

Exploring the Determinants of Users' Continuance Intention to Use Mobile Banking Services in Kuwait: Extending the Expectation-Confirmation Model

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ABSTRACT

While a great body of information systems (IS) literature has discussed mobile banking (m-banking) services, most of these studies have focused on the adoption or acceptance phases of this technology; with little attention was given to users' intension to continue using such technology. This paper aims at investigating the most important factors that predict users' continuous intension to use m-banking services in the post-adoption phase. This paper presents a conceptualization and validation of an extended expectation-confirmation model (ECM). A total of 303 Kuwaiti users of m-banking services participated in this study. Partial least squares (PLS) of structure equation modelling (SEM) technique was used to analyze the data. The results mainly showed that users' continuous intension to use m-banking services is significantly influenced by perceived trust, satisfaction, self-efficacy, performance expectancy and effort expectancy. Theoretical and practical contributions as well as the research limitations and future directions are discussed.

Keywords: Continuance use, Expectation confirmation model (ECM), Kuwait, Mobile banking, m-banking services, Trust, Satisfaction.

1. Introduction

Technological advancements and mobile developments changed the way in which financial services are offered and used (Alkhalidi and Kharm, 2019; Avorny et al., 2019; Foroughi et al., 2019; Hajihyeydari and Ashkani, 2018; Li et al., 2019; 2019; Malaquias

and Hwang, 2016; Rahi et al., 2018; Singh and Srivastava, 2018). The banking industry is the leading sector in taking advantage of such advancements in technology (Alalwan et al., 2017; Alalwan et al., 2018; Alkhalidi and Kharm, 2019; Avorny et al., 2019; Sharma et al., 2020; Susanto et al., 2016), especially when we consider mobile banking (m-banking)

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services (Alkhalidi and Kharma, 2019; Asnakew, 2020; Foroughi et al., 2019; Malaquias and Hwang, 2016). In fact, banks have integrated m-banking services in their systems and a lot of financial and technical resources have been devoted in this regard (Alalwan et al., 2017; Alalwan et al., 2018; Alkhalidi and Kharma, 2019; Asnakew, 2020; Poromatikul et al., 2020).

M-banking is a technological platform delivered by financial institutions or banks, the main focus of this research, that permits its users to perform various financial transactions, such as: balance enquiries, transferring money, making transactions, and paying bills, remotely at any time and place by adopting a mobile device like a mobile phone or personal digital assistants (PDA) (e.g., Alkhalidi and Kharma, 2019; Baabdullah et al., 2019). Therefore, this technology can respond to some customers' needs, such as performing banking activities without going to an ATM or a physical bank branch (Foroughi et al., 2019), banking customers today are looking for access to their accounts around the clock with the same services offered on their mobile devices as are being offered at the physical bank branch (Arab times, 2019). As such, m-banking services have considerable value for both banks and customers. This technology benefits banks by reducing their operating costs and improving service quality and it also benefits customers through great convenience and interactivity, less fees, instant connectivity, immediate information and time optimization (Foroughi et al., 2019, p. 1015).

According to Statista (2019c), around 4bn people across the world now use smart mobile phones and tablets. Almost two-thirds of the world's population now has a mobile phone, and more than half of the world's web traffic now comes from mobile phones (Arab Times, 2017). Juniper Research (2019) estimated that 1.75bn people worldwide would be using m-banking services. According to the National

Bank of Kuwait (NBK), the year 2018 witnessed strong growth in m-banking services, which increased by 40% since its introduction in 2012, compared to 27% growth in 2017 (NBK, 2018). Today, over 43% of all banking customers globally use m-banking services on a daily or at least weekly basis (Arab times, 2019). In 2018, m-banking use in Kuwait, a Middle Eastern developing country, ranged from 11% to 92% of total banking customers, depending on the bank. Whereas, online banking use ranged from 7% to 39% of total banking customers over the same period (Arab times, 2019). Thus, it is evident that that m-banking use has become more popular than traditional online banking.

While the use of m-banking services rate seems to be high, the long-term viability of an information system (IS) and its success depends on its continued use rather than first-time adoption (e.g., Baabdullah et al., 2019; Bhattacharjee, 2001a; Foroughi et al., 2019; Patel and Patel, 2018; Susanto et al., 2016). Banks can only achieve success and recover their substantial investment in m-banking services by retaining their users (Foroughi et al., 2019). In fact, despite the apparent advantages of m-banking services, many bank users still prefer ATM banking services and physical bank branches (Susanto et al., 2016) due to perceived lack of trust, lack of controllability, lack of satisfaction, security and privacy concerns (Baabdullah et al., 2019; Foroughi et al., 2019; Susanto et al., 2016). Actually, many users who have tried m-banking services have switched back to old PC-based online/internet banking (Susanto et al., 2016; Yang et al., 2015). Therefore, if users' interest over the initial adoption diminishes after they have gained usage experience, banks will suffer from decreased usage of m-banking services concerns (Foroughi et al., 2019; Hsu et al., 2014; Liao et al., 2009; Patel and Patel, 2018; Susanto et al., 2016).

The majority of IS literature in the m-banking context focusses on the adoption or acceptance phases of m-banking service. Only few studies (e.g., Baabdullah et al., 2019; Bhattacharjee, 2001a; Foroughi et al., 2019; Susanto et al., 2016) examined post-adoption intentions and behaviors. In fact, studies of post-adoption intentions and behaviors in the context of m-banking services are limited (e.g., Asnakew, 2020; Foroughi et al., 2019; Oertzen and Odekerken-Schröder, 2019; Susanto et al., 2016; Tam and Oliveira, 2017a; Tam and Oliveira, 2017b). As such, there is a need to study IS continuous use intension in the post-adoption phase (Susanto et al., 2016, p. 509). More specifically, in the context of m-banking services, Asnakew (2020, p. 125) stated that *“although recently, there has been a growing interest among researchers to understand customers’ post-adoption behavior, to date, limited number of studies are available in this specific topic”*. Additionally, theories, used by IS scholars to investigate continuous use intensions, such as: the unified theory of acceptance and use of technology (UTAUT) and its extension (UTAUT2), technology acceptance model (TAM), innovation diffusion theory (IDT), theory of planned behavior (TPB), and task-technology fit (TTF) are primarily used to explain users’ adoption behaviors (Foroughi et al., 2019) in the early stages of acceptance and adoption, and has numerous limitations in predicting the users’ continuance behaviors in the post-adoption stage (Joo et al., 2018). Prior studies (Bhattacharjee, 2001a; Oertzen and Odekerken-Schröder, 2019; Oghuma et al., 2015; Patel and Patel, 2018) argued that users may start using more functional digital features only in the post-adoption phase, after they have gained some experience with the technology. As such, this research study adapted the Expectation-Conformation Model (ECM) (Bhattacharjee, 2001a), as its theory-base, to inves-

tigate the determinant factors which influence users’ continuance intension to use m-banking services in the post-adoption phase. The ECM is focused on post-acceptance and post-consumption expectation factors (e.g., Foroughi et al., 2019; Rahi et al., 2018). For instance, the ECM focuses on factors that influence constancy and retention since prior literature argued that the long-term success and viability of an IS are determined by continued use rather than initial adoption or usage (Foroughi et al., 2019, p. 1017).

The objectives of this study are in fivefold. First, this study seeks to investigate users’ continuance intension to use m-banking services, in the State of Kuwait, in the post-adoption phase. Second, since successful scenarios of users’ continuance intension to use m-banking services cannot be directly used in different cultural contexts, due to the varying market constraints in terms of economic, infrastructure, and social as well as cultural aspects (Slade et al., 2014, p. 861; Slade et al., 2014, p. 210); then examining this topic in the context of Kuwait, where to date, and to the best of our knowledge, no similar research study has been conducted, is an important contribution. Third, this study attempts to enrich the Expectation-Conformation Model (ECM) (Bhattacharjee, 2001a) literature, in the context of m-banking, by extending the model with important variables relevant to the study context, such as perceived security and privacy, self-efficacy and facilitating conditions. Fourth, in line with Shao et al. (2019) argument, for an emerging country like Kuwait, given its relatively weaker institutional and legal environments, perceived trust plays an important salient role in promoting users’ behaviors. Hence, perceived trust was also added to the research model of this study. Finally, in light of increased competitions between banks and growing as well as unpredictable customer demands, this

study aims to assist Kuwaiti banks in understanding users' continuance use intention of m-banking services. Therefore, the research question of this study is: *What are the determinant factors that influence Kuwait users' behavioral intension to continue using m-banking services?*

The paper has been organized as follows. In the next sections, the theoretical background, the conceptual model, and hypotheses development are discussed. Then the methodology section details the data collection procedure and the participants' profile. This is followed by a detailed discussion of the results. Finally, this paper concludes with a discussion of the implications for theory and practice, limitations, and directions for future research.

