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Predicting Iraqi Bank Customers Intentions To Use Digital Banking Services Through The Extended Theory Of Planned Behavior (TPB)

Alaa Mahdi Sahi
College of Administration and Economics, Wasit University, Wasit, Kut, Iraq
Email: alaamsahi@uowasit.edu.iq

Abstrak

Tujuan dari penelitian ini adalah untuk menguji determinan yang mempengaruhi niat nasabah Irak untuk menggunakan layanan perbankan digital berdasarkan Extended Theory of Planned Behavior (TPB). Mengingat perbankan digital merupakan konsep baru di Irak, pemahaman terhadap faktor pendorong utama penerapannya sangatlah penting bagi industri perbankan. Makalah ini mengevaluasi dampak beberapa variabel, seperti sikap, tekanan sosial, dan kontrol perilaku yang dirasakan, kepercayaan, dan nilai persepsi, dalam membentuk niat adopsi pelanggan. Penelitian ini menggunakan PLS-SEM dengan SmartPLS untuk menginterpretasikan data hasil survei terhadap 334 nasabah Rafidain Bank, Rasheed Bank, dan Trade Bank of Iraq yang dipilih menggunakan convenience sampling. Nilai yang dirasakan memiliki pengaruh paling kuat terhadap niat adopsi, diikuti oleh kepercayaan, pengaruh sosial, dan sikap. Kontrol perilaku yang dirasakan tidak berpengaruh signifikan terhadap niat memanfaatkan layanan perbankan digital di kalangan konsumen. Temuan-temuan ini menyoroti perlunya meningkatkan persepsi nilai dan kepercayaan terhadap platform perbankan digital, serta menstimulasi pengaruh sosial untuk mendorong adopsi. Dampak minimal dari kontrol perilaku yang dirasakan menunjukkan bahwa hambatan infrastruktur dan rendahnya literasi digital juga dapat melemahkan kepercayaan individu dalam menggunakan perbankan digital. Kesimpulannya, penelitian ini memberikan implikasi signifikan bagi pembuat kebijakan Irak dan sektor perbankan. Hal ini menggeser upaya adopsi perbankan digital ke arah fokus bank pada pengembangan sistem terintegrasi yang diperlukan untuk transformasi radikal sistem keuangan di Irak agar memungkinkan lebih banyak orang untuk menggunakan layanan perbankan dengan menekankan pada peningkatan nilai nyata, pembangunan kepercayaan, dan validasi sosial.

Kata Kunci: Perbankan digital, Teori perilaku terencana, sektor bank Irak

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Abstract

The purpose of this study is to examine the determinants affecting Iraqi customers intentions to use of digital banking services based on the Extended Theory of Planned Behavior (TPB). Given that digital banking is a new concept in Iraq, understanding the key drivers behind its adoption is essential for the industry. This paper evaluates the impact of some variables, such as attitude, social pressure, and perceived behavioral control, trust, and perception value, on shaping customer adoption intention. The study used PLS-SEM with SmartPLS to interpret the data from a survey of 334 customers from Rafidain Bank, Rasheed Bank, and Trade Bank of Iraq selected using convenience sampling . Perceived value had the strongest effect on adoption intentions, followed by trust, social influence, and attitude. Perceived behavioral control did not have a significant effect on the intention to utilize digital banking services among consumers. These findings highlight the need to improve the perceived value and trust of digital banking platforms, as well as stimulate social influence to foster adoption. The minimal impact of perceived behavioral control showed that infrastructural hurdles and low digital literacy might also backburn individual confidence in using

digital banking. In conclusion, this study significantly provides implications for Iraqi policymakers and the banking sector. This shifts the digital banking adoption efforts towards what banks will focus on developing an integrated system that is required for a radical transformation of financial systems within Iraq to allow more people to be banked by emphasizing boosting apparent value, trust-building, and social validation.

Keywords: *Digital banking , Theory of planned behavior , Iraqi bank sector*

A. INTRODUCTION

Information technology has revolutionized banking and transformed financial services into a more favorable environment for consumers (Ahmied & Suri, 2021; Chauhan et al., 2022). Currently the banking sector has been enhanced through various innovations such as ATMs, internet banking, mobile banking, digital banking, and the Unified Payments Interface (UPI), which employ sophisticated tools to substantially increase the ability to meet customer demands more efficiently and effectively (Almaslukh et al., 2022; Glavee-Geo et al., 2020; Kaur et al., 2021). The emergence of the internet has led to reconsideration of IT strategies in the banking sector and introduced a new challenge product marketing can now be carried out online (Agyei et al., 2022). This has also led to significant progress regarding service delivery, particularly in the developing of digital and mobile banking applications (Alkhowaiter, 2020a; Ananda et al., 2020; Karjaluoto et al., 2019; Sahi, Khalid, Abbas, et al., 2021). According to statistics from 2019, the worldwide size of digital banking was approximately $803 billion in US dollars (Cele & Kwenda, 2024). Conversely, (Cele & Kwenda, 2024), project a more than twofold increase to $1610 billion in size by 2027. Retail banking, which accounts for more than 71% of the total market, dominates this sector. The rise of digital banking, however, has experienced slower growth in this category and by 2027, it is anticipated that it will dominate the market share.

