An Empirical Study On Predicting Employees' Acceptance of E-Banking in Iraq

1st Nassir Jabir AL-Khafaji
Technical Institute Nassiriya
Southern Technical University
Thi-Qar, Iraq
nassir.farhan@stu.edu.iq

2nd Mohamed Adel Al-Shaher
College of Science
University of Thi-Qar
Thi-Qar, Iraq
alshaher_comp82@sci.utq.edu.iq

3rd Ali Abdulrazzaq AL-Sawad
Department of Computer Science
Shatt Alarab University College
Basra, Iraq
alialsawad7@gmail.com

Abstract—In the past few years, the Iraqi employees have become increasingly ambitious to use the electronic financial transactions in constantly. Due to the government in Iraq is seeking to apply electronic systems in the government departments therefore started to turn most of the employees' salary electronically. However, this rapid shift from the manual processes to electronic methods has caused a number of problems, such as salary delay, hardware failure, employee fear of theft and thus leading to a lack of confidence in the use of electronic transactions. Therefore, the motivation of this study is to find reasons for the problem that why some employers use electronic banking systems, while others do not. This empirical study sought to extend the technology acceptance model to determine the key factors that hampering the full application of electronic financial transaction methods in Iraq. For this purpose, the data was gathered from the employees in the Ministry of Higher Education and Scientific Research as well as Ministry of Education who have experience in online transaction and ATM. The findings revealed that, four out of eleven hypotheses are no significant impact on e-banking services acceptance. In sum up, factors such as Accessibility, usefulness, Trust and Ease of use will enhance electronic banking services acceptance.

Keywords— SEM-PLS, E-banking services, ATM, Acceptance

I. INTRODUCTION

In the present era, the Information Technology (IT) is turning into a significant factor in the future banking development, influencing banks' marketing and business strategies. Lustsik (2003) argued that e-developments are progressing rapidly in every aspect of financial markets and financial intermediation such as e-brokering, e-banking, e-money, e-exchange, e-finance, e-supervision and even e-insurance. Dhandayuthapani and SELVACHANDRA (2013) referred that along with introduction of new business ideal plans, IT is progressively improving the banking industry services. Therefore, the banking sector has started to invest in the IT in order to achieve the cost savings and enhance customer satisfaction (Adewoye, 2013).

Electronic banking was established in the mid-1990s and became more important (Allen, McAndrews, & Strahan, 2002). Recently, in the financial services organization, electronic banking is evolved as one of the significant tools of information distribution. The term electronic banking refers to *"the delivery of banks information and services by banks to customers via different delivery platforms that can be used with different terminal devices such as personal computer and mobile phone with browser or desktop software, telephone or digital television"*(Daniel, 1999). Besides, banks have also invested in the Automated Teller Machine (ATM) (Ajayi & Enitilo, 2016). Automatic Teller Machines (ATMs) are widely adopted by the banks all over the world. Offering extensive benefits to both depositors and bank, ATMs provide convenience to the depositors to withdraw money other than banking hours (Olatokun & Igbinedion, 2009).

II. MOTIVATION OF THE STUDY

In the past few years, the income of Iraqi citizens has increased dramatically due to the high price of oil and increased productivity. This increment, encouraged the local and international banks to invest in Iraq and enhance their services and delivery good quality services for their customers. Until 2016, most of the banks in Iraq not exploited modern technologies to delivering the electronic services for their customers (Riyadh, Sukoharsono, & Baridwan, 2016). Recently, the government encouraged citizens to use electronic means in their daily dealings, including banking operations. Therefore, banks whether they are in the private sector or the government sought to develop their services by taking advantage of modern technology for provide their services electronically. Wherein, it helped exploit these techniques in banks when the Iraqi government turned all salaries of their employees into banks.

However, there were many problems during the implementation of electronic banking services, for example, delayed salaries, malfunction in ATMs, lack of sufficient money in the ATM and fear of theft. These and other issues may make many government institutions and citizens uncomfortable using or continuing to use electronic methods in day-to-day transactions. Furthermore, there are no empirical studies investigating factors that may hinder citizens, especially employees, from continuing to use electronic methods such as electronic banking in their daily lives and may lead to failure e-banking systems. Because many provinces in Iraq have experiences with failure and resistance to the use of modern technologies by their employees (Al-khafaji, 2016).

With the importance of this area to the economy of the government, there are few studies in Iraq that focused on the determining factors that may lead to failure or success of application or adoption electronic banking among the government employees. Therefore, the current study sought to scrutinize the Technology Acceptance Model (TAM) for the investigation of issues leading to the electronic banking adoption in Iraq.