II. Literature Review

2.1. Theoretical Background

In the context of m-banking services, information systems (IS) literature provides a considerable number of studies, in different countries, which investigated factors that impact the adoption or acceptance phases of m-banking services. For example: Alalwan et al. (2017), Alalwan et al. (2018) in Jordan; Hanafizadeh et al. (2014) and Hajjheydari and Ashkani (2018) in Iran, Sharma et al. (2017) in Oman; Afshan and Sharif (2016) in Pakistan; Akturan and Tezcan (2012) in Turkey; Alkhaldi (2016) in Saudi Arabia; Yuan et al. (2016) in China; Koenig-Lewis et al. (2010) Germany; Singh and Srivastava (2018) in India; Masrek and Razali (2013) in Malaysia, Faria (2012) in Portugal, and Mutahar et al. (2018) in Yemen.

Information system scholars have also used different theoretical models to investigate the factors that impact the pre-adoption or adoption phases of

m-banking services. For example: Yu (2012) embraced the unified theory of acceptance and use of technology (UTAUT); Alalwan et al. (2017), Alalwan et al. (2018) adopted the unified theory of acceptance and use of technology (UTAUT2); Tam and Oliveira (2017a) used the DeLone and Mclean (D&M) IS Success Model; Abbas et al. (2018) and Mutahar et al. (2018) implemented an extended technology acceptance model (TAM); Oliveira et al. (2014) used the task technology fit (TTF) model; Kapoor et al. (2015) embraced Innovation Diffusion Theory (IDT); Chawla and Joshi (2018) extended the TAM and IDT. However, very few studies have investigated the main determinant factors that influence customers' continuous intentions to use m-banking services.

Chen (2012) extended the expectation-confirmation model (ECM) with service quality, perceived risk and technology readiness to study continuance intention of m-banking in Taiwan. The study results found that technology readiness and service quality has indirectly significant influence on continuance intention through the mediation of relationship quality, consisting of satisfaction and trust. The study results also revealed that perceived risk had no significant impact on relationship quality. Kumar and Ravindran (2012) examined the factors influencing the continuance decisions of the early adopters of m-banking services in India. The study integrated constructs from TAM along with constructs of perceived service quality, perceived credibility, and perceived risk to empirically establish the influence on satisfaction and continuance usage intentions. The study results found a strong linkage between perceived service quality, satisfaction, and continuance intentions. The study also confirmed that after adoption of the technology, the customer finds satisfaction in the quality parameters of the service. Also, continuance intentions were found solely dependent on

satisfaction.

Susanto et al. (2016) developed and validated an extended framework, based on the ECM, to investigate continuance use intention of m-banking services at the post-consumption phase in Korea. The results of their study revealed that users' confirmation after the initial use of smartphone banking services has significant impact on perceived security, perceived usefulness, trust, and user satisfaction. Their results also demonstrated that perceived security significantly influences trust while perceived usefulness significantly influences trust, user satisfaction, and continuance use intention. Moreover, both user satisfaction and self-efficacy also significantly influence continuance use intention. Finally, trust was found to exert significant impact on user satisfaction. Yuan et al. (2016) integrated factors from the ECM, TAM, and TTF models to predict continuance intention of mobile banking in China. The authors also test the paths onto continuance intention for moderation by Gender. The study results found that satisfaction and perceived risk have the strongest total effect on continuous intension. Additionally, while the impact of perceived risk is stronger in men, no other moderation effects by gender are statistically significant.

By extending the technology continuance theory (TCT) with self-efficacy and channel preference, Foroughi et al. (2019) investigated the determinants of m-banking continuance use intention in Malaysia. The study results confirmed that the TCT model had a high exploratory power in explaining users' perceived usefulness (PU), satisfaction, attitude, and intentions to continue to use m-banking. Moreover, self-efficacy and channel importance were important drivers of continuance intention in the context of m-banking. However, according to the results, perceived ease of use has no effect on PU and attitude in the post-adoption stage. Albashrawi and Motiwalla

(2019) integrated privacy and personalization into TAM theoretical model to examine continuous use intensions of mobile banking services in the US. The results of their study revealed that perceived usefulness and perceived ease of use are significant predictors of satisfaction, while satisfaction can determine continued usage intention of mobile banking services. However, the interaction effect shows statistical significance for privacy, but not for personalization.

Drawing upon the TAM and trust theory, Asnakew (2020) developed a model to examine the effects of antecedent variables in customers' continuance intention to use mobile banking service channels. The study results revealed that perceived ease of use and perceived usefulness from TAM explained 68.9% of the variance in attitude, and attitude and trust were found to jointly explain 50% of variance in continuance intention to use mobile banking. Moreover, 53.2% of the variation in trust was jointly explained by structural assurances and bank's reputation. Poromatikul et al. (2020) examined the drivers of continuance intention with mobile banking apps in Thailand using the ECM as the theory base. Their study results found that the top three factors directly affecting continuance intention toward m-banking are satisfaction, trust, and expectancy confirmation. However, image and perceived risk have an impact on continuous use intension.

2.2. The State of m-banking in Kuwait

Kuwait, a Middle-Eastern rich country, with well-educated citizens as well as well-advanced technology infrastructure, its citizen are also much technology savvy compared to the citizens in many other developing countries (Rabaa'i et al., 2017; Statista, 2019b; Statista, 2019a), and enjoys one of the highest internet

and mobile penetration levels in the world (NBK, 2018; KFAS, 2019). However, Kuwait, in comparison to its Gulf Countries Council (GCC) compatriots such as UAE and Bahrain, is lagging behind in terms of economic competitiveness and attractiveness. Consequently, Kuwaiti government launched *Kuwait Vision 2035* initiative. This vision aims to improve Kuwait competitive standards by digitalizing the economy, diversifying the income away from oil, which is currently account for 90 percent of the country's national production, and transforming the country into a regional financial and commercial hub (Arab times, 2019; Central Bank of Kuwait, 2019).

A study by the Kuwait Foundation for the Advancement of Sciences (KFAS) (2019) concerning the Future of Financial Services, revealed that over 50% of the Kuwait population fall between the 15-39 years age group, who are adept at embracing technological changes (NBKCapital, 2019). Further, nearly 70% of those who fall under the age group of 15 to 24 years have a banking relationship as against 33% for the Middle-East region and world average of 54% (KFAS, 2019). This young generation in Kuwait is digitally literate, expect on-demand services, look online first and do not mind to change for a better platform (Central Bank of Kuwait, 2019). Kuwaiti young generation needs from financial institutions, such as banks, have shifted dramatically, as they value digital offerings that would satisfy their needs with the least amount of friction and that would complement other solutions they use. They are looking for a digital offering that would allow such things as: fast account opening, access to loyalty programs, incentives and discounts, sensible savings plans, and reliable mobile payment solutions that would complement their e-commerce needs (NBKCapital, 2019; The Times Kuwait, 2019).

Additionally, KFAS(2019)'s study pointed out a

number of interesting statistical findings pertain to m-banking services in Kuwait, including: mobile penetration stands at 146.6% - it is relatively higher than most developed countries and the world average of 64.5%, ownership of smartphones is also high at 99.7% of households, mobile network infrastructure is well developed and 100% of land area and population is covered, while 4G LTE network has 97% coverage, 8 out of 10 households have access to the internet - the remaining non-internet households' access internet through their mobile phones, and the penetration of mobile broadband in Kuwait is healthy at 66.8%. In fact, "Kuwait is one of the most interesting markets in the Middle East and North Africa region, as it influences purchases all across the GCC [...] Despite being a small market, Kuwait has amongst the highest adoption rates of new technology and highest revenue per user for tech companies" (Global Finance, 2020).

Given the Kuwait 2035 Vision goals to diversifying the income away from oil and to transform the country into a commercial, cultural and financial hub in the region, banks and financial services are critical to Kuwait's economy (The Times Kuwait, 2019). Hence, realizing the shift in customers' demands, the growing competition, and considering the opportunities as well as capabilities of m-banking services, Kuwaiti banks embraced and adopted technological advancements to offer a customer-centric strategy, retain market share, drive opportunities, manage risks and improve their efficiencies (The Times Kuwait, 2019; KFAS, 2019).