In this study, digital banking refers to the execution of a variety of banking services and transactions via electronic platforms on the internet, such as bill payment or investment (Windasari et al., 2022). According to (Royo-Vela et al., 2024), digital banking enables customers to perform a broader range of financial transactions without the necessity of visiting physical bank branches. Despite the growing interest in digital banking and its services in Iraq, few studies have explored the behavioral foundations that determine customers' inclinations towards these technologies (Alkhowaiter, 2020a; Alsamman et al., 2022). Furthermore, the key gap this paper tries to fill is the necessity of studying customers' intentions to adopt rather than only measuring their actual adoption behavior. Given that digital banking is nascent in Iraq and much of the population have yet to decide on whether they will adopt these services, this focus is especially important. Given that context, the study suggests that it is more important to know why people intend—or do not intend to adopt digital banking than how many are already using these services. and hence provides policymakers as well as banks with some valuable insights.

The objective of this study is to offer polices and guidelines that need to be followed for accelerating the adoption of digital banking in Iraq. The study uses five major determinants to measure the intention of adoption. Attitude, social influence, and perceived behavioral control are three of them that originated from the Theory of Planned Behavior, while trust and perceived value both trace to an extended version of TPB. Thus, this research is crucial for financial institutions and policymakers to better help them explore new ways on how to address the use of applying digital banking services in Iraq.

B. LITERATURE REVIEW

Digital Banking in Iraq

The main challenge that the banking system in emerging economies faces is cashless, digital banking, which operates in the opposite direction of the conventional banking environment. Moreover, digital banking offers a far wider range of services (Carranza et al., 2021). Iraqi digital banking is nonetheless in its infancy, hindered by inadequate infrastructure, social-economic restrictions, and financial illiteracy. The traditional banking sector has been dominating Iraq since decades (Sahi, 2024). but it is currently undergoing a transformation towards digital services. This shift began with the advent of electronic payment systems, mobile banking apps and online banks. According to a study by KAPITA (2022), only 23% of Iraqis have access to formal banking services, which indicating a significant gap both in financial inclusion and digital adoption. Despite those challenges, there have been some important steps forward. The issuance of e-cards has increased significantly since 2017, with authorities issuing over 9.7 million prepaid cards by the end of last year. In addition, since such cards do not require a bank account to be obtained, they are even more popular, and the target group is increasing. Furthermore, several banks have launched their digital banking services, and mobile banking applications are getting more popularity. However, there is limited adoption of banking services in Iraq.

The Iraqi government, and Iraq's Central Bank, have recognized this, and they are transitioning into digital banking as part of modernizing its financial sector. While recent strides have been made in promoting electronic payment systems and deepening digital financial services.

Theory of planned behaviour (TPB)

The Theory of Planned Behavior (TPB) was introduced by (Ajzen, 1991a) as a framework to examine the interplay among attitude, subjective norm, perceived behavior control, intention, and behavior. The Theory of Planned Behavior (TPB) is an adaptation of the Theory of Reasoned Action, originally formulated by (Fishbein & Ajzen, 1977). The TRA had certain flaws in its approach to addressing the voluntary behavior of customers. Nevertheless, both models provide predictions regarding customer behavior. However, the The (TPB) is commonly employed in the analysis of consumer behavior prediction (Ahmmadi et al., 2021).

The (TPB) has been utilized in numerous studies to examine individuals' behavioral intentions in different contexts pertaining to specific objects. Examples of such situations include consumption of food (Ajzeni, 2015), switching between channels in purchasing (Madahir & Sukatie, 2016), entrepreneurial activities (Palupir & Santoso, 2017), electronic commerce (Anggraini et al., 2019), the separation of domestic waste and the acquisition of luxury goods (Canguendie-Valenitim & Vale, 2021). The present study will utilize the identical theoretical framework and formulate hypotheses to examine the impact of three constructs, as outlined in the (TPB), i.e., perceived behaviour control, social norms and attitude Since digital bank is in its infancy stage in Iraq, consumers' intention to adopt the services offered by digital banking will be the primary focus.