III. RELATED WORKS

A. Definition of the electronic banking

The electronic banking has been defined in many ways. Such as Daniel (1999) defined it as the electronic services that delivery by banks to their customers through several available electronic platforms, for instance mobile phone and personal computer. In the same context, Pikkarainen, Pikkarainen, Karjaluoto, and Pahnila (2004) stated a general definition of the electronic banking, "internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments". In general, electronic banking refers to use of telecommunications and computers for transactions rather than human interactions (Nimako, Gyamfi, & Wandaogou, 2013). Indeed, the banks around the world use electronic banking as a one of the cheapest channels to delivering for banking services.

Online banking services empower the banks to establish and enhance their customer relationship (Robinson, 2000). From the bank's perspective, the main benefits of electronic banking services are the better responsiveness and better branding into the market. Other benefits are measurable in monetary terms. From the customer's perspective, introduction of an easy tool for money management and time saving by automation of banking services are the significant benefits (Baten & Kamil, 2010).

B. Electronic banking Studies

From the nineties, emergence of electronic banking into a significant channel for the customers and banks has become more interesting area in the research context. Thus, the researchers across the world have different perspective. For instance, Liébana-Cabanillas, Muñoz-Leiva, and Rejón-Guardia (2013) investigated the electronic banking services as a determinant of customer satisfaction. They determine that all the factors (such as ease of use, trust, usefulness and accessibility) affect the customer satisfaction in using e-banking services. In a similar study, Ahmad and Al-Zu'bi (2011) found that adoption of e-banking services (speed, privacy, security, fees and charges, convenience and accessibility) positively influence the word of mouth (WOM), customer loyalty and customer satisfaction of Jordanian commercial banks. Besides, Toor, Hunain, Hussain, Ali, and Shahid (2016) asserted the significance of customer satisfaction for survival of organizations in the world. In their empirical research on determinant of customer satisfaction in Pakistani banks, they found that service quality is a substantial determinant of customer satisfaction. Their findings suggested that offering of better-quality services leads to gain of competitive advance.

Another study also focused on e-banking, but based on the perspective of bank staff. This study was conducted by Riyadh et al. (2016) who investigated the crucial factors (for instance, perceived IT beliefs, perceived usefulness, perceived ease of use, attitude and intention, and task technology fit) to acceptance of the information technology in the Iraqi Banks. Study found that these factors were not affected by the employee's perspective of accepting the use of information technology in the bank. In the same context, Samar, Ghani, and Alnaser (2017)

determine that perceived ease of use, perceived usefulness and attitude are the key determinants of promoting e-banking and significant factors that influencing customers' intentions to adopt the electronic banking in Pakistan.

Moreover, the study of Ajayi and Enitilo (2016) took a examined the influence of electronic banking on bank performance and found that electronic banking components such as internet banking, mobile banking and automated teller machines influence the bank performance. Skvarciany and Jurevičienė (2018) as well concentrated on the e-banking from trust aspect. They referred that, trust factor significantly determine the adoption of information and communication technology. Their study, explores what factors lead customers to trust e-banking. Additionally, Odumeru (2012), realizing the lack of popularity of e-banking in the developing countries, Odumeru conducted a practical study in Nigeria to determine the important factors of the e-banking acceptance. The results revealed that acceptance of e-banking in Nigeria is strongly influenced by the Perceived Risk, Perceived Ease of Use, Perceived Benefits, Perceived Enjoyment, Educational Background, Age and Income. As stated earlier, scarcity of the empirical study on focusing the adoption of the e-banking in developing countries and including Iraq necessitates to conduct a research. Thus, the present study aims to fill the gap and contribute in the existing knowledge field through investigation of relationship between several factors and customer adoption of the e-banking in Iraq.

C. Technology Acceptance Model

Though the information technology and communication have grown and integrated into professional and users' life, there is still an open question regarding its acceptance or rejection (Marangunić & Granić, 2015). In the recent decades, to address this question, several researchers developed theories for effective usage of technology acceptance model (TAM). A quarter century ago, TAM model was introduced by Fred Davis. TAM is widely adopted by researchers in determining the factors of users' technology acceptance. Through TAM, two variables called perceived usefulness and ease of use presumes a mediating role in a complex relationship between potential system usage and system characteristics (external variables) (Davis, 1987).

TAM successfully predicts and explains several aspects of IS adoption and user acceptance however, researchers did not find it without weaknesses. Ma, Andersson, and Streith (2005) found TAM inadequate determinant of the relationship between users' acceptance and information system technology because of the fact that perceived ease of use and perceived usefulness are considered as explanatory factors. Therefore, the present study attempted to extend the TAM model for e-banking in Iraqi context.