III. Conceptual Model and Hypotheses Development

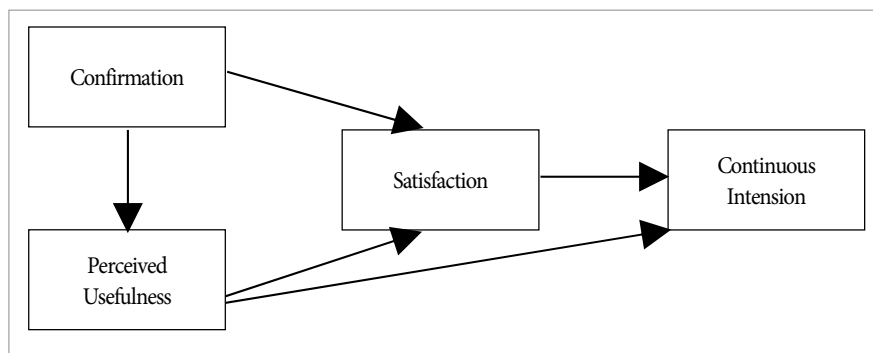
Users' continued use of different technologies has

become a main focus of investigation by scholars, as it shows whether a particular technology is really valuable or nothing more than a gimmick (Rahi et al., 2018, p. 24). Early academic efforts in IS continued use research adopted the same set of motivational variables to explain both acceptance and continuance decisions, treating continuance as an extension of the initial adoption (Ding, 2019). However, initial acceptance has not naturally translated into the continued use of technology, evidenced by the phenomenon that some users accepted the technology initially but discontinued its use at a later stage (Dai et al., 2020). In fact, it is argued that users' intention to use a technology suggests only their positive attitude toward the technology and their affiliated desire to use it (Huang, 2019), but does not necessarily guarantee their continued use of it (Wang et al., 2019). Since people tend to be curious about a novel technology, they will have a positive attitude toward the technology, followed by the intention to use it (e.g., Alraimi et al., 2015; Rahi et al., 2018). Therefore, this will not automatically translate into a continuous use of the technology, because users will carefully assess whether they really need the technology or they use it as a transient stage (e.g., Huang, 2019; Merikivi et al., 2017). More specifically, users will continue to use the technology as long as it satisfies

their expectations (Huang, 2019), and will stop using the technology when it neither matches their expectations nor fulfills their needs (Bhattacharjee, 2001a).

The Expectation Confirmation Model (ECM) is focused on post-acceptance and post-consumption expectation factors (e.g., Foroughi et al., 2019; Rahi et al., 2018). For instance, the ECM focuses on factors that influence constancy and retention since prior literature argued that the long-term success and viability of an IS are determined by continued use rather than initial adoption or usage (Foroughi et al., 2019, p. 1017). The ECM, developed by Bhattacharjee (2001a) and adapted from the Expectation-Confirmation Theory (ECT) (Oliver, 1980), is supported by four main constructs, namely: confirmation, perceived usefulness (or performance expectancy), satisfaction, and continuance intention (Bhattacharjee, 2001a). <Figure 1> depicts the ECM.

The ECM was mainly employed to examine a user's continuance intention to use a system, suggesting that users' satisfaction could be regarded as the most important factor that determines a user's intention for continuous use (e.g., Bhattacharjee, 2001a; Foroughi et al., 2019; Huang, 2019; Rahi et al., 2018; Susanto et al., 2016). In this model, confirmation is positively associated with performance expectancy and satisfaction; performance expectancy is positively



<Figure 1> The ECM (Bhattacharjee, 2001a)

influencing satisfaction and continuance intention; and satisfaction is positively associated with continuance intention. The ECM has been used to investigate individuals' continuous use intention of different technologies, for example: digital libraries (Cheng, 2014b); cloud services (Huang, 2016); mobile gaming wearable technology (Nascimento et al., 2018); travel apps (Choi et al., 2019); mobile communication applications (Wang et al., 2019); and mobile banking services (Susanto et al., 2016).

Confirmation (CON) is defined as the extent to which user perceives that their initial expectations are being confirmed during actual use (Rahi et al., 2018). In m-banking services context, users' satisfaction reflects the level of their expectation, which matches experience (Susanto et al., 2016). According to Bhattacharjee (2001a), user satisfaction was determined by confirmation of expectations from prior use and perceived usefulness (i.e., performance expectancy). In other words, users will be satisfied, when m-banking services meet their expectations which they had toward m-banking (Foroughi et al., 2019). Prior studies demonstrated the significant relationship between confirmation and satisfaction as well as performance expectancy (e.g., Alraimi et al., 2015; Cheng et al., 2019; Foroughi et al., 2019; Fu et al., 2018; Shin et al., 2011; Susanto et al., 2016). As such, we argue that when users' confirmed that m-banking services meet their expectations, they tend to believe that these services are beneficial, effective, convenient, and useful; and this, in turn, will promote their satisfaction toward these services. Susanto et al. (2016, p. 513) stated that, as a general motivation and a belief, perceived security and privacy and perceived trust are an important confirmation for users after using m-banking services. For instance, Foroughi et al. (2019, p. 1019) postulated that users may poorly perceive security and privacy as well

as trust of m-banking services only because they are not sure about what to expect from these services in terms of security and privacy measures. Nevertheless, users are still willing to accept using m-banking services so that they could build their usage experience as a basis for forming more tangible perceptions (Foroughi et al., 2019; Susanto et al., 2016). As a result, we argue that confirmation of expectation in using m-banking services will increase users' perceptions towards security, privacy, and trust. Accordingly, we posited the following hypotheses:

- H1: Confirmation of expectation positively enhances performance expectancy.*
- H2: Confirmation of expectation positively enhances users' satisfaction.*
- H3: Confirmation of expectation positively enhances perceived trust.*
- H4: Confirmation of expectation positively enhances perceived security and privacy.*

Performance expectancy (PE), similar to perceived usefulness and relative advantage (Alwahaishi and Snásel, 2013; Huang, 2016; Saadé and Bahli, 2005; Teo, 2011; Venkatesh et al., 2003), refers to the extent to which the individual believes that usage of a particular technology will provide benefits to him/her in performing certain activities (Venkatesh et al., 2012). For instance, PE can form individuals' perceptions toward the improvement of performance by using a specific technology (Rauniar et al., 2014). In the original UTAUT, performance expectancy is the strongest predictor of behavioral intention (Beh et al., 2019). Venkatesh et al. (2003) argued that PE is found to be stable variable to investigate user behavior, both initial and post-adoption stages. Hong et al. (2006) and Dia et al. (2020) reported that user's perceived PE of a technology is a key determinant

of satisfaction and continuance intention. PE was found to be an important predictor of behavioral intentions in many research contexts including: web portals (Lin et al., 2005); internet banking (Martins et al., 2014); e-government (Rabaa'i, 2015; Rabaa'i et al., 2015; Rabaa'i, 2017b), mobile reading (Gan and Xiao, 2015); web-based learning management systems (Lwoga and Komba, 2015; Zogheib et al., 2015); healthcare (Gilani et al., 2017); Facebook (Chang, 2016), mobile wallets (Rabaa'i, In press); and mobile commerce (Shaw and Sergueeva, 2019). Additionally, PE was found to influence users' satisfaction in different studies (e.g., Bhattacharjee, 2001a; Kumar et al., 2018; Lim et al., 2019; Oghuma et al., 2016; Rezvani et al., 2017). Finally, PE was found to affect trust in internet banking (Suh and Han, 2002) and m-banking (Susanto et al., 2016). Based on the above literature discussion on PE, we argue that the more users feel that m-banking services are useful, convenient and beneficial, the greater: (1) users feel safe and secured in conducting different financial transactions using m-banking services, (2) satisfied users will be, (3) the likelihood that will continue using these services. Accordingly, this study posited the following hypotheses:

H5: Performance expectancy positively enhances perceived trust.

H6: Performance expectancy positively enhances users' satisfaction.

