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**The Moderating Effects of Trust and Attitude on**  
**E-Banking Acceptance in The Kurdistan Region of**  
**Iraq:**  
**University of Sulaimani Catchment Area**

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## **Table of Contents**

<b>Abstract</b> .....	4
<b>Research background</b> .....	5
<b>Research problem</b> .....	8
<b>Research objectives</b> .....	9
<b>Research questions</b> .....	10
<b>Scope of the study</b> .....	10
<b>Acceptance of E-Banking in Kurdistan</b> .....	12
<b>Data analysis</b> .....	19
<b>Findings implications</b> .....	20
<b>Theoretical implications</b> .....	20
<b>Practical implications</b> .....	21
<b>Limitations and future research directions</b> .....	23
<b>List of new scientific results of the study</b> .....	25
<b>Curriculum Vitae</b> .....	27
<b>References:</b> .....	30

## **Abstract**

The considerable development in banking systems all around the world is a response to the change in people's current lifestyle. One of the major changes is the introduction of new technology into the system, which is called E-Banking. The banking system in the Kurdistan Region of Iraq operates in traditional ways, with no challenging features existing to meet the requirement of this century. This study investigates the effect of individual factors and system/service factors on user behaviour and the moderating role of trust and attitude in the relationship between individual factors and system/service factors on behavioural intention based on the Unified Theory of Acceptance and Use of Technology and Technology Acceptance Model. This research proposes a model with a second-order components research framework that improves current explanations of Electronic Banking channel services acceptance, based on a systematic relevant literature review from a total of 160 articles and highlighting the role of trust and attitude on the acceptance of Electronic Banking channel services, which is the most important key concern that influences effective consumer user behaviour and decisions to accept Electronic Banking channel services. Thus, trust is the spine of the system in the Kurdistan Region of Iraq. Data were collected using an online questionnaire that received 476 valid responses from academic staff who work at the University of Sulaimani in the Kurdistan Region of Iraq. The model tested data using the Partial Least Squares-Structural Equation Modelling approach. The results show that individual factors and system/service factors have a significant effect on user behaviour indirectly by mediating behavioural intention, and also shows that trust moderates the relationship

between (individual factors and behavioural intention). Besides, attitude has an insignificant moderator role of both relationships in this study.

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**Keywords:** Hawala system; Cash-less society; Decision maker; Lifestyle; PLSpredict.

## **Research background**

E-Banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic and interactive communication channels. It includes systems that enable financial institutions, customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the internet (FFIEC, 2003).

The banking system in the Kurdistan region of Iraq operates in traditional ways, in which no challenging features exist to meet the requirement of this century. There are considerable developments in banking systems all around the world as a response to the changes in people's current lifestyle. One of the major changes is introducing the new technology into the system, which is called E-Banking.

However, the operation of the E-Banking service in the Kurdistan region of Iraq still does not use modern electronic system, and there are many factors beyond the initiation of this technology. The factors are numerous, but trust in the security of using this system safely and effectively could be the most significant factors in achieving the success for the bankers (Chong et al., 2010).

Trade and business movement in the region has been growing up in the last two decades, where the region runs independently by Kurdish authorities within the Iraqi government. This gives a great opportunity for traders to commence a wide, global and rapidly moving. In addition, AbuShanab and Pearson, (2007) investigated the key determinants of the adoption of Internet Banking in Jordan. The study also attempted to validate the appropriateness of the Unified Theory of Acceptance and Use of Technology (UTAUT) within the context of Internet Banking. The results showed that UTAUT provides a good foundation for future technology acceptance research. The results also indicated that gender moderated the relationships between the three independent variables and the dependent variable (Behavioural Intention). The most important problems that came into the face of this trend were the transition of the money, buying of products, dispatching, etc, where there was no bank to cooperate with them effectively. In the time before the toppling of Saddam's government the traders collaborated with the Iraqi Central Bank, which took responsibility for all their trade affairs. Therefore, the traders in the region seek out the cooperative banks in the neighbouring countries and abroad instead of adopting an effective E-Banking to overcome all these obstacles and create a very strong trade trend through the region. In this research, the factors which have the main influence on the adoption and operation of a very effective E-Banking system, are studied, in particular the trust and attitude, which are the spinal elements in the structure of this system, as the region is still in an unsteady situation politically and might not guarantee to preserve customers' rights. Therefore, the people's belief in the system was always in doubt and the government did not attempt to build up this