IV. RESEARCH MODEL AND HYPOTHESES

The main objective of this study is to determine the factors that influence the acceptance of electronic banking services in the local provinces of Iraq. The literature discovered several factors affecting the acceptance and use of e-services such as e-banking and e-government. This research considered four factors: Perceived credibility,

Accessibility, Trust, Compute Self-Efficacy. Fig 1 depicts the developed research model.
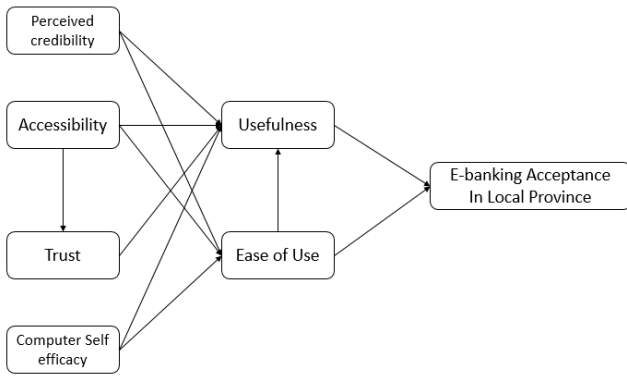

Fig. 1. Research Model

A. Theory factors: perceived usefulness and perceived ease of use

Several researchers in the information system field have consensus on validity of TAM in predicting the users' acceptance in several systems (Doll, Hendrickson, & Deng, 1998). Researchers have explored that perceived ease of use and perceived usefulness positively influence the behavioral intention to use the system (Chin & Todd, 1995; Doll et al., 1998). Furthermore, perceived ease of use positively influence the perceived usefulness (Lee, 2006). In the TAM field, several researchers have tested the hypotheses for perceived ease of use and perceived usefulness (Srite, 2006). Thus, the following hypotheses are developed:

Hypothesis 1: perceived usefulness significantly influences the government employees' acceptance to e-banking services.

Hypothesis 2: perceived ease of use significantly influences the government employees' acceptance to e-banking services.

Hypothesis 3: Perceived ease of use significantly influences the government employees' perceived usefulness for e-banking services.

B. Hypotheses on factors influencing the perceived ease of use and perceived usefulness

1) Computer self-effect:

Academicians and researchers defined the computer self-efficacy as a person's ability to use the computer for the sake of information technology usage (Compeau & Higgins, 1995; Hill, Smith, & Mann, 1986). In fact, the computer self-efficacy is not related to the individuals' past actions, but with the judgements of the future actions (Hayashi, Chen, Ryan, & Wu, 2004). Furthermore, computer self-efficacy is found not directly related to the several computer skills such as document formatting, diskettes formatting and entering formulas into spreadsheet. Relatively, it involves the judgements of the individual's capabilities to apply skills into the complex tasks at broader level.

Davis (1987) proposed the relationship between perceived ease of use and computer self-efficacy based on theoretical argument. Literature have also provided evidence for the existence of casual link between perceived use and computer self-efficacy (Amin, 1970) (Agarwal & Prasad, 1999). In Malaysia, Hanudin found that computer self-efficacy positively influences both perceived ease of use and usefulness of internet banking among young intellectuals. In Nigeria, Oni and Ayo (2010) found that computer self-efficacy positively influence perceived ease of use and perceived usefulness of e-banking. Thus, literature have revealed the critical role of computer self-efficacy in terms of its influence on perceived ease of ease and perceived usefulness (Amin, 1970; Oni & Ayo, 2010). Thus, the following hypothesis are developed:

Hypothesis 4: Computer self-efficacy significantly influence an employee's perceptions of usefulness for using e-banking services in the province.

Hypothesis 5: Computer self-efficacy significantly influence an employee's perceptions of ease of using e-banking services in the province.

2) Perceived credibility

This study considers perceived credibility for the perception of protection of users' personal data and transaction details against illegal entrance. (Amin), argued that perceived credibility refers to the privacy and security and a key indicator of behavioral intention to use information system. By definition, security refers to the protection of information systems from the illegal outflows or instructions and privacy is the protection of data collected without the users' consent during their interactions with the internet. Oni and Ayo empirically proved that perceived credibility positively influence the Perceived Usefulness and Ease of Use (Novak, Hoffman, & Peralta, 1999). Additionally, Rabaai, Zogheib, AlShatti, and AlJamal (2017) discovered the positive relationship between perceived credibility and both Perceived Usefulness and Perceived Ease of Use. Therefore, to investigate the relationship between users' acceptance of e-banking services, this study makes the following hypotheses:

Hypothesis 6: Perceived credibility significantly influence the employee's perceptions of usefulness of using e-banking services at the province.

Hypothesis 7: Perceived credibility will significantly influence an employee's perceptions of ease of using e-banking services at the province.

3) Trust

In the field of marketing research, researchers have underlined the significance of trust among the parties as an instrument favoring the relationship endurance which is an issue of great concern in the business environment (Bigne & Blesa, 2003).