Several studies of the Theory of Planned Behaviour (TPB) have found that attitude, social norm, and perceived behavioral control are substantial predictors across various behaviors Research studies that these constructs have a positive and significant influence on same behavioural intention. For example, Ajzen (2015) illustrated this concept concerning dietary consumption in college students where the attitude toward selecting food and beverages was significantly associated with perceived behavioral control, among other factors. Similarly, the studies of (Anggraini et al., 2019; Madahi & Sukati, 2016), suggested similar findings in areas such as channel-switching behavior for purchasing and e-commerce adoption. (Wang et al., 2018) also

demonstrated this in their study on agricultural pesticide regulations among farmers in China. These findings align with (Ajzen, 1991b) early theorizing that stronger attitudes and social influence, and higher perceived behavioral control lead to a more pronounced intention to engage in specific behaviors. However, certain research yields inconclusive findings, particularly in relation to the perception of behavioral control. In previous studies conducted by Varma (Varma, 2018), it was observed that attitude and social influence exhibited statistical significance, however, perceived behavioral control did not consistently exhibit significant predictive power. Ideally, this construct should accurately represent an individual's confidence in their ability to perform the behavior effectively. However, the impact of this influential aspect may be diminished in cases when individuals possess insufficient information or when the context include unknown elements, as Ajzen (1991) highlighted. In summary, it can be observed that the three constructs of the (TPB) exhibit a favorable influence on behavioral intention. However, the significance of perceived behavioral control may vary, indicating the necessity for meticulous examination of contextual factors and the calibration of measurement in forthcoming research endeavors.

Extended theory of planned behaviour (ETPB)

The complete framework from the (TPB) extended with additional factors such as trust and perceived value can better explain behaviors within different fields, including digital banking. Proposed by Ajzen in 1991, TPB consists of three basic units: attitude, social influence and perceived behavioral control, which altogether jointly act as precursors to various forms of behavioral intentions. A notable advancement was to include trust-based consumer behavior as a moderator in the model. Relationship with Trust: Even the researchers investigating determinants of innovative technology adoption have recognised trust as a key element influencing digital banking service user intentions. Trust in turn reduces perceived risks and reduces uncertainty as it encourages users to use digital banking activities. This is particularly important in a digital financial environment where users may be reluctant to not use the technology due to concerns about such risks (such as fraud and privacy issues). For example, trust perceived as credibility was found to be an indicator in the empirical study on mobile banking usage intentions among Korean consumers (Han, 2005). Literature from other settings, such as e-commerce stress the role of trust in enabling online purchases (Rameez & Kulathunga, 2019) and these findings are consistent with what we have observed so far. When it comes to digital banking sector in Iraq, trust is anticipated to have a major impact. on integrating and experiencing online bankers with the perspective of customers.

The second independent variable, perceived value refers to the customer’s determination of how beneficial or costly it is for him in utilizing digital banking services. This encompasses tangible benefits, Perceived value, significantly contributed to user's intentions to continue participation by employing the expanded of (TPB) model on social media engagement (Al-Debei et al., 2013). In the case of digital banking apps, consumers evaluate whether these platforms deliver a good user experience and are efficient in completing transactions, along with factors that attract customers like rewards. Since digital banking in Iraq is a new industry, sufficient perceived value will be crucial to convincing customers of the necessity of those services. The incorporation of both trust and perceived value strengthens predictions based on TPB alone which creates a more comprehensive model for assessing customer intentions to adopt digital banking services.

C. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

Attitude (AT)

Attitude is an independent variable that describes the perception of a user to use digital banking in a positive or negative way, and it plays a significant role with intention from Theory planned behavior (TPB) model. There are numerous studies that show individuals with positive attitudes towards digital banking are likely to have stronger adoption intentions. On the one hand, a study on m-banking adoption indicated that customer attitudes were strongly related to predicted behavior intention due to perceived usefulness and compatibility (Khasawneh & Irshaidat, 2017). In emerging digital banking markets such as Iraq, comprehending customer intent is crucial, as many potential users remain uncertain about utilizing these services in addition, attitude is recommended as an imperative predictor of adoption intention among other determinants as evidenced by findings from a study on mobile banking in another emerging market; hence, it supports & justifies the positive relationship proposed at hypothesis level (Aboelmaged & Gebba, 2013; Almaslukh et al., 2022). Numerous empirical studies using comparable models in various banking studies have supported the hypothesis, which contends that a positive adoption attitude promotes increased adoption of digital banking (TPB framework). Thus,

H1: The adoption attitude is positively related to the intention to adopt digital banking services.