confidence even towards their banks (Baabdullah et al., 2019a, b). On the other hand, Nikghadam Hojjati and Reza Rabi, (2013) investigated the influence of online behaviour of Internet users on the adoption of Internet Banking in Iran. The results revealed that the use of the internet for work or teamwork, selling or buying, finance activities or Banking operations, and reading news, has significant relevance to Internet Banking adoption, but using the Internet with the purpose of having fun and entertainment and seeking commercial information does not have a significant effect on Internet Banking acceptance. Also, the results found that using the Internet for reading news and hedonistic goals has a negative effect on accepting Internet Banking. Other purposes of using Internet that were examined in this study had a significant effect on Internet Banking adoption in Iran.

In obtaining very reliable outcomes of this research, a very comprehensive literature review related to E-Banking in addressing these factors and their influences is ongoing. The initial conclusion from these pieces of research shows that trust and security are considered the main factors that influence Banking customers' confidence in using the service. As far as I know, there is no serious and accurate study on this service that has been done in the KRI and this research is going to be the first academic study in this area.

Poon, (2008) investigated the determinants of users' adoption momentum of E-Banking in Malaysia. Results indicated that all elements of ten identified factors were significant with respect to the users' adoption of E-Banking services. Privacy and security were the major sources of dissatisfaction, which had momentarily impacted users' satisfaction. Meanwhile, accessibility, convenience, design and content were sources of

satisfaction. Besides, the speed, product features, availability, and reasonable service fees and charges, as well as the bank's operations management factor were critical to the success of the E-Banks. WAP, GPRS and 3G features from mobile devices were of no significance or influence in the adoption of E-Banking services. The results also revealed that privacy, security, and convenience factors played an important role in determining the users' acceptance of E-Banking services with respect to different segmentation of age group, education level and income level.

This study focuses on the review conclusion in addressing numerous of emerging trends in operating a successful E-Banking system such as (Characteristics of Electronic Banking, Innovation attributes and attitude, Trust in mobile banking, Customer attitude, Individual Factors, System/Service Factors etc.,) (Hama Khan, 2019; Khan, Y. H, 2018; Hamakhan, 2020; M. Hamakhan, 2020).

## **Research problem**

A number of studies examined the effect and the impact of accepting new technology on users' decision directly or indirectly worldwide, specifically Electronic Banking channel services (Siyal et al., 2019; Chawla and Joshi, 2018; George, 2018; Kumar et al., 2018; Saji et al., 2018; Chawla and Joshi, 2017; Kumar et al., 2017). However, there is no study in the KRI related to accepting E-Banking services, which is an issue that needs to be investigated empirically.

Despite the huge number of studies in this area, most of the studies in the current literature did not employ UTAUT. However, none of the studies



used its variables as a second-order components, which means none of them tested them empirically. This is a gap in the existing literature, therefore in this study, the researcher extends UTAUT, however, with less hypothesis by employing a second-order components technique, which is shown in the framework, namely Individual Factors.

In terms of security/privacy, quality, innovativeness, and task characteristics, there is also a gap in the existing literature. None of the previous studies determined their effect in one framework (all together). Accordingly, this study employs all of them by using a second-order components method, namely system/service factors, which is shown in the proposed theoretical framework. Besides, this study provides insight into the mediating effect of behavioural intention that can mediate the relationship between two of individual factors and system/service factors on user behaviour.

With regard to the moderating role, none of the previous studies had shed light on the moderating role of each of attitude and trust as a moderator, which means no framework tested trust and attitude as a moderator that has an effect and role on accepting E-Banking. Therefore, this research investigates trust and attitude in the framework as a moderator, in order to indicate their effect.

## **Research objectives**

This research aims to investigate the moderating effects of trust and attitude on E-Banking acceptance in the Kurdistan Region of Iraq. In addition, it aims to obtain an explicit insight into the factors impeding the E-Banking services development within the E-Banking system in the KRI.