In an online marketplace, trust is a belief that an organization will complete its responsibilities without getting any benefit from them (Ranaweera, McDougall, & Bansal, 2005). While perceived lack of trust increases on the internet particularly in financial transactions (Gefen, 2000) (Pitta, Franzak, & Fowler, 2006). Therefore, financial institutions must consider this issue in order to reduce the user uncertainty and generate positive beliefs about the organization's behavior (Bart, Shankar, Sultan, & Urban, 2005) (Ganesan, 1994). Past research discovered the positive relationship between trust and perceived usefulness of e-commerce (Gefen, Karahanna, & Straub, 2003; Shin, 2008). Moreover, the more the users' trust in a website leads to the more time effective use. Users will do cognitive efforts to examine the website details and

information quality (Munoz-Leiva, Hernández-Méndez, & Sánchez-Fernández, 2012). Previous studies have provided evidence for the effect of trust on usefulness (Sun, 2010; Yoon, 2009; Zhou, 2011). Therefore, the present study establish the following hypothesis:

Hypothesis 8: Trust will significantly influence an employee's perceptions of usefulness on e-banking services at the province.

4) Accessibility

Different authors define the acceptability in different dimension. For instance, Rice and Shook (Rice & Shook, 1988) define accessibility into four dimension: system reliability, access to information, accessibility of computer equipment and ease in learning the language of use. According to Karahanna and Straub (1999), accessibility encompasses the physical dimension related to the system usability and accessibility. Other studies used ease of access for the disabled persons such as hearing impaired and blind etc.

This study understands the accessibility to the information in view of ease of access to e-banking applications as well as accessibility to the transactions. Authors stated different point of view. Some stated the usability determines perceived trust and broader the concept of accessibility (Christine Roy, Dewit, & Aubert, 2001). As well as, Saeednia and Abdollahi (2012) revealed the positive and direct relationship between usability and trust. This implies differences of the relationship based on the ease of access levels that users perceive for electronic banking services. Thus, following hypothesis is developed:

Hypothesis 9: Accessibility will significantly influence an employee's perceptions of Trust of using e-banking services at the province.

Numerous studies have provided evidence that better accessibility to the information leads to the increased ease of use and information usage (Lin & Lu, 2000; Wyer & Srull, 1986). In addition, Tan and Teo (2000), Wixom and Todd (2005) and Poon (2007) revealed that users having higher accessibility of electronic banking have the higher ease of use and adopt the technological innovations early. Cyr's model well emphasized the significance of navigation system that can help the users' access to electronic system (Cyr, 2008). Thus, this study develops the following hypothesis:

Hypothesis 10: Accessibility will significantly influence an employee's perceptions of ease of use of e-banking services at the province.

Moreover, Fonchamnyo (2013) explored that higher accessibility to the electronic banking services results in the high perceived usefulness and high usage of services. Therefore, this study proposes following hypothesis:

Hypothesis 11: Accessibility will significantly influence an employee's perceptions of usefulness on e-banking services at the province.

In conclude, Table I summarizes the above hypothesis and the relationships between the endogenous and exogenous variables in the path model.

TABLE I.   HYPOTHESES TO ANALYSE

Hypothesis No	Relationship
H1	Usefulness → E-banking acceptance in Province
H2	Ease of use → E-banking acceptance in Province
H3	Ease of Use → Usefulness
H4	Computer Self-efficacy → Usefulness
H5	Computer Self-efficacy → Ease of use
H6	Credibility → Usefulness
H7	Credibility → Ease of use
H8	Trust → Usefulness
H9	Accessibility → Trust
H10	Accessibility → Ese of use
H11	Accessibility → Usefulness

V.   DATA COLLECTION AND RESEARCH VARIABLES

This study selected the sample of employees who work in two main educational institutions (Technical Institute and Thi-Qar University) at Thi-Qar province. These educational institutions are among the first agencies in the province to transfer staff salaries electronically. One hundred and fifty-one self-administrative questionnaires were distributed randomly among these two institutions. This study developed the survey instruments by using the validated items for electronic banking form the past research to access the theoretical constructs of the extended TAM model by using the scales of acceptance, perceived ease of use and perceived usefulness from Davis (Davis, 1987). Scales measuring credibility was developed using the measurement of Yang (2007), scales used for measuring computer self-efficacy were adopted from the measurement proposed by Al-Ammary (2011) and Lee (2006), and scale used for measuring accessibility was developed using the measures by Liébana-Cabanillas et al. (2013), finally, scales used for measuring trust were also adopted from the measurement proposed by (Liébana-Cabanillas et al., 2013).

VI.   DATA ANALYSIS AND RESULTS

This study used Smart-PLS 3.0 and applied the Partial Least Square (PLS) to test the model. PLS is a structure equation modeling technique to analyze the items loading on the constructs with estimating all the paths (Chiu, Hsu, Sun, Lin, & Sun, 2005). Data analysis is processed in two steps. First step was evaluation of measurement model to validate the constructs' validity and reliability. In second step, the hypotheses testing was done to test the of the path coefficients.