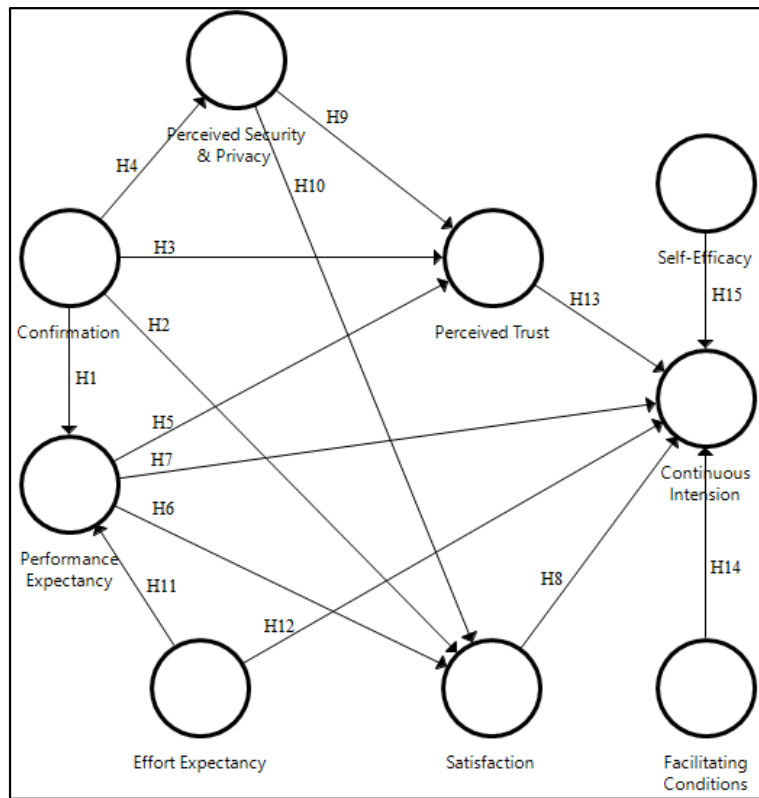
H7: Performance expectancy positively enhances continuous intention to use m-banking services.

Satisfaction (SAT) refers to "a psychological or affective state related to and resulting from a cognitive appraisal of the expectation-performance discrepancy (confirmation)" (Bhattacharjee, 2001a, p. 354). According to Foroughi et al. (2019), the level of

customers' satisfaction with a product or service could be the primary reason for making repurchase decision, which is in fact the same concept as continuance intention towards using technology (Tran et al., 2019). Alraimi et al. (2015) and Cheng et al. (2014b) argued that users will have a sense of satisfaction about a particular technology and when they find it actually useful, they will have the intention to continue using it. Hence, banks must try to ensure consumers' satisfaction with unique m-banking services to motivate users to continue using these services. Prior studies in different technological contexts have shown the significant effects of satisfaction toward continuance intention to use technology, for example: digital libraries (Cheng, 2014b); mobile instant messaging (Oghuma et al., 2016); mobile social apps (Hsiao et al., 2016; Rabaa'i et al., 2018); mobile shopping (Shang and Wu, 2017) and m-banking (Foroughi et al., 2019; Susanto et al., 2016). As such, the study posited that:

H8: Satisfaction positively enhances continuous intention to use m-banking services.

This study aims at investigating users' continuance intention to use m-banking services in the post-adoption phase by extending the ECM. However, despite its strong theoretical foundation, "the ECM has been found to be parsimonious in explaining post-adoption dynamics" (Gupta et al., 2020). As such, researchers in different contexts have added various factors to better investigate users' continuance intention, for example: trust (Asnakew, 2020), perceived security and privacy (Susanto et al., 2016), attitude (Ding, 2019), effort expectancy (Foroughi et al., 2019), perceived value (Hsiao and Chang, 2014), self-efficacy (Hsu and Chiu, 2004), and social norms (Kim, 2010). Our proposed model added perceived



<Figure 2> The Research Model

security and privacy, effort expectancy, perceived trust, self-efficacy and facilitating conditions as crucial factors that are important to continue using m-banking services. The research conceptual model of this study is depicted in <Figure 2>.

Chong (2013) argued that security and privacy concerns tend to be higher with monetary transactions through mobile devices, as individual and private information is stored on users' mobile phones. Security breaches were considered to significantly prevent consumers from providing sensitive information online (Merhi et al., 2019). For instance, security issues remain the biggest concern facing m-banking services adoption due to the possibility of data leakage or theft by hackers for example (Merhi et al., 2019). This has been reported in many research

studies, listing security as one of the most critical barriers facing m-banking acceptance and growth (e.g., Maduku, 2016; Sun et al., 2017). In their study, Hoehle et al. (2012), found 63 studies out of 247 peer-reviewed articles stating that security was a major factor influencing consumers' intentions to use the electronic banking systems. Prior studies found security concerns as a significant factor in mobile shopping (Huseynov and Özkan Yıldırım, 2019), in mobile wallets (Routray et al., 2019), in digital currencies adoption (Roussou et al., 2019), in e-payment systems (Xena and Rahadi, 2019), and m-banking adoption (Changchit et al., 2019). For instance, the issue of security, as a key factor in influencing continued intention to use m-banking, has been thoughtfully examined in the literature (e.g., Haider et al.,

2018; Sharma and Sharma, 2019).

Moreover, while privacy concerns are not new issues to businesses and customers, advancements in technology and mobile developments have improved gathering, saving, applying, and sharing personal information (Dixit and Datta, 2010). The importance of privacy in the online area, in general, has been widely studied (Damghanian et al., 2016). For instance, customers find more unreliability and worry about privacy issues in online areas when working on the Internet (Casaló et al., 2007). Privacy refers to “the ability of the individual to control when, how, and to what extent his or her personal information is communicated to others” (Hong and Thong, 2013, p. 276). Previous studies reported privacy concerns as one of the main barriers of electronic banking (e.g., Kassim, 2017; Laforet and Li, 2005), mobile cloud storage services (Arpaci, 2016), online travel shopping (Cui et al., 2018), mobile self-check-out systems (Johnson et al., 2020), and m-banking adoption (Merhi et al., 2019). Further, users’ perceived privacy can generate trust and satisfaction, which in turn will lead to continuous intension to use m-banking services (Zhou, 2012a). Moreover, privacy concerns were indicated as an efficient predictive factor over continued intention to use m-banking services (e.g., Choudrie et al., 2018; Farah et al., 2018).

Susanto et al. (2016, p. 511) stressed the need for banks to urgently address the issues of security and privacy concerns in m-banking context, as they are the major factors leading to large number of people who are still unwilling to utilize m-banking services. In fact, security and privacy concerns play a critical role in making users prefer to use non-m-banking services such as physical bank branches and traditional ATMs (e.g., Hanafizadeh et al., 2014; Merhi et al., 2019). The literature showed

that the perception of security and privacy influence users’ continued intension to use m-banking services (Sharma and Sharma, 2019), and the lack of security and privacy decreases users’ satisfaction and perceived trust in the context of such services (e.g., Choudrie et al., 2018; Susanto et al., 2016). As such, banks should invest in comprehensive security systems and ensure the privacy of users’ information and transactions, this in turn will motivate users’ intension to continue using m-banking services (Boonsiritomachai and Pitchayadejanant, 2017). Accordingly, we integrated perceived security and privacy into our extended model of ECM and follow the same argument presented by Susanto et al. (2016, p. 512), users who have good perceptions toward security and privacy conditions of m-banking services will have higher affective evaluation toward these services. Previous studies indicate that perceived security and privacy is an important antecedent of trust (Centeno, 2004; Kim et al., 2011; Liébana Cabanillas et al., 2013). Moreover, perceived security and privacy will drive users’ satisfaction and repeated use of m-banking services (e.g., Hanafizadeh et al., 2014; Susanto et al., 2016). Accordingly, the following hypotheses are posited:

H9: Perceived security and privacy positively enhances perceived trust.

H10: Perceived security and privacy positively enhances users’ satisfaction.

3.1. Effort Expectancy (EE)

Effort expectancy, similar to perceived ease of use (e.g., Huang, 2019; Teo, 2011; Venkatesh et al., 2003), represents the extent of the ease associated with individuals’ use of technology (Venkatesh et al., 2012). Effort expectancy, in this study, is introduced to

measure individuals' perceived ease of use of m-banking services. Prior studies have confirmed the significant relationship between effort expectancy and continuous intention in different technological contexts, such as in: e-learning (Cheng, 2014a), blog sharing (Lu and Lee, 2012), Wiki system (Yueh et al., 2015), mobile reading (Gan and Xiao, 2015), online banking (Alalwan et al., 2016; Alalwan et al., 2017; Alalwan et al., 2018), e-government (Rabaa'i, 2015; Rabaa'i et al., 2015; Rabaa'i, 2017b), and m-banking (Foroughi et al., 2019). Moreover, many studies have found a significant effect of effort expectancy on performance expectancy in different contexts including m-banking (e.g., Alalwan et al., 2016; Alalwan et al., 2018; Alkhalidi and Kharna, 2019; Alsheikh and Bojei, 2014; Alwahaishi and Snásel, 2013; Jaradat and Al Rababaa, 2013; Rabaa'i, 2017b; Saadé and Bahli, 2005). As such, we argue that if users believe m-banking services are easy to use and effortless, they will not only perceive the use of such services to be beneficial and convenient but will also promote their behavioral intentions to continue using these services. Accordingly, this study posited the following hypotheses:

H11: Effort expectancy positively enhances performance expectancy.

H12: Effort expectancy positively enhances continuous intention to use m-banking services.