It reviews the nation-wide E-Banking readiness and surveys the local E-Banking service system. In order to facilitate the formulation of more effective and appropriate future government programs on E-Banking services development in the E-Banking services system, it is essential to attain a clear awareness of the key issues inhibiting the E-Banking services acceptance based on TAM, and UTAUT, hence, this research is set to:

- To examine the significant effects of mediating of Behavioural Intention on each of relationships Individual Factors and User Behaviour and System/Service Factors and User Behaviour.
- To investigate the role of moderator factors, such as Trust and Attitude on accepting E-Banking services in the KRI.

## **Research questions**

In order to create research hypotheses for the research framework, the following research questions should be formulated, in order to achieve the aims and objectives of this study:

1. To what extent do individual factors and system/service factors affect behavioural intention?
2. To what extent do trust and attitude moderate the relationship between individual factors and behavioural intention?
3. To what extent do trust and attitude moderate the relationship between system/service factors and behavioural intention?

## **Scope of the study**

The banking industry is one of the most important sectors in the financial world, whether it is traditional (offline banking) or modern (electronic

banking system), and specifically, for developing countries, such as the Kurdistan Region of Iraq. Thus, this study concentrates on moderating roles on accepting E-Banking system in the KRI. A theoretical framework is built based on TAM and UTAUT by using a second-order components method to reduce the number of hypotheses, and a more concreted theoretical framework in order to get a more reliable conceptual framework, thus each of individual factors and system/service factors built as a second-order components in the framework.

With regard to the literature, to the best of my knowledge, this study is the first empirical study about accepting E-Banking services in the KRI, and the first study that tests trust and attitude as a moderator in the proposed framework. This study investigates the effect of individual factors and system/service factors on user behaviour and the moderating role of trust and attitude in the relationship between individual factors and system/service factors on behavioural intention based on the Unified Theory of Acceptance and Use of Technology and Technology Acceptance Model, besides it is based on a systematic relevant literature review from a total of 160 articles.

In addition, this study also focuses on the practical and managerial implications that shed light on moderating roles (trust and attitude) in the framework and the effects of each of the individual factors and system/service factors on user behaviour. As a result, we can study effects on the managers' decision and concerns about customers' decision about accepting E-Banking services. This study is concerned with building a strong banking system with a high quality of security and privacy for

customers, which could increase the number of ATMs in the KRI. On the other hand, the study is concerned with the availability of banking mobile application for different mobile operating systems, such as (iPhone, Samsung, Huawei etc.). In short, this study seeks to offer the best way to find the most effective factors that can influence the acceptance of E-Banking in the KRI, such as trust, which, is considered as a spinal factor in the region.

### **Acceptance of E-Banking in Kurdistan**

In the KRI, working-age of the Kurdish population (15 to 64 years old) was 37.8% of the inhabitants, however, more than 21% of the Kurdish working population consists of young people, who are between (15 and 24 years old), which, men were 69.7% of the population, besides women were 12.9% of the population based on economic activities. However, 17.4% of the population is unemployed, which includes both male and female workers. Others works in different sectors, such as agriculture, tourism, industry, commerce, services, and ownership, which contributes to the GDP. GDP includes commodity sector contributions totalling only 11% of activities, distribution activities (65%) and service activities (24%). All figures are from 2008. In addition, GDP reached IQD 24,725.7 billion in 2008 and increased from 2008 by 8% annually with a total growth rate of 5.2% in 2016. However, the Kurdistan Region Government (KRG) economy has experienced a significant downturn, since 2014, because of so-called the Islamic State of Iraq and Syria (ISIS), and the presence of 1.8 million Syrian refugees and 1,003,300 Iraqi internally displaced persons in the KRI in early 2015. The problem is that the KRG economy is mainly based on the Oil sector, which is accounts for more than 60 percentage of

GDP, while other non-Oil sectors cannot be a significant part of the strong economy for the KRG, which needs to grow significantly in order to support its fiscal sector. Although many developed countries' economies are based on taxes (e.g., European Countries), in the KRI only 3.5% of GDP consists of taxes. 5% is deducted from government employee's monthly salaries and 12% from private sectors' workers, combined from 5 percentage of the worker's payment and 7 percentage from the company payment. On the other hand, private sector employers pay 15 percentage of tax on their sales. Companies are exempt from taxes and import tariffs when their project is registered in and licensed by the Board of Investment. The government also receives 9% tax from the rental of houses and 2% on the rental of land. Independent technical professions shops, such as carpeting and blacksmith pay between 3 and 10% in tax, which is called vocational tax (World Bank, 2016 & 2017; Nasr, 2011).