A. Assessing the measurement model

According to Hair at el., (Hair, Risher, Sarstedt, & Ringle, 2019) the first step in evaluating PLS-SEM results involves examining the measurement models where the model strength is measured by its validity and reliability. In the assessment of reflective measurement model, the first step involves examining the indicator loadings as referred by Hair et al.,(Hair Jr, Hult, Ringle, & Sarstedt, 2016). Loadings above 0.7 are recommended, as they indicate that the construct explains more than 50 percent of the indicator's variance, thus providing acceptable item reliability. As shown in Fig 2 all the items in the proposed

model above or equal to the threshold that recommended by Hair et al., (2014).
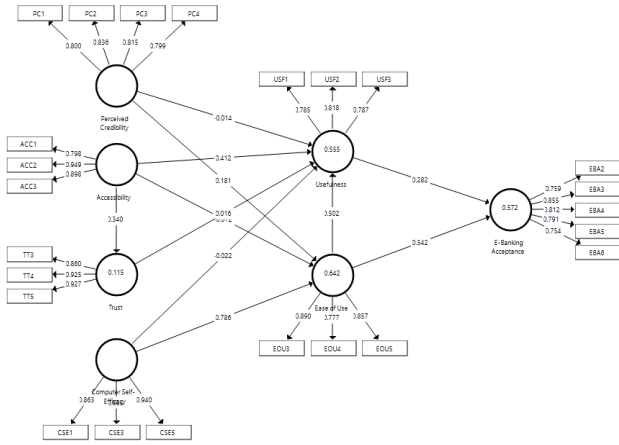

Fig. 2. E-banking Measurement Model

Second step involves the assessment of internal consistency reliability using Joreskog's (1971) reliability. The composite reliability of the different measures ranged from 0.840 to 0.931 which exceed the recommended cutoff value of 0.7 for each construct. Cronbach's alpha is one of the measures of internal consistency reliability producing lower values than composite reliability and assuming similar thresholds (Hair et al., 2019). In this study, all Cronbach's alpha values for the exogenous and endogenous constructs are higher than 0.7 as demonstrated in Table II.

TABLE II.   CONSTRUCTS RELIABILITY AND VALIDITY

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Accessibility	0.858	0.914	0.781
Computer Self-Efficacy	0.867	0.919	0.791
E-Banking Acceptance	0.854	0.895	0.632
Ease of Use	0.794	0.880	0.711
Perceived Credibility	0.832	0.886	0.660
Trust	0.888	0.931	0.818
Usefulness	0.718	0.840	0.636

In the third step, the reflective measurement model assessment involves the convergent validity of each construct measure. In convergent validity, construct explain variance of its items. The average variance extracted (AVE) metric evaluate the constructs' convergent validity for all items of constructs. Table II shows that AVE values are ranging from 0.632 to 0.818, above the recommended range (0.50), thereby establishing convergent validating for each construct.

B. Assessing the structural model

The satisfactory measurement model assessment leads to the assessment of structural model in evaluation of PLS-SEM results (Hair et al., 2019). Standard assessment criteria include the coefficient of determination (R^2), the blindfolding-based cross-validated redundancy measure (Q^2), and the statistical significance and relevance of the

path coefficients. Moreover, Al-khafaji, Azeez, Alwan, and Al-Shaher (2018) stated that, the structure model was used to estimate and evaluate the formulated hypotheses. Results in Table III demonstrated that four hypotheses, out of eleven were not supported.

TABLE III.   HYPOTHESES RESULTS

Hypothesis	Relationship	t-value	p-value	Decision
H1	Usefulness → E-banking acceptance in Province	3.526	0.000	Supported
H2	Ease of use → E-banking acceptance in Province	7.331	0.000	Supported
H3	Ease of Use → Usefulness	3.448	0.001	Supported
H4	Computer Self-Efficacy → Usefulness	0.162	0.872	Not Supported
H5	Computer Self-efficacy → Ease of use	51.618	0.000	Supported
H6	Credibility → Usefulness	0.166	0.868	Not Supported
H7	Credibility → Ease of use	2.064	0.040	Supported
H8	Trust → Usefulness	0.269	0.788	Not Supported
H9	Accessibility → Trust	3.783	0.000	Supported
H10	Accessibility → Ese of use	0.788	0.431	Not Supported
H11	Accessibility → Usefulness	4.258	0.000	Supported