3.2. Perceived Trust (PT)

Perceived trust can be defined as “the degree to which users have attitudinal confidence for reliability, credibility, safety, and integrity of mobile banking system from the technical, organizational, social, and political standpoints and also from the effective, efficient, prompt, and sympathetic customer service response, if required” (Shareef et al., 2018, p. 57). The

authors stated that numerous studies have identified that trust has a more important role in transaction behavior, like m-banking, than behavior for traditional banking. Alalwan et al. (2017, p. 103) argued that perceived trust, in the m-banking context, can be “operationalized as the accumulation of customer beliefs of integrity, benevolence and ability that could enhance customer willingness to depend on m-banking to attain the financial transaction”. Due to the high degree of uncertainty and perceived security and privacy in m-banking services, perceived trust becomes an important factor for a person to obtain confidence in an exchange partner (Zhou, 2012b). Trust often includes three beliefs: ability, integrity, and benevolence (Choudrie et al., 2018). Ability is defined as service providers having the knowledge and ability necessary to fulfil their tasks. Integrity means that service providers keep their promises and do not deceive users. Benevolence means that service providers are concerned with users' interests, not just their own benefits (Choudrie et al., 2018, p. 454). For instance, Jøsang et al. (2005) stated in their study that the lack of trust is like sand in the social machinery and represents a real obstacle for the uptake of online services. Therefore, banks are encouraged to maintain a relationship, based on trust, with m-banking users to motivate them to continue using such services. Past studies have confirmed the significant influence of trust on behavioral intention in different technological contexts, such as in: E-commerce (Li and Yeh, 2010), online social networks (Wu et al., 2014), m-banking (Hanafizadeh et al., 2014; Susanto et al., 2016), wearable payments (Rabaa'i and Zhu, In press), and mobile network quality (Maduku, 2016). As such, we argue that perceived trust plays a critical role in motivating users to continue using m-banking services. Therefore, the study hypothesizes that:

H13: Perceived trust positively enhances continuous intention to use m-banking services.

3.3. Facilitating Conditions (FC)

Facilitating conditions means that users possess the required resources and expertise to use a given technology (Cheng et al., 2020). This construct is similar to perceived behavioral control in the Theory of Planned Behavior (TPB) (Boonsiritomachai and Pitchayadejanant, 2017). Aziz (2015)'s study rejected the significant positive correlation between facilitating conditions and continuance intention to adopt smart devices, as e-learning tools. The author argued that this influence is only presented among older women, but the respondents were mostly young students. However, various studies have verified the significant relationship between facilitating conditions and continuous intention across different technological contexts, such as in: mobile shopping apps (Tak and Panwar, 2017), mobile wallets (Madan and Yadav, 2016), mobile apps in general (Hew et al., 2015), social networks (Wu et al., 2014), broadband internet technology (Lurudusamy and Ramayah, 2016), and e-Government (Rabaa'i, 2017b). In the m-banking context, facilitating conditions are related to the availability of resources, complete support, favorable conditions, technological infrastructure, compatibility support the use of m-banking and organizational development (Alalwan et al., 2017; Dwivedi et al., 2017; Shaikh and Karjaluoto, 2015). Facilitating conditions, in this study, reflects the effect of resources availability, internet accessibility, compatibility with other smart devices such as mobile phones, and required knowledge and skills to engage with m-banking services. Therefore, we argue that the more facilitating conditions are available to users, the greater the likelihood they will continue using

m-banking services. Accordingly, a hypothesis is presented as follows:

H14: Facilitating conditions positively enhances continuous intention to use m-banking services.

3.4. Self-efficacy (SEF)

Originated from the Social Cognitive Theory (SCT), Bandura (1977) argued that self-efficacy relates to one's perception of his/her effectiveness in executing a particular task. Bandura (1986) asserted that self-efficacy pivots an individual's conviction on his or her capabilities rather than the actual abilities possessed. Further, Bandura (1994) discussed how self-efficacy influences individual's thinking, motivation and behavioral intention. Self-efficacy may also include social behaviors and cognitive processes that are influenced by users external experience and self-perception when making a decision about a particular event (Susanto et al., 2016). Users with high level of self-efficacy are more confident in their ability to conduct a particular act; hence, they are motivated to be persistent in their endeavors (Hsiao and Tang, 2015). Susanto et al. (2016, p. 512) argued that self-efficacy may build one's ability to complete different tasks after learning how to perform activities. It will control one's behavior such as motivation, persistence, endurance, and diligence to overcome difficulties that may appear. Moreover, self-efficacy refers to users' abilities and skills that they are cognizant of after first-time use, but before making a sensible decision about their continuance behavior (Foroughi et al., 2019). As such, the concept of self-efficacy was linked to IS continuance intention and behavior (Bhattacharjee et al., 2008). Self-efficacy, in this study, reflects a person's determined decision to continue using m-banking services. Thus, we argue

that the higher the perceptions of self-efficacy that users possess, the greater the likelihood users will continue using m-banking services. Prior studies have confirmed the significant relationship between self-efficacy and behavioral intention in different technological contexts, such as in: using knowledge sharing (Cheung et al., 2013), various computer technologies (Agarwal et al., 2000), internet banking (Chan and Lu, 2004), web-based learning (Chiu and Tsai, 2014), social networks (Wang et al., 2015), mobile library applications (Hu and Zhang, 2016), learning management systems (Rabaa'i, 2016), e-government (Rabaa'i, 2017b), and m-banking services (Alalwan et al., 2016; Foroughi et al., 2019; Gu et al., 2009). As such, the study posited that:

H15: Self-efficacy positively enhances continuous intention to use m-banking services.

IV. Methodology

An empirical study was conducted with an objective to test the relationships between the constructs of the conceptual model depicted in <Figure 2>. To achieve this objective, a survey-based study was employed to collect the needed empirical data. This section describes the measurement items, data collection, the study sample, and the techniques followed to control common method bias (CMB).

4.1. Measurement Items

The survey instrument had 31 items for the 9 constructs of this study. The measurement item scales for the constructs were adapted from prior literature, with slight wording modifications to fit the study context. <Table 1> shows the constructs, the measurement items for each construct and the sources, where

the measurement items were adapted. Each item, except for the Satisfaction construct measurement items, was measured with a seven-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (7). The Satisfaction construct adopted, based on Spreng et al. (1996)'s dimensions, has been validated in the IS context (Bhattacharjee, 2001a; Bhattacharjee and Premkumar, 2004; Premkumar and Bhattacharjee, 2008; Rabaa'i, 2012; Rabaa'i, 2017b; Rabaa'i et al., 2015). This construct captures respondents' satisfaction levels both in intensity and direction (Oliver, 1997) along 7-point scales anchored between four semantic differential adjective pairs: "frustrated/contented," "displeased/pleased," and "dissatisfied/satisfied" (Bhattacharjee, 2001a).

Pre-test and pilot test were employed. In the pre-test, four expert academics were involved to verify the measurement scales, assess the suitability, relevance, readability of the questionnaire, and discuss possible changes to be implemented in the questions to clarify any ambiguity of the questionnaire. Then, to ensure the adequacy as well as reliability of the measures and to avoid any confusion or misinterpretations of the survey questions, a pilot study was conducted before the main study. Thirty-two questionnaires were used for the pilot study. The questionnaires were given to senior students at a private American university in the State of Kuwait, who were asked to fill the given questionnaire and provide any comments or concerns about it. Twenty-six questionnaires were returned. Noticeably, all respondents indicated that the questionnaire is easy, clear and did not required much time to be filled. Cronbach's alpha was used to check the reliability of the constructs' scale used. Values for all constructs were higher than 0.70 as suggested by Nunnally and Bernstein (1994).