Despite having significant high risks of developing economics of the KRI, such as fragilities of governance, institutional capacity issues, technical capability, political factors, and security issues (e.g., ISIS), the economy remains macro-economically stable because of high oil revenues and prices. In these circumstances, it is significantly difficult to reform the financial sector (e.g., Banking system) in the KRI (World Bank, 2016 & 2017; Nasr, 2011).

Beyond, the challenges the KRG faces, such as underperformance of finance management, lack of clear strategic planning of the state budget, the general trend with respect to public expenditure structure, insufficient capacity to create job opportunities, and a decline in revenues, the KRG

spent significant effort and invested different sources in order to have a sustainable banking system service and an electronic banking service in order to make strong economic progress through a strong financial system. Since 2003, particularly because the KRI remains largely a cash-economy and has suffered a fiscal crisis, this change can be seen in private Banks in the KRI provide a necessary response to the requirement of today's situation in terms of local and international economics. For example, the number of private Banks significantly increased from 16 to 24 with a combined capital size of IQD 2,012.280 billion in 2009. Rafidain Bank and Rasheed Bank are two public local Banks that can represent commercial state-run Banks. The total deposits at these two banks reached IQD 1,507.044 billion. The public sector share comes to IQD 1,107.317 billion, which represented 73.5%. Companies, associates and individuals held IQD 396.912 billion, representing 26.3%, in addition to IQD 2.815 billion for the joint-sector, representing 0.2%, outlined in 2009 (World Bank, 2016 & 2017; Nasr, 2011).

The banking system in the KRI operates in traditional ways, with no challenging features existing to meet the requirements of this century. The central bank of the KRI has two offices in the KRI, which are located in Erbil and Sulaymaniyah, however, none of them has a branch that customers can use or belongs to the central bank of Iraq, which is located in Baghdad, and is controlled by the Iraqi government. The two offices are responsible all financial procedures, for example, distributing government employees' salaries, and other banking activities in the KRI. The Local Governance Project (LGP) is funded by the United States Agency for International Development (USAID) and implemented by RTI-

International made a report about Economic Development Assessment in the KRI. Accordingly, 49 Banks are operating in the region with 56 branches. All six state-owned banks are operating in the KRI. Forty-three private Banks operate in the KRI, which comprise 66% of the Banking system. Erbil has the largest concentration of Banks with 48 Banks, of which private Banks share 64%. Sulaymaniyah has 34 offices, 55%, which are private, and 17 Banks operate in Dahuk 47% of which are operated by private Banks. Only two Banks have their main offices located in the KRI: Emerald Bank and Kurdistan International Bank. Currently, Bank Byblos, a Lebanese Bank, is the only foreign Bank branch operates in the KRI. Other Banks have foreign ownership that operates; however, their headquarters are in Baghdad. These are Tigris and Euphrates Bank, Bank Baghdad, Credit Bank of Iraq, and Dar Es Salaam Bank. The payment system in Kurdistan Region is traditional (a cash society), however, there is no official statistical source for payment, only a CIPE research. Private Banks cannot compete in the banking sector, since they do not have access to important liquidity sources, and do not have access to distribute salary for the KRG employees, which gives them limited access to financial activity. Moreover, Iraq has two public Banks (state-owned), which can service the KRG, which not let private Banks participate and compete in this fiscal activity. In this domain, private Banks can be seen as a disadvantage and useless in the KRI. On the other hand, private Banks can provide loans and mortgages, transferring money and exchanging currency. However, generally they are still by far quite small (World Bank, 2016; Nasr, 2011).

Nowadays, Hawala plays a major part in the financial marketplace in the KRI and affects the banking sector (Passas, 2005a, b), even in the future.

It is not just a habit, it becomes a trusted and easy way for people to operate in a cash society. Hawala is a local traditional transaction system (Schramm & Taube, 2003) for money transfer between the KRI and other countries, no matter for the business or for other purposes, based on using the Jordan, Iran or United Arab Emirates banking sector. Most of the foreign exchangers' offices use Hawala instead of using the KRG banking system (Bunt, 2008; Liargovas & Repousis, 2011).