Social influence

social influence is of high relevance in digital banking, especially the concept is still new to Iraq. In emerging countries, people typically rely on the opinions of their peers or family members and recognized community leaders in determining whether to embrace innovative technologies such as digital banking. Studies show that social influence, as well attitudes and perceived behavior control are the most important determinants that affect users' intention to adopt digital services. As for instance, research on mobile banking adoption has shown that social influence significantly influences an individual's intention to adopt innovative technology (Aboelmaged & Gebba, 2013). Further studies have shown that social influence is also crucial in determining adoption intention to utilize internet banking service (AL-Majali & Mat, 2010). According to the findings of several research, social influence has a considerable impact on behavioral intentions from a variety of different domains. For instance, (Lu et al., 2005) investigated the adoption of wireless mobile in which their results observed conformity with previous works while social influences as well personal innovativeness was found to exert a remarkable causal effect on intention towards technologies. The study highlights that one's intention of adopting innovative technologies can be influenced by the social environment. (Vannoy & Palvia, 2010) conceptualized a social influence process of technology adoption, suggesting that as innovative technologies gradually gain acceptance or integrate into the culture, individual's perception shifts towards use. One could assume this is directly indicative of the demand in Iraq for digital banking when they will see it used by many users. (Kulviwat et al., 2009) Social influence and adoption attitude are two elements that have a significant impact on the adoption of high-tech breakthroughs, particularly those that are consumed by the general population. (Silva & Lampo, 2021), it was concluded that social influence - guided specifically through subjective norms and image are the key enablers of change in our behavioral intentions to adopt Battery Electric Vehicles. This clearly indicates that social influence is important in driving people to adopt digital banking, especially at places where conformity is the key player rather than individual decision. Thus,

H2: The social influence is positively related to the intention to adopt digital banking services.

Perceived behaviour control (PBC)

The third variable of TPB theory is the PBC, defined as how easy or difficult it is for a person to perform certain types of behaviour (Ajzen 1991). in Iraq, where digital banking is still at an early stage of adoption it makes sense to focus on users' intentions rather than current usage as many

potential customers have not yet decided whether they will take up these services. In this context, perceived behavioral control is one of the most crucial aspects in which it comes to consider internet accessibility, digital literacy as well trust on online platforms. Those with greater perceived behavioral control are expected to be more confident in their ability successfully use digital banking and intention to adopt, engaging the services. Several studies have pointed out the importance of perceived behavioral control on use intentions for internet banking services. Previous works on internet banking adoption in Sri-lankan context revealed that the perceived behavioral control has a positive association with intention to use online banking (Nayanajith & Damunupola, 2019). In the same light a research on electronic banking in Iran confirmed that perceived behavioral control along with attitude and subjective norms had also impact on intention of adopting digital banking(Gilaninia et al., 2011) .(AL-Majali & Mat, 2010) also carried out a study in Jordan this again confirmed the strong influence on individuals' behavioral intention to adopt internet banking of perceived behavioral control, further emphasizing the positive association between adoption intentions with PBC. Thus,

H3: The Perceived behaviour control is positively related to intention to adopt digital banking services.

Trust

Trust refers to a customer's confidence in the reliability, security, and competence of the banking system to protect their personal, financial information, while at present they will get an easy use service (Anneli Järvinen, 2014). When it comes to banking, trust becomes crucial because of the sensitive nature of transactions and data exchanges involved in payment processing (Kowalski et al., 2021a, 2021b; Okello Candiya Bongomin & Ntayi, 2020; Sahi, Khalid, & Abbas, 2021). Trust is considered a core factor deciding the adoption of digital banking, especially in emerging markets (Alkhowaiter, 2020b; Okello Candiya Bongomin & Ntayi, 2020). Customers may be reluctant out of fear for security, privacy, or the technical reliability of the platforms. Trust alleviates these concerns by building confidence in the system. According to the TPB. Understanding the effect of trust on digital banking services is especially important for behavioural intention to use. For example, several studies have highlighted the significance of trust in other contexts., such as mobile banking, which has been shown to positively influence consumer willingness to adopt new digital platforms (Kabakuş & Küçükoğlu, 2022; Kumar et al., 2023a; Rexha et al., 2003; Yousafzai et al., 2003). Trust is so crucial to forming customer intentions towards digital banking, which makes it a key motivator for banks aiming to promote these products. Considering the prior research, it is possible to formulate the following hypothesis:

H4: Trust is positively related to intention to adopt digital banking services.

Perceived value

Perceived value is how a customer measures the benefits they receive from a product or service against what it costs them. In digital banking context, perceived value indicates whether a service is easy to use, how convenient it would be for customers, and time savings as well. On the other hand, what are the financial benefits customers will get after adopting this channel? This study specifically utilizes the (ETPB) model, that adds constructs such as perceived value to enhance predictions of intentions and behaviors in domains such as digital banking. Previous studies have reported the importance of perceived value in explaining behavioural intentions towards many technologies. For instance, Analysis on the adoption of media tablets by (Yu et al., 2017) found that perceived value is influencing adoption intentions. (Magotra et al., 2018) did study on banking technology adoption in India and concluded that perceived value significantly influences

behavioral intentions towards banking technology adoption. (Xie et al., 2021) investigate FinTech platform adoption and discover that perceived value has a positive effect on the intention to adopt by individuals Results from the study demonstrated empirically that as consumers perceived higher value in terms of ease, convenience, and security on a platform their intentions to adopt these platforms increased. In addition, (Y.-K. Liao et al., 2022) also combined the (TAM) with Value-Based Model (VAM) to analyze the acceptance of e-learning technologies. Their research has shown that consumer adoption is significantly influenced by the perceived benefits which determine the creation of value perception, the authors also found that higher perceived value leads to greater intention to adopt innovative technologies. based on the literature review, therefore this study puts forth the hypothesis that,