<Table 1> The Constructs, the Measurement Items, and the Sources

Constructs	Items	Sources
Perceived Security and Privacy (PSP)	PSP1 I think m-banking services have mechanisms to ensure the safe transmission of its users' information PSP2 I feel secure to perform transactions using m-banking services PSP3 m-banking services are secure to send sensitive information PSP4 m-banking services are secure and safe to transmit sensitive information	Susanto et al. (2016)
Confirmation (CON)	CON1 My experience with using m-banking services was better than what I had expected CON2 The service level provided by m-banking services provider was better than what I had expected CON3 The expectations that I have about M-banking services were correct CON4 Overall, most of my expectations from using m-banking services were confirmed	Bhattacharjee (2001a)
Performance Expectancy (PE)	PE1 I find m-banking services useful in my daily life. PE2 Using m-banking services increase my chances of achieving things that are important to me. PE3 Using m-banking services help me accomplish things more quickly. PE4 Using m-banking services increase my productivity	Venkatesh et al. (2012)
Effort Expectancy (EE)	EE1 Learning how to use m-banking services is easy for me. EE2 My interaction with m-banking services is clear and understandable. EE3 I find m-banking services easy to use. EE4 It is easy for me to become skillful at using m-banking services.	Venkatesh et al. (2012)
Perceived Trust (PT)	PT1 Overall, m-banking services are reliable. PT2 The bank takes full responsibility for any type of insecurity during operation at m-banking services. PT3 Legal and technological policies of the bank adequately protect me from problems during operation at m-banking services.	Shareef et al. (2018)
Satisfaction (SAT)	SAT1 frustrated/contented SAT2 displeased/pleased SAT3 dissatisfied/satisfied	Bhattacharjee (2001a); Rabaa'i (2012); Rabaa'i et al. (2015); Rabaa'i (2017b, 2017a)
Self-Efficacy (SE)	SEF1 I can perform my banking needs using m-banking services even if there is no one around to help me SEF2 I can perform my banking needs using m-banking services with only a simple manual or online help for reference SEF3 I am confident enough in my ability to perform my banking needs using m-banking services	Bhattacharjee (2001b); Suh and Han (2002)
Facilitating Conditions (FC)	FC1 I have the resources necessary to use m-banking services FC2 I have the knowledge necessary to use m-banking services FC3 m-banking services are compatible with other technologies I use	Venkatesh et al. (2012)
Continuous Intension (CI)	CI1 I intend to continue using m-banking services in the future. CI2 I will always try to use m-banking services in my daily life CI3 I will keep using m-banking services as regularly as I do now	Bhattacharjee (2001a)

4.2. Data Collection

The data collection took place in the State of Kuwait between January and February 2020. Both paper-based and online questionnaires were developed and distributed. The items in both survey questionnaires were in English language only. The survey instrument consisted of two sections, with two types of response options: multiple choice and a 7-point Likert-type and semantic differential scales. Multiple choice questions were related to demographics, including gender, age, m-banking services experience, m-banking services usage, and monthly income. Followed by measurement scales questions formulated to test the hypotheses. In both questionnaires, an explanatory section was included to explain the study's purpose, describe the functionality and features of m-banking services, provide examples of m-banking services applications. Additionally, participants were informed that the participation in this study was voluntary and no rewards or incentives were offered. Participants were also ensured that the confidentiality of the responses is maintained, and only aggregated results will be used and reported. They were notified of their rights to withdraw from this study whenever they want. Data for this research study were collected by sending an email invitation with a link to the online questionnaire or distributing the paper-based questionnaire manually to students, alumni, faculty members, staff, at a private American university in the State of Kuwait, and they were also asked to forward the invitation to their friends and relatives. We have also sent WhatsApp and Instagram messages, with a link to the online questionnaire, to the research team's contacts who reside in Kuwait. We have also invited people randomly, outside university and academic context, to take part of this study.

4.3. The Study Sample

Since the population size is unknown for this study, a convenient sampling method was adopted (Liébana-Cabanillas et al., 2018; San Martín and Herrero, 2012; Sharma et al., 2019). Moreover, as suggested by (Liébana-Cabanillas et al., 2018; San Martín and Herrero, 2012; Sharma et al., 2019), the quota sampling method was conducted to match the target population structure in both age and gender. A total of 389 questionnaires were collected. Of the submitted questionnaires, 86 were excluded because of incomplete answers, leaving 303 usable survey responses. SPSS 20 was used to perform the descriptive statistical analysis.

Only 46 percent of respondents are males while majority of 54 percent are females. 9 percent of the respondents were aged less than 18 years; 37 percent were aged between 18-25, 28 percent were aged between 26-30 years; 11 percent were aged between 31-40 and 15 percent were above 40 years of age. Most of the respondents have been using m-banking services between 3 - 5 years with 42 percent, while only 10 percent have been using m-banking services for less than a year. About 47 percent of the respondents have been using m-banking services between 2-3 times a week, and only 7 percent have been using m-banking services more than 7 times a week. As for the respondents' monthly income, the majority of the respondents, around 33 percent, have less than 1,000 Kuwaiti Dinars (KD) as a monthly income, while only 16 percent have more than 3,000 KD as a monthly income. <Table 2> shows a snapshot of the respondents' demographic data.

4.4. Common Method Bias

Following Podsakoff et al. (2003) suggestions, this

<Table 2> Demographic Data of the Respondents

Data	Frequency	Percentage
Gender		
Male	139	46%
Female	164	54%
Total	303	100%
Age		
Less than 18 years	27	9%
18 - 25 years	113	37%
26 - 30 years	85	28%
31 - 40 years	33	11%
More than 40 years	45	15%
Total	303	100%
m-banking services usage		
Less than a year	30	10%
1 - 2 years	109	36%
3 - 5 years	126	42%
more than 5 years	38	13%
Total	303	100%
Weekly usage of m-banking services		
Once a week	64	21%
2-3 times a week	141	47%
4-7 times a week	78	26%
more than 7 times a week	20	7%
Total	303	100%
Monthly Income		
Less than 1,000 KD	99	33%
1,000 - 2,000 KD	85	28%
2,001 - 3,000 KD	71	23%
More than 3,000 KD	48	16%
Total	303	100%

study used four main approaches in controlling common method bias (CMB). Firstly, in the survey design, all survey measurement items were written using simple and concise language. Secondly, the scale items of corresponding constructs were mixed throughout the survey as a technique to reduce the likelihood

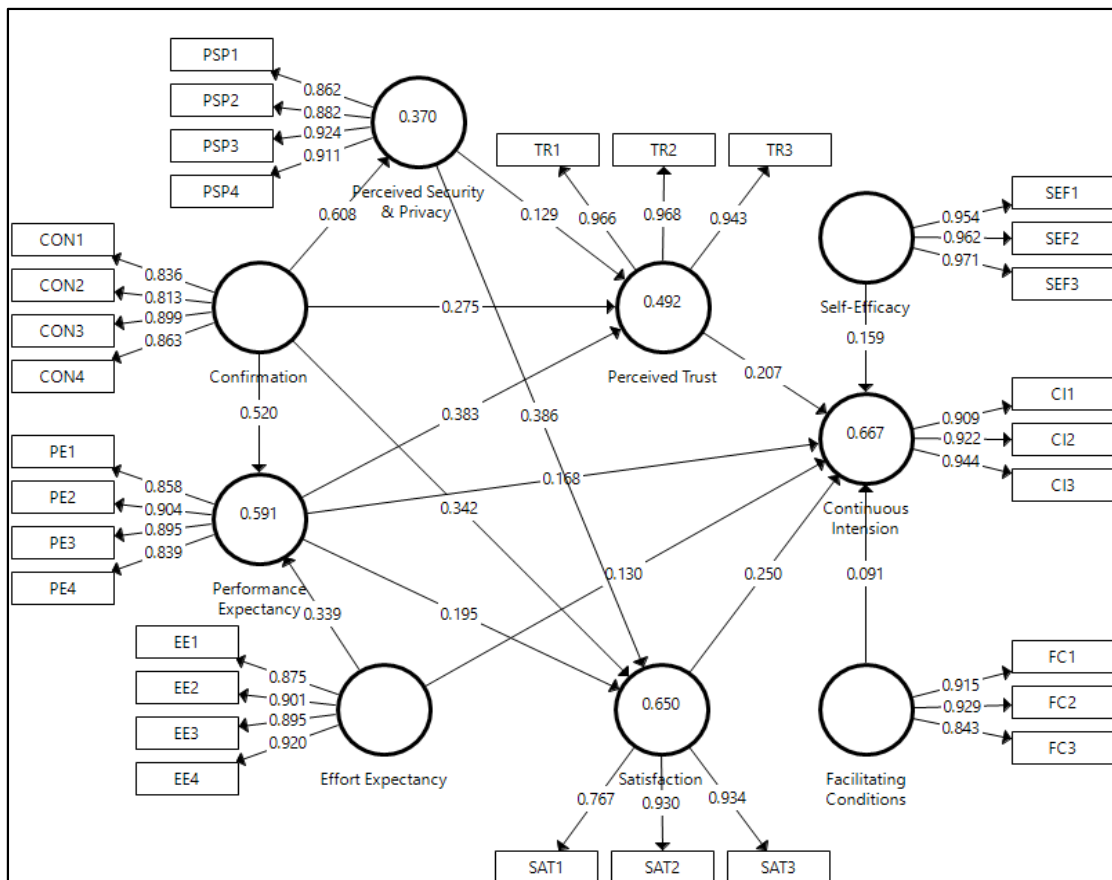
of CMB (McLean et al., 2020). Thirdly, we used a different measurement scale for the satisfaction construct as a technique to reduce the likelihood of CMB (Leong et al., 2020). Finally, we apply a common latent factor (CLF) with all indicators of the constructs included in the model. The CLF pro-

duced a value of 0.5117. To calculate the common method variance, 0.5117 was squared, which yields a value of 0.2620 (26.2%). A value which falls below the recommended 50% (McLean et al., 2020), suggesting the unlikelihood of CMB in this study.