Sspecifically, hypotheses: H4 (t-value, 0.162), H6 (t-value, 0.166), H8 (t-value, 0.269) and H10 (t-value, 0.788) are not supported. The outcome for analysis phases also indicated that, usefulness and Ease of Use toward E-banking Acceptance are supported. This result also supported by Al-Ammary (2011), who stated that, perceived ease of use and perceived usefulness strongly influence the acceptance of new technologies. On the other hand, trust was directly influenced by the accessibility. Thus, H9 is supported. Furthermore, the results show that ease of use was directly influenced by credibility and computer self-efficacy, while accessibility has no effect of this factor. The value of R^2 explains an acceptable prediction level for endogenous variables such as E-banking, Ease of Use, Trust, Usefulness. Where, R^2 of chief target construct of the current empirical study (e-banking acceptance in Local Province) has an acceptable value of 0.572. Meanwhile, the R^2 for each of ease of use, trust and usefulness was 0.642,0.115 and 0.555 respectively. This study supports the findings of previous studies using the Q square predictive relevancy measure, as indicated in Table IV.

TABLE IV.   EVALUATING EFFECT SIZE

Path	Constructs	R^2	Q^2	f^2	Decision
	E-banking	0.527	0.324		
	Ease of Use	0.642	0.425		
	Trust	0.115	0.086		
	Usefulness	0.555	0.267		
H1	Usefulness → E-banking acceptance in Province			0.109	Small

				0.402	Large
H2	Ease of use → E-banking acceptance in Province			0.402	Large
H3	Ease of Use → Usefulness			0.197	Medium
H4	Computer Self-Efficacy → Usefulness			0.000	Rejected
H5	Computer Self-efficacy → Ease of use			1.371	Large
H6	Credibility → Usefulness			0.000	Rejected
H7	Credibility → Ease of use			0.058	Small
H8	Trust → Usefulness			0.000	Rejected
H9	Accessibility → Trust			0.130	Small
H10	Accessibility → Ese of use			0.008	Rejected
H11	Accessibility → Usefulness			0.200	Medium

Based on the Hair et al., (2019), the last step for path model assessment is to obtain Q^2 and f^2 value. In smart PLS software, we get Q^2 via executing blindfolding procedure with omission distance (D) = 7 for e-banking (0.324), trust (0.086), usefulness (0.267) and ease of use (0.425). PLS scholars state that Q^2 above zero indicate the predictive significance in the path model. Researchers also assessed the effect size of (f^2) based on threshold suggested by (Cohen, 2013). In Table III shows that, hypothesis H1, H7 and H9 have small while H3 and H11 showed medium effect size, while H2 and H5 depicted large effect size.

VII. DISCUSSION AND CONCLUSION

Most of the Iraqi financial institutions are offering electronic banking services to their customers without knowing that users will accept or not these new services which may hinder the implementation of the e-banking services and continuity to apply it. It raises a great need to identify the factors affecting the e-banking acceptance. The current research contributes in the knowledge field through the investigation for the impact of several factors on user acceptance for new e-banking services. Specifically, this study determines the factors of e-banking acceptance. Several researchers have determined the factors of acceptance of new innovation including e-banking. In continuation, this study extended the existing Technology Acceptance Model (TAM) through adding Credibility, computer self-efficacy, trust and accessibility as determinants of acceptance of e-banking. The findings revealed that, four out of eleven hypotheses have no significant impact on e-banking services acceptance. In sum up, factors such as Trust, usefulness. Ease of use, and Accessibility will enhance electronic banking services acceptance.

This study contributes for both managers and academics alike. Academically, this work draws the attention to the neglected areas of marketing and information technology of Iraqi banking services. Currently, in the Iraq, there is a distinct lack of research studies. Unlike other countries, Iraq is one of the new countries in application of e-banking services.

Along with electronic banking usage, there is need of several other reforms such as equal distribution of ATMs within and between Iraqi provinces to provide more accessibility for clients. In addition, there is still need for more e-channels such as e-transactions, credit card transactions, online utility bills payments. Banks are required to set up problem management systems to resolve the transactions related issues. The current Iraqi infrastructure is insufficient to fulfil the e-banking technology requirements in whole country. Therefore, the new government is required to play to play the major role in promoting the basic infrastructure to promote the e-banking which may include the supply of latest information and communication technology and electricity. In addition, legislation is required to enact to protect e-transactions.

The current study has several limitations and potential areas for future studies. This study ignores the influence of socio-cultural factors and gender on acceptance of e-banking and only focused on one Iraqi province (Thai-Qar) therefore, future studies may focus other areas of Iraqi province. To increase the accuracy of findings, researchers can increase the number of samples. Future studies can gather data from other parts of the world.

REFERENCES

Adewoye, J. (2013). The impact of automatic teller machines on the cost efficiency of Nigeria. *18*(3), 1-21.

Agarwal, R., & Prasad, J. (1999). Are individual differences germane to the acceptance of new information technologies? *Decision Sciences, 30*(2), 361-391.