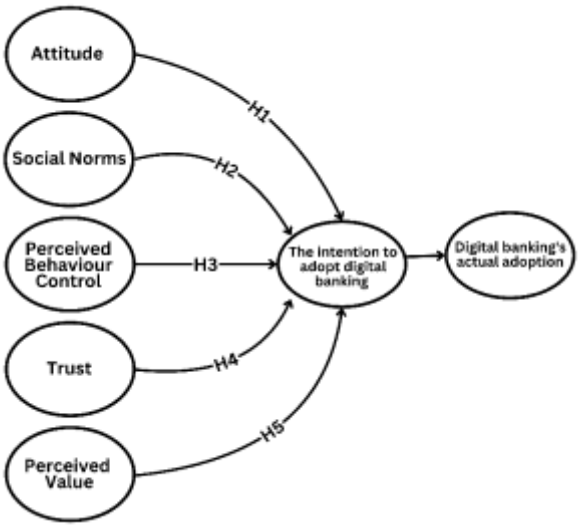
H5: Perceived value is positively related to intention to adopt digital banking services.

Research framework

The proposed research model aims to create a comprehensive framework that clarifies the relationships between attitude, social influence, perceived behavioural control, trust, and perceived value as predictors of intention to use digital banking services among Iraqi bank customers.. Based on the factors that were grounded in the (ETPB), proposed model intends to examine how these variables act on customers' behavioral intentions in digital banking adopted within an emerging context such as Iraq. The study builds on the Theory of Planned Behaviour as its theoretical foundation. The study extended the original TPE by adding new constructs such as trust and perceived value, which have been found to play important roles in technology adoption. These variables are included because previous studies show that even though they have a significant effect on the intention of adopting innovative technologies, they have not been sufficiently investigated in the banking environment in developing countries (Malaquias & Hwang, 2016a; Nor & Pearson, 2008; Xiong, 2013; Zhang et al., 2018). The model of research proposed seeks to contribute to a significant gap in the literature, focusing on the intention of individuals and their adoption of digital banking and not only on actual behaviors.

The model also becomes more comprehensive when adding trust and perceived value as independent variables, which both are important constructs in the context of Iraq. And in environments where security concerns or uncertainty might shore up resistance to innovative technologies, trust is something that is paramount. Perceived value considers the cost-benefit analysis customers make to adopt new services; it also shows perceived advantages relative to traditional banking mechanisms. This research model shows the relationships that will be proven using a survey. Figure (1) illustrates the proposed model, with arrows representing direction of relationships.

Figure 1. Research framework



D. RESEARCH METHODOLOGY

The study tests hypotheses using a survey questionnaire to investigate factors that can predict intentions to use digital banking services in Iraq. The sample included 467 customers of Rafidain Bank, Rasheed Bank, and Trade Bank of Iraq selected using convenience sampling. Out of the total 467 distributed questionnaires, 417 were received back with a response rate of 89 %. After filtering the responses, only 334 were complete and relevant to the study. The semantic differential and the Likert scale were used to assess variables such as attitude, social influence, perceived behavioral control, trust, and perceived value. Data was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS. This process adopted a two-step approach where the measurement model confirms reliability and validity , while the structural model tests the hypotheses, providing interrelationships among variables.

E. Measures

The TPB extended model measurement incorporates the constructs from prior studies (Basoeki & Agus, 2023; Ho et al., 2020; S. Liao et al., 1999; Shih & Fang, 2004) with minor modifications in their phrasing to align with the digital banking's adoption criteria of our research. The Measures for AT, SI, and PBC are derived from (Chenig et al., 2006; Hassan et al., 2018; Nasri & Charfeddine, 2012). The items addressing trust were adapted from the construct developed by (Choi & Ji, 2015). While the items related to perceived value were adapted from the frameworks established by (Kim et al., 2007; Sirdeshmukh et al., 2002). The complete details of constructs, including their items, are presented in table 1.