V. Results

The research model presented in <Figure 2> was analyzed using SmartPLS 3.2.9 (Ringle et al., 2015), a software that relies on partial least squares structural equation modelling (PLS-SEM) technique. IS researchers have justified the use of PLS-SEM for the

following reasons, including: PLS delivers latent variable scores, i.e., proxies of the constructs, which are measured by one or several indicators (manifest variables); PLS path modeling avoids small sample size problems and can therefore be applied in some situations when other methods cannot; PLS path modeling can estimate very complex models with many latent and manifest variables; PLS path modeling has less stringent assumptions about the distribution of variables and error terms; PLS can handle both reflective and formative measurement models (Henseler et al., 2009, p. 283) and PLS focuses on prediction (Hair et al., 2012). In this study, PLS-SEM was used as the research model, presented in Figure



<Figure 3> The Measurement and Structural Models

three below is complex with many latent and manifest variables and this research study focuses on the prediction of determinant factors which influence Kuwaiti users' behavioral intentions to continue using m-banking services. The justifications to use PLS-SEM in this study are consistent with the justification reported in marketing and information systems research (Hair et al., 2012; Henseler et al., 2009).

Hair et al. (2017a) suggested that the first phase in PLS-SEM is to specify a path model that connects the measurement items with the constructs. The model specification is concerned with setting up the outer (i.e., measurement) model and the inner (i.e., structural) model. The outer model presents the relationships between the measurement items and constructs, while the inner model presents the relationships between the constructs. <Figure 3> presents the model specification (measurement and structural models) of this study.

After specifying the research model, Hair et al. (2017a), Hair et al. (2017b) recommend the validation of the model by: 1) assessing the outer (i.e., measurement) model then (2) assessing the inner (i.e., structural) model.

5.1. Measurement Model

Hair et al. (2017a) argued that both reliability and validity have to be verified during measurement model assessment. Measurement model reliability is measured by utilizing both Cronbach's alpha (CA) and composite reliability (CR) Hair et al. (2017b). <Table 3> shows that the CA and CR values for all the latent variables are above the threshold measurement of 0.7 (Henseler et al., 2009; Henseler et al., 2015).

Measurement model validity is evaluated by assessing convergent validity and discriminant validity. Henseler et al. (2009, p. 299) argued that convergent

validity is established when "a set of indicators represents one and the same underlying construct". The convergent validity was assessed using the average variance extracted (AVE) and factor loadings. The AVE should be at least 0.50 and above (Hair et al. (2017a); Henseler et al., 2015). The loadings of all measurement items (i.e., indicators) should be 0.50 or above on their hypothesized construct and they should be significant ($p < 0.05$) Hair et al. (2017b). These two criteria have been fulfilled as shown in <Table 3>.

Discriminant validity refers to "the extent to which a construct is empirically distinct from other constructs in the path model" (Sarstedt et al., 2014, p. 108), and can be assessed by the Fornell and Larcker (1981) criterion. The Fornell and Larcker (1981) criterion requires constructs' AVE values to be greater than the squared inter-construct correlations. As seen in <Table 4>, when comparing the square roots of the AVE values with the other values on each column, the square roots of the AVE values for each latent variable are greater than any correlation relating to each latent variable.

As Fornell and Larcker criterion overstate the presence of discriminant validity, Henseler et al. (2015) recommended the use of Heterotrait - Monotrait (HTMT) criterion to test the discriminant validity. Using a Monte Carlo simulation study, Henseler et al. (2015) found that HTMT is able to achieve higher specificity and sensitivity rates (97% to 99%) compared to the Fornell-Lacker (20.82%), the most commonly used method to assess discriminant validity. The results shown in <Table 5> demonstrated that all the HTMT values were lower than the recommended threshold 0.90 (e.g., Gold et al., 2001; Grewal et al., 2004; Hair et al., 2017b; Teo et al., 2008; Voorhees et al., 2016). Hence, the criterion for discriminant validity was achieved.

<Table 3> Items Loading, Significance Level, Cronbach's Alpha, Composite Reliability, and AVE.

Items	Loading	p-value	Mean	Std. Deviation	Cronbach's Alpha	Composite Reliability	AVE
Perceived Security & Privacy (PSP)					0.917	0.941	0.801
PSP1	0.862	0.000	5.97	1.16			
PSP2	0.882	0.000	6.11	1.08			
PSP3	0.924	0.000	6.20	1.07			
PSP4	0.911	0.000	6.24	1.03			
Confirmation (CON)					0.875	0.914	0.728
CON1	0.836	0.000	5.56	1.22			
CON2	0.813	0.000	6.07	1.04			
CON3	0.899	0.000	5.84	1.11			
CON4	0.863	0.000	5.64	1.28			
Performance Expectancy (PE)					0.897	0.928	0.764
PE1	0.858	0.000	6.04	1.14			
PE2	0.904	0.000	5.65	1.31			
PE3	0.895	0.000	5.84	1.28			
PE4	0.839	0.000	5.64	1.30			
Effort Expectancy (EE)					0.920	0.943	0.806
EE1	0.875	0.000	5.96	1.20			
EE2	0.901	0.000	6.03	1.07			
EE3	0.895	0.000	6.11	1.06			
EE4	0.920	0.000	6.08	1.05			
Perceived Trust (PT)					0.957	0.972	0.920
PT1	0.967	0.000	5.53	1.44			
PT2	0.968	0.000	5.58	1.37			
PT3	0.943	0.000	5.37	1.54			
Satisfaction (SAT)					0.852	0.911	0.775
SAT1	0.768	0.000	5.85	1.36			
SAT2	0.929	0.000	6.15	1.13			
SAT3	0.933	0.000	6.16	1.14			
Self-Efficacy (SE)					0.960	0.974	0.926
SE1	0.954	0.000	5.27	1.54			
SE2	0.962	0.000	5.16	1.54			
SE3	0.971	0.000	5.21	1.51			
Facilitating Conditions (FC)					0.841	0.895	0.684
FC1	0.915	0.000	6.01	1.00			
FC2	0.929	0.000	6.11	1.11			
FC4	0.843	0.000	6.01	1.09			
Continuous Intension (CI)					0.916	0.947	0.856
CI1	0.909	0.000	6.16	1.16			
CI2	0.922	0.000	5.64	1.57			
CI3	0.944	0.000	5.81	1.46			

<Table 4> Fornell and Larcker Discriminant Validity Criterion

	CON	CI	EE	FC	PSP	PT	PE	SAT	SEF
CON	0.853								
CI	0.765	0.925							
EE	0.584	0.624	0.898						
FC	0.650	0.565	0.555	0.897					
PSP	0.608	0.622	0.636	0.644	0.895				
PT	0.628	0.683	0.567	0.423	0.525	0.959			
PE	0.718	0.709	0.642	0.550	0.597	0.657	0.874		
SAT	0.716	0.692	0.570	0.599	0.710	0.592	0.670	0.880	
SEF	0.612	0.637	0.482	0.459	0.453	0.671	0.659	0.498	0.962

<Table 5> Hetrotrait - Monotrait Ratio (HTMT) Test

	CON	CI	EE	FC	PSP	PT	PE	SAT	SEF
CON									
CI	0.851								
EE	0.649	0.676							
FC	0.738	0.627	0.619						
PSP	0.677	0.673	0.691	0.720					
PT	0.687	0.730	0.605	0.464	0.557				
PE	0.807	0.779	0.708	0.620	0.657	0.708			
SAT	0.823	0.780	0.642	0.689	0.797	0.661	0.765		
SEF	0.666	0.681	0.513	0.501	0.479	0.701	0.708	0.558	

5.2. Structural Model

After ensuring the reliability and validity of the measurement model, the structure model is then assessed (Hair et al., 2017a; Henseler et al., 2009; Henseler et al., 2015). As suggested in SEM literature (e.g., Chin, 2010; Hair et al., 2017a; Hair et al., 2017b; Henseler et al., 2009; Henseler et al., 2015; Rabaa'i, 2017a), the assessment of the structural model entails: Estimates for path coefficients (β), Determination of coefficient (R^2), Predictive relevance (Q^2), and Estimates for total effects (f^2) and (q^2).