Ahmad, A. E. M. K., & Al-Zu'bi, H. A. (2011). E-banking functionality and outcomes of customer satisfaction: an empirical investigation. *International Journal of Marketing Studies, 3*(1), 50.

Ajayi, I. E., & Enitilo, O. (2016). Impact of Electronic Banking on Bank Performance in Ekiti State, Nigeria. *International Journal of Multidisciplinary and Current Research, 4*.

Al-Ammary, J. (2011). *The Acceptance and use of Educational Technology in Kingdom of Bahrain.* Paper presented at the Proceedings of The International Conference On Information Management & Evaluation.

Al-khafaji, N. J. F. (2016). *G2G interaction model of information sharing among local agencies based on phenomenology approach: Dhi-qar province employees' viewpoints.* Universiti Utara Malaysia,

Al-khafaji, N. J. F., Azeez, H. H., Alwan, M. A., & Al-Shaher, H. J. (2018). Critical Variables that Impede Electronic Information Sharing: Administrator's and Lecturer's Standpoint. *Journal of Engineering and Applied Sciences, 13*(7), 1654-1662.

Allen, F., McAndrews, J., & Strahan, P. (2002). E-finance: an introduction. *Journal of Financial Services Research, 22*(1-2), 5-27.

Amin, H. (1970). Internet banking adoption among young intellectuals. *The Journal of Internet Banking and Commerce, 12*(3), 1-13.

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study. *Journal of marketing, 69*(4), 133-152.

Baten, M. A., & Kamil, A. A. (2010). E-banking of economical prospects in Bangladesh. *Journal of internet Banking and Commerce, 15*(2), 1-10.

Bigne, E., & Blesa, A. (2003). Market orientation, trust and satisfaction in dyadic relationships: a manufacturer-retailer analysis. *International Journal of Retail & Distribution Management, 31*(11), 574-590.

Chin, W. W., & Todd, P. A. (1995). On the use, usefulness, and ease of use of structural equation modeling in MIS research: a note of caution. *MIS quarterly*, 237-246.

Chiu, C.-M., Hsu, M.-H., Sun, S.-Y., Lin, T.-C., & Sun, P.-C. (2005). Usability, quality, value and e-learning continuance decisions. *Computers & education, 45*(4), 399-416.

Christine Roy, M., Dewit, O., & Aubert, B. A. (2001). The impact of interface usability on trust in web retailers. *Internet research, 11*(5), 388-398.

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*: Routledge.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 189-211.

Cyr, D. (2008). Modeling web site design across cultures: relationships to trust, satisfaction, and e-loyalty. *Journal of Management Information Systems, 24*(4), 47-72.

Daniel, E. (1999). Provision of electronic banking in the UK and the Republic of Ireland. *International Journal of bank marketing, 17*(2), 72-83.

Davis, F. D. (1987). User acceptance of information systems: the technology acceptance model (TAM).

Dhandayuthapani, S., & SELVACHANDRA, M. (2013). E-BANKING PRACTICES AND CUSTOMER SATISFACTION-IN THANJAVUR DISTRICT, TAMILNADU: AN EMPIRICAL STUDY.

Doll, W. J., Hendrickson, A., & Deng, X. (1998). Using Davis's perceived usefulness and ease‐of‐use instruments for decision making: a confirmatory and multigroup invariance analysis. *Decision Sciences, 29*(4), 839-869.

F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review, 26*(2), 106-121.

Fonchamnyo, D. C. (2013). Customers' perception of e-banking adoption in Cameroon: an empirical assessment of an extended TAM. *International Journal of Economics and Finance, 5*(1), 166-176.

Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *Journal of marketing, 58*(2), 1-19.

Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega, 28*(6), 725-737.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Inexperience and experience with online stores: The importance of TAM and trust. *IEEE Transactions on engineering management, 50*(3), 307-321.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24.

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage publications.

Hayashi, A., Chen, C., Ryan, T., & Wu, J. (2004). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems. *Journal of Information Systems Education, 15*(2).

Hill, T., Smith, N. D., & Mann, M. F. (1986). Communicating innovations: Convincing computer phobics to adopt innovative technologies. *ACR North American Advances*.

Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika, 36*(4), 409-426.

Karahanna, E., & Straub, D. W. (1999). The psychological origins of perceived usefulness and ease-of-use. *Information & Management, 35*(4), 237-250.

Lee, Y.-C. (2006). An empirical investigation into factors influencing the adoption of an e-learning system. *Online information review, 30*(5), 517-541.

Liébana-Cabanillas, F., Muñoz-Leiva, F., & Rejón-Guardia, F. (2013). The determinants of satisfaction with e-banking. *Industrial Management & Data Systems, 113*(5), 750-767.

Lin, J. C.-C., & Lu, H. (2000). Towards an understanding of the behavioural intention to use a web site. *International journal of information management, 20*(3), 197-208.