Table 1. List of Constructs and Their Items

Construct	Item

Attitude towards Digital Banking's adoption intention	AT1	It is an innovative idea to use digital banking.
	AT2	would think it is enjoyable to use digital banking
	AT3	Using digital banking is the way to go, in my opinion.
Social influence	SI1	The folks who matter most to me want me to switch to digital banking soon.
	SI2	People who have influence over me believe that I should use digital banking.
	SI3	Those whose opinions I respect would prefer that I use digital banking.
Perceived behaviour control	PBC1	I believe I could effectively conduct financial transactions using digital banking.
	PBC2	I believe that I would have complete control over the process of using digital banking.
	PBC3	I am well-equipped to use digital banking because I have the necessary resources, knowledge, and skills.
Trust	TRU1	Digital banking is dependable.
	TRU2	Digital banking is reliable.
	TRU3	In general, I can trust digital banking
Perceived value	PV1	When I think about how much effort I must put in, using digital banking is beneficial for me.
	PV2	Considering the amount of time that I must spend, I believe that using digital banking is worthwhile to me.
	PV3	Overall, the use of digital banking delivers excellent value.
Digital banking’s adoption intention	DBAI1	I am willing to adopt digital banking in the future.
	DBAI2	I intend to adopt digital banking in the future.
	DBAI3	I plan to adopt digital banking in the future.

F. Results

The research results were analyzed using SmartPLS 4 and SPSS 25. To gain an understanding of the sample's distribution, frequency distribution and percentile measures were utilized. Collinearity statistics were employed to determine whether multicollinearity existed among the independent variables. Additionally, Cronbach's alpha was used to check the reliability of the scale items. Convergent and discriminant validity were ensured using appropriate statistical

methods. Structural Equation Modeling (SEM) and the partial least Squares (PLS.) approach were applied to test the proposed hypotheses.

Preliminary Univariate Analysis

Demographic Analysis

The demographic Characteristics of the respondents, including gender, age, job status, and education level, are summarized in Table 1. The analysis revealed that female participants (162) slightly outnumber male participants (151). Most respondents, 53.4%, were in the age group between 31 and 40 years. In terms of educational background, most of the respondents were undergraduate students, comprising 72.2% of the sample. Furthermore, most of the participants worked in the governmental sector, accounting for 63.9% of the total sample.

Table 2. Demographic Analysis of respondents

Categories	Subcategories	Frequency (N)	Percent (%)
Gender	Female	162	51.8
	Male	151	48.2
Age	20-30	67	21.4
	31 and above	79	25.2
	31-40	167	53.4
Education level	Postgraduate	87	27.8
	Undergraduate	226	72.2
Job status	Governmental sector	200	63.9
	Private sector	113	36.1

Descriptive Statistics

Descriptive statistics, including mean, standard deviation, kurtosis, and skewness, were employed to assess the variables. Composite scores were generated for each latent construct by averaging the related scale items. For example, the three items measuring Attitude were averaged into a single composite score. As illustrated in Table 2, Social Influence (SI) had the highest mean score (M= 3.96, SD= .962), whereas the mean score for Perceived Value (PV) was the lowest (M = 3.20, SD = 1.329).

Table 3. Descriptive statistics (n = 313)

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SI	313	3.9670	.96224	-.844	.138	.041	.275
TRU	313	3.8115	.92621	-.849	.138	.333	.275
AT	313	3.4515	.97542	-.061	.138	-.962	.275
PV	313	3.2002	1.32920	-.193	.138	-1.203	.275
PBC	313	3.8317	1.02987	-.767	.138	-.098	.275
DBAIJ	313	3.3376	1.16084	-.167	.138	-.894	.275
Valid N (listwise)	313						

Multivariate Analysis

Analysis of Measurement Model

The measurement model was examined to evaluate the relationships Between the observed variables and their respective latent variables (Hair et a1., 2019). SmartPLS 4.0 was used to test the mode1 using partia1 least squares structura1 equation modeling (PLS-SEM) (Ringle et al., 2022). The reliability of the constructs was confirmed as Cronbach's alpha ((CA) and composite reliability ((CR) values for all latent variables exceeded 0.70, as shown in Table 3Additionally, convergent validity was validated, as a1l constructs had average variance extracted (AVE) values greater than 0.50. Additionally, factor loadings for all variables exceeded 0.80, signifying acceptable validity levels.

Table 4. Results of measurement model analysis

Latent variables	Items	FL	CA	CR	AVE
Attitude	AT1	0.846	0.754	0.753	0.669
	AT2	0.836			
	AT3	0.769			
Perceived Value	PV1	0.898	0.904	0.906	0.839
	PV2	0.937			
	PV3	0.912			
Perceived behavior Control	PBC1	0.856	0.802	0.814	0.715
	PBC2	0.807			
	PBC3	0.872			
Social Influence	SI1	0.857	0.829	0.836	0.746
	SI2	0.900			
	SI3	0.832			
Trust	TRU1	0.847	0.734	0.751	0.658
	TRU2	0.886			
	TRU3	0.687			
DBAI	DBAI	0.886	0.907	0.908	0.843
	DBAI2	0.945			
	DBAI3	0.922			

Discriminant Validity

Discriminant validity guarantees that each latent construct is separate from the others. The Fornell-Larcker criterion was employed to evaluate this, comparing the square root of the AVE values with the correlations among constructs. Table 4 illustrates that all diagonal values, indicative of the square root of the AVE, exceed the inter-construct correlations, hence affirming the model's discriminant validity.