The Hawala system is cheaper, faster and more trustworthy compared to the banking system, based on previous performance of banking system in the KRI (Faith, 2011; Ismail, 2007). People have enough experience with the Hawala system and trust it more than the banking system. Unfortunately, there is no official statistics that exist regarding the level of Hawala activity, however, USAID (2008) reported Hawala transactions to account for substantially more than half the currency in circulation held outside the banking sector. Anecdotal evidence suggests that the volume of Hawala transactions easily exceeds the equivalent of US \$3 billion annually just in the KRI.

The word of “hawala” in the Arabic Language means “transfer” or “wire” (Razavy, 2006). The word hawala comes from the Arabic root hwl (حول), without money movement, it means to “change” or “transform.” (Sharif et al., 2016; Redín et al., 2014). As it is known, Kurdistan’s economic is cash-based, and since 2004 the financial sector has been under improved. Hawala still commonly exists in the KRI. According to the USA embassy website in Iraq and their report about Hawala, there are 2,000 financial institutions that they practice Hawala and exchange their currency through



the Hawala system. In general, people accept the US dollar, although Euro and British Pound also can be accepted. This situation exists because of the lack of a Banking system in the region. Moreover, the Hawala system is used for both legitimate and illegitimate reasons, with no investigations and fines of them, and no fully financial monetary system to prohibit illegitimate situations. Many of the Hawaladars are licensed by the government. Therefore, financial chaos exists in the region, it is commonly known as financial corruption (fiscal crisis) (Soudjin, 2015). Money laundering is an important problem in the region, particularly in Iraq, which is linked to the Hawala system (Shanmugam, 2004; De Goede, 2003; Schneider, 2010; Veul et al., 2017). The Hawala system can significantly affect the economics of the KRI, for example, the Hawala system can reduce the liquid cash in circulation. On the other hand, it can be the opposite of existing inflation on the KRI's economics. The Hawala system works in a very easy way by code, other secret way or directly from A person to B person, thus a number of the money exchangers perform Hawala. Nowadays, they use email or mobile phone to transfer the amount of cash, besides handling fee and obtain money back from another part, who is trusted. Then customers can obtain the same amount of money in cash. This is seen as Informal Payments Systems in terms of economic perspective (Wilson, 2002).

The considerable development in banking systems all around the world is a response to the change in people's current lifestyle (Wang, 2011; Viles, 2008). One of the major changes is the introduction of new technology into the system, which is called E-Banking. We need to understand the value of this new technology and its influence on individuals and organisations.

That will be the strategy to ensure customers' acceptance in the technology environment. According to Venkatesh and Brown, (2001), E-Banking should be accepted, trusted, adopted and used. However, the operation of the E-Banking system in the KRI is still out of this new system, where many factors are beyond the initiation of this technology. Moreover, numerous factors affect acceptance of this system as safe and effective. trust and attitude could be the most significant factors in order to achieve acceptance of the system successfully for the bankers (Hama Khan, 2019; Khan, 2018). The trade and business movement has grown in the last fifteen years, where the KRI has been runs independently by Kurds. This autonomy gives a great opportunity for traders to commence a wide and global trade in a rapid movement. The most important problems that came into the face of this trend were the transition of the money, buying of products, dispatching, etc, because no bank was to cooperate with them effectively. In the time before the toppling of Saddam's government the trades were collaborated by the Iraqi Central Bank, which took responsibility of all trade affairs for traders. Therefore, the trades in the region now seek out cooperative banks in the neighbouring countries and abroad instead of adopting an effective E-Banking system to overcome all these obstacles and create a very strong trade trend through the region (Lymperopoulos and Chaniotakis, 2004; Alaarj et al. 2016; Alaaraj et al. 2018).

