	Ful4	0.752			
	Ful5	0.810	0.891	0.62	
	Ful6	0.816			
	Ful7	0.786			
Privacy	Pri1	0.682			0.881
	Pri2	0.754			
	Pri3	0.814	0.876	0.586	
	Pri4	0.814			
	Pri5	0.754			
Reliability	Rel1	0.742			0.74
	Rel2	0.763			
	Rel3	0.763			
	Rel4	0.733	0.861	0.509	
	Rel5	0.652			
	Rel6	0.616			
Complexity	Cmx1	0.744			0.833
	Cmx2	0.745			
	Cmx3	0.686			
	Cmx4	0.653			
	Cmx5	0.701	0.858	0.501	
	Cmx6	0.714			

Table 3: Discriminant Validity

	E-banking Adoption	Awareness	Trust	Privacy	Reliability	Complexity
E-banking Adoption	0.726					
Awareness	0.440	0.727				
Trust	0.613	0.460	0.787			
Privacy	0.706	0.498	0.651	0.765		
Reliability	0.491	0.683	0.642	0.535	0.714	
Complexity	0.56	0.565	0.719	0.613	0.674	0.722

Table 4: HTMT

	E-banking Adoption	Awareness	Trust	Privacy	Reliability	Complexity
E-banking Adoption						
Awareness	0.728					
Trust	0.742	0.580				
Privacy	0.596	0.822	0.772			
Reliability	0.672	0.682	0.815	0.743		
Complexity	0.77	0.409	0.676	0.755	0.515	

The HTMT ratio could be used to assess the instrument's discriminant validity. An instrument may have well-fitted discriminant validity if the HTMT ratio is less than 0.85. the results provided in Table 4 revealed that none of the values for HTMT ratios was greater than 0.85, indicating the instrument's discriminant validity.

Lastly, the direct relationship between independent variables and e-banking adoption was estimated. The results in the table-5 reported a positive and a significant impact of trust (p-value 0.00 & β-value 0.251), privacy (p-value 0.00 & β-value 0.442), and reliability (p-value 0.002 & β-value 0.049) on e-banking adoption. In other words, a one percent increase in the trust will result from a 0.251% increase in e-banking adoption in Iraq. These findings are consistent with the literature (Alalwan et al., 2016; Bananuka et al., 2020; Carranza et al., 2021; Haider et al., 2017; Raza et al., 2020; Zainordin et al., 2022). On the other hand, complexity (p-value 0.002 & β-value -0.653) showed a negative and significant impact on e-banking adoption, suggesting that an increase in complexity will reduce e-banking adoption. This finding is in line with the literature (Bello & Salau, 2012; Sikdar et al., 2015). Lastly, awareness reported an insignificant impact on e-banking adoption.

Table 5: Regression Estimates

#	Hypothesized Path	β	Standard Error (STERR)	T Value	P Value	Hypothesis
1	Awareness -> e-banking adoption	-0.022	0.054	-0.411	0.341	Not-Accepted
2	Trust -> e-banking adoption	0.251	0.072	3.508	0.000	Accepted
3	Privacy -> e-banking adoption	0.442	0.058	7.577	0.000	Accepted
4	Reliability -> e-banking adoption	0.049	0.017	2.882	0.002	Accepted
5	Complexity -> e-banking adoption	-0.653	0.032	-20.645	0.000	Accepted

5 Conclusion

In recent decades, banking operations have seen a swift change due to fierce competition, rapid technological advancement, and global economic and financial integration. In the face of fiercely competitive, remaining profitable and competitive and sustaining market share is one of the critical challenges banks face today. Electronic banking (e-banking) could be viewed as the most cutting-edge, convenient, cost-effective, and self-service model to execute routine banking transactions virtually to cater to fierce competition in the banking arena. However, the adoption and acceptance of e-banking services remained a key challenge for the banking industry, especially in Iraq.

Therefore, this research aims to examine factors impacting e-banking adoption in Iraq. The instrument for this study was adapted from literature, and validity was assessed through convergent and discriminant validity measures. A total of 350 questionnaires were distributed among consumers with a bank account, 285 respondents returned the filled questionnaires, and only 250 were used for analysis, with a response rate of 71.4%. Analysis showed that 63% (37%) of the respondents were males (females), the majority of the respondents belonged to an age group of 18-25 years (70%), 55% held a bachelor's degree, 56% of the respondents were employees with more than six years of experience (45%).

The results for direct relationship reported a positive and a significant impact of trust (p-value 0.00 & β-value 0.251), privacy (p-value 0.00 & β-value 0.442), and reliability (p-value 0.002 & β-value 0.049) on e-banking adoption. On the other hand, complexity (p-value 0.002 & β-value -0.653) showed a negative and significant impact on e-banking adoption, suggesting that an increase in complexity will reduce e-banking adoption. Lastly, awareness reported an insignificant impact on e-banking adoption.

6 Availability of Data and Material

Data can be made available by contacting the corresponding author.

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