Table 5. Results of discriminant validity - Fornell-Larcker criterion

	AT	DBAI	PBC	PV	SI	TRU
AT	0.818					
DBAI	0.382	0.918				

PBC	0.319	0.388	0.845			
PV	0.244	0.529	0.457	0.916		
SI	0.416	0.368	0.322	0.203	0.864	
TRU	0.493	0.372	0.260	0.187	0.499	0.811

"Note: Square roots of average variance extracted (AVE) are shown on the diagonal in bold"

Structural Model Analysis

To test the hypotheses and relationships in the structural model, path coefficients were estimated using SmartPLS version 4 (Ringle et al., 2015). The R-squared values indicated that the model explained 39.9% of the variance in the intention to use digital banking services, which implies that the model had significant predictive power. The model's fit was acceptable, based on the Normed Fit Index (NFI = 0.795) and the Standardized Root Mean Square Residual (SRMR = 0.065). Unlike traditional SEM methods, PLS-SEM focuses more on the predictive relevance of the model than on traditional fit indices.

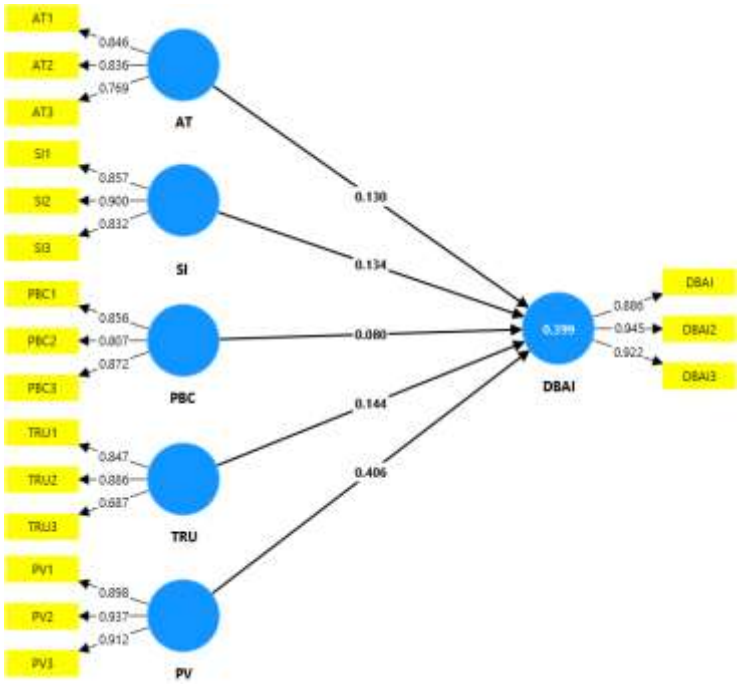


Figure 1. Structural model diagram

The analysis of the structural model revealed that Attitude (β = 0.130, p = 0.020), Perceived Value (β = 0.406, p < 0.001), Social Influence (β = 0.134, p = 0.015), and Trust (β = 0.144, p = 0.008) had positive and significant effects on Digital Banking Actual Adoption (DBAI). However, Perceived Behavioral Control (PBC) did not show a significant influence on DBAI (β = 0.080, p = 0.192). These results are presented in Table 5, which summarizes the significance of the relationships between constructs. Thus, the study found that Attitude, Perceived Value, Social Influence, and Trust positively influence the use of digital banking services, while Perceived Behavioral Control had no significant effect. These findings offer valuable insights for understanding the factors that drive digital behavior and the adoption of artificial intelligence in banking.

Table 5. Results of structural model (direct paths)

Direct paths	*Beta*	*T Statistics*	*P Values*	*Results*
H_1 AT -> DBAI	0.130	2.332	0.020 *	Supported
H_2 PBC -> DBAI	0.080	1.306	0.192	Not supported
H_3 PV -> DBAI	0.406	7.671	0.000**	Supported
H_4 SI -> DBAI	0.134	2.425	0.015*	Supported
H_5 TRU -> DBAI	0.144	2.667	0.008*	Supported

Note: **p<0.001, *p<0.05 based on two-tailed test; t=1.96

G. Discussion

The purpose of this study was to investigate the factors that may. affect Iraqi bank customer intentions in relation to digital banking services using an extended TPB. In this regard, the main results showed that attitude, perceived value, social influence, and trust are important antecedents to the digital banking adoption whi1e perceived behaviora1 contro1 is not significant in determining this intention. These results offer valuable lessons for investment in other markets like Iraq, where digital banking is still a recent institution.