This research covers the factors which have the main influence in the acceptance and adoption of a very effective of E-Banking system, and in particular trust and attitude. Which are the spinal elements in the structure of this system as the region still goes through the unsteady situation

politically and might not guarantee to preserve customers' rights? Therefore, the public has always doubted the system and the government has never attempted to build up their confidence in it. To obtain reliable outcomes for this research, a very comprehensive literature review related to E-Banking, addressing these factors and their influences, is ongoing. The initial conclusion from these pieces of research shows that trust and attitude are considered the main factors that influence banking customers' confidence in accepting and using the service. As far as it is believed that there is no serious and accurate study on this service in the KRI, this research is going to be the first academic study in this area. In addition, a group of studies has been selected about acceptance and adoption of E-Banking globally.

## **Data analysis**

After collecting them from questionnaires and coding, the data need to be analysed by taking steps and using some statistical tools by employing statistical software. Statistical analyses were conducted to investigate the effect of unobservable variables in the data obtained and the validity and reliability of the proposed model presented in this research.

In social science, data mostly are nonnormal distribution, besides, in this study, the data are also nonnormal distributed, thus the model tested data using the partial least squares structural equation modelling (PLS-SEM) approach.

PLS-SEM is an excellent methodological alternative for theory testing. PLS-SEM is not recommended as a universal alternative to CB-SEM. Both methods differ from a statistical point of view. (Hair et al., 2017a). One of

the statistical methods is SEM, SEM is a powerful statistical method (second-generation statistical methods) that can identify relationships in social science research that likely would not otherwise be found (Hair et al., 2017a, b). In this study, PLS-SEM has been used. Therefore, it can help for the exploratory phase of my research and the empirical development of the theory. PLS-SEM can also maximise the endogenous latent variables' explained variance by estimating partial model relationships in an iterative sequence of ordinary least squares (OLS) regressions. On the other hand, there is an alternative method for a testing theory, which is PLS-SEM. When conceptualising the theoretical constructs and their hypothesised structural relationships for PLS-SEM, it is important to make sure the model has no circular relationships.

## **Findings implications**

### **Theoretical implications**

Regarding the theoretical implications for this research, beyond the most widely cited of UTAUT as a fundamental and theoretical guidance for the scope of this study. Specifically, the research framework is based on UTAUT and extended with other factors that can play a major effect on the acceptance of new technology such as E-Banking services in the KRI, which are shown in the research model framework. Because previous studies have shown that UTAUT was not enough to show the degree of this effect, this study extends UTAUT in order to investigate the degree of moderating effect of trust and attitude based on the second-order components framework. The second-order components can lead to more concrete theoretical achievements, on the other hand, to reduce the number

of hypotheses in the paths. Individual factors and system/service factors build second-order components, besides, and in this study highlight the effect of trust and attitude as moderators in the research framework to investigate the acceptance factors of E-Banking services as a new technology service in the KRI.

This study is a first empirical study that investigates the acceptance factors of E-Banking services in the KRI and provides a foundation for other studies in the future. Besides, it contributes to the literature on the subject, which is important because of the absence of the existing literature of E-Banking. Furthermore, researchers should test more factors in its research, in order to elaborate more effect in this study scope. Moreover, the findings show the importance of trust and attitude and this study sheds further light on using moderators and recommends even more factors with UTAUT in the future researches based on the systematic literature review, in order to fill the gap in the literature. To the best of researcher's knowledge, this research is the first empirical evidence. (Hama Khan, 2019).

## **Practical implications**

Several significant practical and managerial implications can be addressed from the results of this research, which are useful for banks' managers, bankers, and strategic decision-makers willing to employ E-Banking services. This study shed light on the moderation effect of (trust and attitude) on the indirect effects of individual factors and system/services factors through mediating behavioural intention on user behaviour. The results show that trust has a significant moderator role on the relationship between individual factors and behavioural intention and attitude has an

insignificant moderator role on both relationship in the framework, the study results reveal that attitude is not an issue affecting customer's decisions in order to accept E-Banking. Several important managerial and practical implications can be derived from the results of the current study. It is assured that the results are supported by great empirical evidence, and it is very important for Banks' managers, bankers and strategic decision-makers that are willing to employ E-Banking services. Therefore, this study recommends that Banks' managers should concentrate on increasing the level of trust, for example by training or publishing some videos on the Bank's website or sending personal email to its customers, in order to increase its knowledge about how to learn about and use E-Banking channels services safely. Specifically, it is crucial to approach different generations and to avoid their losing cost and time by travelling to banks' branches. The previous study proved that trust should be earned from the highest traditional quality of banking system services at the physical banks' branches (offline banking), which would help build reputations and respectable images, showing that the Banking services are trustworthy, consequently, to attract existing and potential customers into the system. Examples include ATM, Internet Banking, Mobile Banking and Application Banking. Trust is therefore one of the key aspects that can get more customers, and thus a greater competitive advantage. As a result of this study, it is recommended that Banks offer greater E-Banking services. In addition, the results suggest that Banks should have more marketing strategy guidelines, such as free cost, increased numbers and accessibility of ATMs, simplicity, using social media for sharing and increase its experience rather than only for advertising (YouTube channel services, Facebook, Twitter, Instagram, etc.), 24/7 Customer Services (Call Centres)