Lustsik, O. (2003). E-banking in Estonia: reasons and benefits of the rapid growth. (21).

Ma, W. W. k., Andersson, R., & Streith, K. O. (2005). Examining user acceptance of computer technology: An empirical study of student teachers. *Journal of computer assisted learning, 21*(6), 387-395.

Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society, 14*(1), 81-95.

Munoz-Leiva, F., Hernández-Méndez, J., & Sánchez-Fernández, J. (2012). Generalising user behaviour in online travel sites through the Travel 2.0 website acceptance model. *Online information review, 36*(6), 879-902.

Nimako, S. G., Gyamfi, N. K., & Wandaogou, A. M. M. (2013). Customer satisfaction with internet banking service quality in the Ghanaian banking industry. *International journal of scientific & technology research, 2*(7), 165-175.

Novak, T., Hoffman, D., & Peralta, M. (1999). Building consumer trust online. Communications of the ACM.

Odumeru, J. A. (2012). The Acceptance of E-banking by Customers in Nigeria. *World Review of Business Research, 2*(2), 62-74.

Olatokun, W. M., & Igbinedion, L. J. (2009). The adoption of automatic teller machines in Nigeria: An application of the theory of diffusion of innovation. *Issues in Informing Science & Information Technology, 6*.

Oni, A. A., & Ayo, C. K. (2010). An empirical investigation of the level of users' acceptance of e-banking in Nigeria. *15*(1), 1-13.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet research, 14*(3), 224-235.

Pitta, D., Franzak, F., & Fowler, D. (2006). A strategic approach to building online customer loyalty: integrating customer profitability tiers. *Journal of consumer marketing, 23*(7), 421-429.

Poon, W.-C. (2007). Users' adoption of e-banking services: the Malaysian perspective. *Journal of Business & Industrial Marketing, 23*(1), 59-69.

Rabaai, A. A., Zogheib, B., AlShatti, A., & AlJamal, E. M. (2017). Adoption of e-government in developing countries: the case of the state of Kuwait. *6*(10).

Ranaweera, C., McDougall, G., & Bansal, H. (2005). A model of online customer behavior during the initial transaction: Moderating effects of customer characteristics. *Marketing Theory, 5*(1), 51-74.

Rice, R. E., & Shook, D. E. (1988). Access to, usage of, and outcomes from an electronic messaging system. *ACM Transactions on Information Systems (TOIS), 6*(3), 255-276.

Riyadh, H. A., Sukoharsono, E. G., & Baridwan, Z. (2016). E-banking Implementation and Technology Acceptance in the Rafidain and Rasheed Banks in Iraq: an Employee Perspective. *The International Journal of Accounting and Business Society, 23*(2), 87-113.

Robinson, G. (2000). Bank to the future. *Internet Magazine*.

Saeednia, H., & Abdollahi, H. (2012). Factors affecting client trust in online banking-A case study of Saman Bank. *International journal of economics and business modeling, 3*(1), 149.

Samar, S., Ghani, M., & Alnaser, F. (2017). Predicting customer's intentions to use internet banking: the role of technology acceptance model (TAM) in e-banking. *Management Science Letters, 7*(11), 513-524.

Shin, D. H. (2008). Understanding purchasing behaviors in a virtual economy: Consumer behavior involving virtual currency in Web 2.0 communities. *Interacting with computers, 20*(4-5), 433-446.

Skvarciany, V., & Jurevičienė, D. (2018). Factors Influencing Individual Customers Trust in Internet Banking: Case of Baltic States. *Sustainability, 10*(12), 4809.

Srite, M. (2006). Culture as an explanation of technology acceptance differences: An empirical investigation of Chinese and US users. *Australasian Journal of Information Systems, 14*(1).

Sun, H. (2010). Sellers' trust and continued use of online marketplaces. *Journal of the Association for Information Systems, 11*(4), 2.

Tan, M., & Teo, T. S. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for Information Systems, 1*(1), 5.

Toor, A., Hunain, M., Hussain, T., Ali, S., & Shahid, A. (2016). The impact of E-Banking on customer satisfaction: Evidence from banking sector of Pakistan. *Journal of Business Administration Research, 5*(2), 27-40.

Wixom, B. H., & Todd, P. A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information systems research, 16*(1), 85-102.

Wyer, R. S., & Srull, T. K. (1986). Human cognition in its social context. *Psychological review, 93*(3), 322.

Yang, K. C. (2007). Factors influencing Internet users' perceived credibility of news-related blogs in Taiwan. *Telematics and Informatics, 24*(2), 69-85.

Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China. *Information & Management, 46*(5), 294-301.

Zhou, T. (2011). Examining the critical success factors of mobile website adoption. *Online information review, 35*(4), 636-652.