According to the finding's, perceived usefulness was the strongest predictor of intention adoption ($\beta = 0.406$, $p < 0.001$). This highlights the importance of convenience, time-saving and efficiency as barriers holding back bank customers from total adoption of digital banking. The results obtained are well in accordance with previous studies such as (Xie et a1”., 2021). Higher perceived value has a positive relationship with the adoption of digital platforms, and this is even truer in emerging markets. For the case of Iraq where banking services have been particularly constrained and digital services are a new frontier, these insights imply that consumers are more likely to adopt new channels when convinced these enhances their banking experience. The attitude toward digital banking also significantly had a positive impact ($\beta = 0.130$, $p = 0.020$). This finding is also in line with studies based on the conventional TPB framework, like one by (Gao & Tang, 2023) who found that positive attitudes to digitally platforms would lead towards adaptation intentions mostly due to perceived usefulness. With a sceptical customer base in Iraq, influencing positive attitudes towards digital banking simply requires some education on the benefits. Social influence also played a significant role ($\beta = 0.134$, $p = 0.015$), highlighting the relevance of word-of-mouth recommendations from peers, family, and community for customer choices. This finding is consistent with prior research (Hsu & Chiu, 2004) indicating that in novel digital services contexts, people frequently draw on broader aspects of their social network for technology adoption decision making. Due to the slower adoption of technology in Iraq, this high-touch social influence through community-driven marketing strategies; may be effective to promoting digital banking uptake. Moreover, trust in digital banking systems also positively predicts intention to use ($\beta = 0.144$, $p = 0.008$), similar to both the results of (Kumar et al., 2023b; Malaquias & Hwang, 2016b; Zhou, 2012) and (Alsaad et al., 2017; Amofah & Chai, 2022) studies on mobile banking and e-commerce, respectively. This is essential in building trust and allaying security and privacy concerns, which are one of the main barriers to digital service adoption (Sahi,

Khalid, & Abbas, 2022; Sahi, Khalid, Abbas, et al., 2022). As the banking infrastructure in Iraq is still maturing, guaranteeing trust and reliability on digital banking platforms will be critical to establishing customer trust and driving adoption. And interestingly, the results indicate that perceived behavioral control (PBC) did not have a significant effect on the intention to use digital banking services specifically ($\beta = 0.080$, $p = 0.192$), even though some of studies such as (Celik, 2008; Glavee-Geo et al., 2017) stated it was one of the most important factors in technology adoption. This discrepancy likely results from Iraq's low digital literacy and limited technological resources, therefore implying that confidence in the ability to use digital banking by customers may predict willingness to adopt but not actual adoption, especially if factors not related to individuals (i.e., poor internet infrastructure) may hinder this. Further research is needed to develop a more nuanced understanding of these contextual barriers.

H. Conclusion

This study was set to predict Iraqi bank customers' intentions to adopt digital banking services by incorporating an extended version of the TPB. The main objective was to investigate the effect of main factors attitude, social influence, perceived behavioral control, trust and perceived value – on digital banking services adoption intention. These findings provide a holistic account of what drives consumer behavior in an emergent digital banking landscape such as Iraq. where Iraq seems slow to adopt compared to developed markets.

The study provided several key contributions for understanding the behavioral intentions of customers towards adopting digital banking in Iraqi banks. The importance of what we call ‘attitude toward digital banking’ as a significant predictor was revealed: individuals with positive attitudes are more likely to use the service. This is in line with the original TPB framework, where it has been well established that attitudes have a significant impact on behavioral intention. Perceived value was found to have a positive significant impact on adoption intentions with the highest weight amongst all other factors which means that when customers feel valued, they will start considering using digital banking (Convenience, Efficiency, Time saving). This underscores the quintessential importance of perceived usefulness and customer value propositions in penetrating innovative technologies in emerging markets such as Iraq. The results showed that social influence was also strongly related to the intention to adopt digital banking, which implies family, friends and societal norms play a significant role in this decision-making process. Such result carries special importance in a country such as Iraq as the acceptance of technology here is driven a lot through social validation by peers, reflecting the high social context culture prevalent in these societies. One of the key findings was simply how much trust matters within a digital banking environment. The more reliable these digital banking systems become, the greater levels of comfort customers have in using them. Amid mounting anxiety about data breaches and identity fraud, digital banking needs to build a trusted ecosystem to drive deeper user adoption. Interestingly, perceived behavioral control (the measure of whether individuals believe it would be easy or hard for them to adopt any behavior) did not significantly affect intentions to use digital banking in Iraq. These factors could relate to the context; For example, some indicated lack of digital literacy and other infrastructural loopholes may have impacted the confidence for switching to digital banking.

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