via free Skype services or cost-free phone numbers, Kurdish Language and lower interest rates on Loans or Mortgages can increase trust and change its customers' attitude about accepting this system. Trust is a key concern affecting the customer's decision to accept E-Banking. On the other hand, this study recommends the banks always understand their customers complaints and evaluate customers' trust and attitude through Research and Development (R&D) and (Strength, Weakness, Opportunities and Threats) SWOT analysis. From the above discussion, this study recommends to Banks' managers that there is a need to have a strong trust in order to persuade customers to accept E-Banking services. E-Banking is a key concern affecting economic growth. It leads to sustainable economic growth and a sustainable environmental future in the KRI.

### **Limitations and future research directions**

Beyond the findings of this research, it should be interpreted as shedding light on several limitations that can be addressed, and suggests some of the ways for future research, including the following:

1. This research only tested trust and attitude as a moderator, there are many other factors are beyond the domain of this study that can be as a moderator, such as (culture, word of mouth, speed, subject norms, religion, etc.,) (Hama Khan, 2019).
2. UTAUT and TAM are the only two theories that the research framework is based on them. Other theories can be used in order to build the research frameworks as a base, such as (TRA, TPB, DTPB, IDT, UTAUT 2, etc.,) (Hama Khan, 2019).
3. There are conceptual limitations which make it impossible to test every single potential hypothesis that can be drawn in the research

framework. Moreover, further study must conceptualize and consternate on specific channels of E-Banking services, such as Internet Banking or ATMs, since there are a limited number of ATMs in the KRI and there are no official numbers about it, except for a report from the International Monetary Fund in 2018 which stated that there were 611 ATMs in Iraq, which are not a big number compared to other developing countries.

4. Differentiation of cultures can lead many effects on E-Banking, specifically with the English languages. Many customers do not speak English very well, and so have problems and difficulties with Internet Banking. Further study should work on it hardly.

5. Sustainability of economics is another problem, particularly in the KRI, because it cannot be compared to the world economy easily. The KRI is a part of Iraq and Iraq does still not have sustainable economy, thus further study should make more effort on this point.

6. Frequent problems with the number and quality of computer and Internet spots (Wi-Fi) can have a big effect on E-Banking services, notably in rural areas or villages.

7. There is still a need to pay attention to using UTAUT's moderation variables namely age, sex, experience and voluntaries. Thus, it is recommended that further study to use it, due to its effect on E-Banking services.

8. The data are nonnormally distributed, which is not suitable with Covariance Based Structural Equation Modelling approach (CB-SEM) and the sample size is not large size of data. The reliability between independent latent variables and dependent latent variables depends on the sample size, thus this probably leads to an increase in the reliability between all latent variables.



9. The data were collected from the academic university staff only at the University of Sulaimani through an online questionnaire. This is considered a self-reporting bias, which cause difficulty in the methodology's researches for scholars. As a result, the data cannot be generalised to E-Banking in the KRI. Therefore, further research should collect data from each city in the KRI.

### **List of new scientific results of the study**

1. This research has examined E-Banking services in the KRI. This study is vital in particular, thus it emphasises the importance of taking into consideration of having reforms in Banking industry, which is the significant of this study accordingly. In terms of the way that model was assembled by using UTAUT and other variables in two second orders components, besides having moderators' effect (i.e., trust and attitude as a moderator), simultaneously, with respect to other models in the relevant literature (i.e., in the field of Marketing, Digital Marketing, Information system, and e-commerce).
2. The significance of this study can be seen in two stages, the first stage illustrated a systematic review of the relevant literature that combined more than 160 empirical studies from various journals about E-Banking and its channels, which built a strong theoretical research framework for this study and will help future research using different methodologies and theories in order to build a stronger research framework.
3. The second stage illustrated an empirical examination of the research framework model, in order to answer research questions by using PLS-SEM methods based on data collection from the questionnaire design

that distributed by email in university of Sulaimani in order to validate the research model framework empirically. This is the first quantitative research by far in this field in the KRI.

4. The empirical results showed that individual factors have a significant indirect impact on user behaviour, system/service factors have a significant indirect impact on user behaviour, and that trust has a significant effect on the relationship between individual factors and behavioural intention as a moderator. However, attitude has an insignificant effect on both relations between individual factors and system/services factors and behavioural intention as a moderator.
5. The findings of this study provide support for researchers, bank managerial and bank practitioners seeking to provide a better quality of both offline and online Banking services, and to increase trust on the banking industry in the KRI. This research provides a theoretical framework to investigate E-Banking services in the KRI. The research highlighted the effect of trust and attitude to investigate the acceptance of E-Banking services as a new technology service as a first empirical study.
6. From a practical viewpoint, this study provides important guidance to government and Bank owners. In particular, the findings of this study can help government to understand that trust is the spine of the system, while this empirical evidence can guide Bank managers, bankers and strategic decision-makers that are willing to employ E-Banking services to have a sustainable economic and environmental future in the KRI in terms of digital ecosystem.

## **Curriculum Vitae**

His name is Yadgar Taha Mohammed Hamakhan, and he was born in Al Sulaymaniyah on 22 Aug 1982 in the Kurdistan Region of Iraq (KRI). His native language is Kurdish language and he speaks English and Arabic.

In 2004, he started his BSc (Business Administration) and graduated in 2008 at the University of Sulaimani in the KRI. Afterwards, he completed his MBA at Universiti Tenaga Nasional (UNITEN) in Malaysia in 2009-2012.

In 2014, he started his PhD at Kaposvar University/ Doctoral School in Management and Organizational Science and completed his studies with Stipendium Hungaricum Scholarship. Now, he is a PhD candidate of Hungarian University of Agriculture and Life Sciences.

He was assistant administrator in College of Administration and Economics, University of Sulaimani, Sulaymaniyah, Kurdistan Region, Iraq in 2005-2008.

He was an assistant researcher in College of Administration and Economics, University of Sulaimani, Sulaymaniyah, Kurdistan Region, Iraq in 2008-2012.

Since 2012, he has been an assistant lecturer at the Economics Department, College of Administration and Economics, University of Sulaimani, Sulaymaniyah, Kurdistan Region, Iraq. He also taught at College of Hungarian University of Agriculture and Life Sciences

Commerce/the University of Sulaimani, Technical Institute of Dukan/KRI 2012-2013, and Cihan University/KRI 2013-2014. He taught International Business, Principle of Management, Academic Debate, Principle of Management, Banking Reading and Management. He also has supervision experience as Project Supervisor to Final Year Students of Business Management 2012-2014 at the University of Sulaimani.

He published 4 articles from his thesis. One of the articles titled *“The effect of individual factors on user behaviour and the moderating role of trust: an empirical investigation of consumers’ acceptance of electronic banking in the Kurdistan Region of Iraq”* was published in Financial Innovation, which ranked **14th** out of 108 journals in Business, Finance category. It has Impact Factor for 2019 is **2.964 (Q1)**.

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He participated in a Kaposvar University Conference (2017 & 2018), AMS's first webinar Networking Tips for Doctoral Students (2020), the International Forum on The Current Advances in Partial least Squares Structural Equation Modeling & Methodological Matters (2020), and the PLS-SEM Orientation Session by Prof. Dr. Marko Sarstedt and held by Arkan Administrative Training Center.

He also has technology skills in (MS Office, SmartPLS 3, ADANCO, SPSS for Statistics and AMOS (In process))

He is interested in doing research in Marketing, Digital Marketing, Innovation, Management Information System, Technology Acceptance, E-Commerce, E-Banking, Entrepreneurship, Digital Entrepreneurship, Trust, Service quality, Decision making, Culture, Individual Experience, Ecosystems.

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