The first step in assessing the structural model,

using PLS, should be based on the path coefficient's (β) direction algebraic sign, magnitude and significance (e.g., Chin, 2010; Hair et al., 2017b; Henseler et al., 2009). In PLS, the individual path coefficients of the structural model can be interpreted as standardized beta coefficients of ordinary least squares regressions (Henseler et al., 2009, p. 304). Path coefficients should exceed .100 to account for a certain impact within the structural model (Urbach and Ahlemann, 2010). Furthermore, path coefficients should be significant at least at the .050 level (Henseler et al., 2009; Urbach and Ahlemann, 2010). A consistent bootstrapping process with 5,000 samples was

employed to examine the significance levels of path coefficients (Hair et al., 2017a; Hair et al., 2017b). <Table 6> presents the path coefficient, t- statistics and p-values for the proposed hypothesis. The path coefficient provides the significance of the hypothesized relations connecting the constructs. <Table 6> reveals that all hypotheses, except H18, were supported.

In PLS, R^2 values represent “the amount of variance in the construct in question that is explained by the model” (Chin, 2010, p. 674). <Figure 4> shows the correlation R^2 values for performance expectancy ($R^2 = 0.591$), perceived security and privacy ($R^2 = 0.370$), perceived trust ($R^2 = 0.492$), satisfaction ($R^2 = 0.650$), and continuous intention ($R^2 = 0.667$) and with the results of all path coefficients. The R^2 value of CI (66.7%) clearly indicates that the proposed structural model could offer ample explanation on continuous intention to use m-banking services.

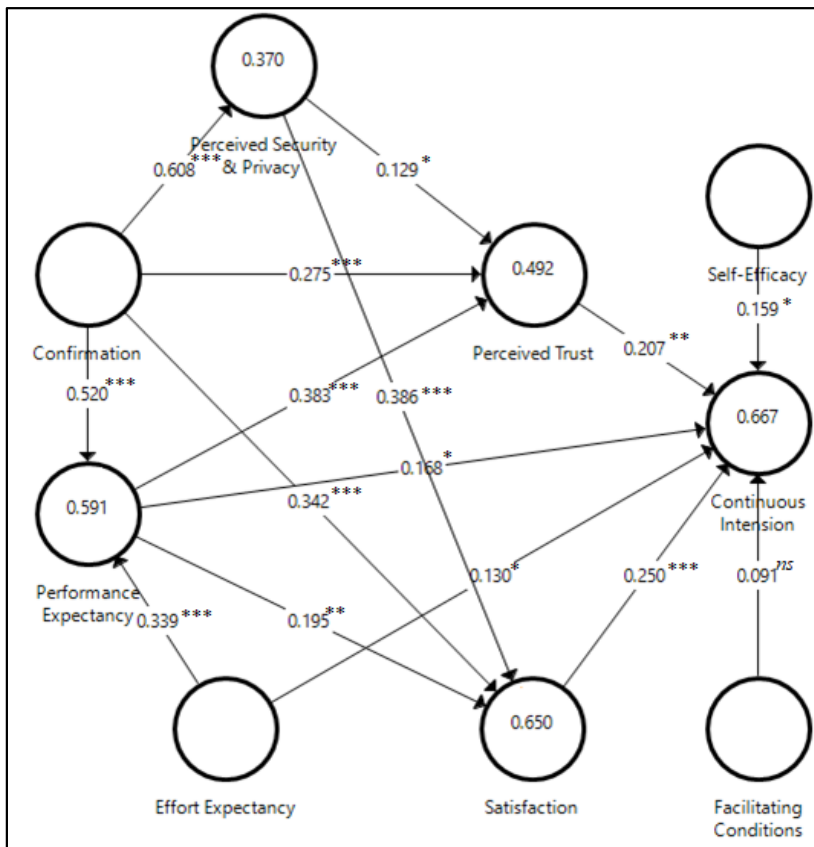
Predictive relevance (Q^2) values were also assessed by running a blindfolding procedure and calculated

using the cross-validated redundancy approach. The findings show that the predictive relevance (Q^2) for the continuous intention to use m-banking services (0.560), performance expectancy (0.443), perceived security and privacy (0.289), perceived trust (0.449), and satisfaction (0.492) are bigger than zero as suggested Chin (2010), Fornell and Cha (1994) and Hair et al. (2014). This indicates that the model has a significant predictive relevance.

As described by Hair et al. (2012), effect size f^2 “considers the relative impact of a particular exogenous latent variable on an endogenous latent variable by means of changes in the R^2 ”. Similar to the effect size f^2 , effect size q^2 shows an exogenous variable’s contribution to an endogenous variable’s Q^2 value (Hair et al., 2012). Cohen (1988) suggested that f^2 effect sizes of 0.02, 0.15, and 0.35 are termed small, medium, and large, respectively. However, Aguinis et al. (2005), based on a 30 years review, has shown that the average effect size in tests of moderation

<Table 6> Hypotheses’ Path Coefficients, t-statistics, and p-values

	Hypothesis No.	Path coefficient	t-statistics	p-values	Supported
CON → PE	H1	0.520	9.140	0.000	Yes
CON → SAT	H2	0.342	4.417	0.000	Yes
CON → PT	H3	0.275	3.568	0.000	Yes
CON → PSP	H4	0.608	10.953	0.000	Yes
PE → PT	H5	0.383	5.407	0.000	Yes
PE → SAT	H6	0.195	3.036	0.003	Yes
PE → CI	H7	0.168	2.454	0.014	Yes
SAT → CI	H8	0.250	3.743	0.000	Yes
PSP → PT	H9	0.129	2.054	0.041	Yes
PSP → SAT	H10	0.386	5.577	0.000	Yes
EE → PE	H11	0.339	5.170	0.000	Yes
EE → CI	H12	0.130	2.438	0.015	Yes
PT → CI	H13	0.207	3.128	0.002	Yes
FC → CI	H14	0.091	1.779	0.076	No
SEF → CI	H15	0.159	2.553	0.011	Yes



<Figure 4> The Structural Model

is only 0.009. As such, Kenny (2018) argued that a more realistic standard for effect sizes might be 0.005, 0.01, and 0.025 for small, medium, and large, respectively. The author stated that these values are “optimistic” given the Aguinis et al. (2005) review. <Table 7> shows the effect sizes results. While, for example, the effect size f^2 of perceived security and privacy (PSP) on perceived trust (PT) is medium (0.019), according to Kenny (2018) standard effect size, its effect size f^2 on Satisfaction (SAT) (0.245) is large. Similarly, the effect size q^2 of PSP on PT (0.015) is considered medium, according to Kenny (2018) standard effect size, its effect size q^2 on SAT (0.116) is large.

The study extends the standard reporting of

PLS-SEM by running the Importance-Performance Map Analysis (IPMA). The PLS-IPMA tests the total effect of an exogenous variable on a specific target endogenous variable (i.e., importance) with the averaged latent variable score of the exogenous construct (i.e., performance) (Hair et al., 2017b). This test aims at detecting an exogenous variable that more effectively improved the value of the target endogenous variable (i.e., behavioral intension in this case) with its relatively high importance and low performance (Hock et al., 2010). As shown in <Table 8>, to predict users’ continuous intension to use m-banking services, confirmation has the highest importance (0.473), followed by performance expectancy (0.339), satisfaction (0.298), effort expectancy (0.296), and per-

<Table 7> Effect Sizes

	f^2					q^2				
	CI	PSP	PT	PE	SAT	CI	PSP	PT	PE	SAT
CON		0.587	0.065	0.434	0.145		0.406	0.054	0.237	0.059
EE	0.025			0.185		0.014			0.104	
FC	0.014					0.011				
PSP			0.019		0.245			0.015		0.116
PT	0.054					0.032				
PE	0.030		0.128		0.048	0.018		0.109		0.067
SAT	0.082					0.046				
SEF	0.034					0.021				

<Table 8> PLS-IPMA Analysis for Continuous Intension to Use m-banking Services

	Total Effect Importance	Index Value Performance
Confirmation	0.473	80.121
Effort Expectancy	0.296	84.723
Facilitating Conditions	0.120	84.327
Perceived Security & Privacy	0.160	86.073
Perceived Trust	0.188	76.001
Performance Expectancy	0.339	80.476
Satisfaction	0.298	85.227
Self-Efficacy	0.136	72.414

ceived trust (0.188). However, in terms of the performance of these constructs to predict users' continuous intension to use m-banking services, perceived security and privacy tops the list (86.073), followed satisfaction (85.227), effort expectancy (84.723), facilitating conditions (84.327), performance expectancy (80.476), and confirmation (80.121). These results imply that though confirmation is the most important predictor of users' continuous intension to use m-banking services, perceived security and privacy should be the highest priority.

Unlike covariance-based CB-SEM such as AMOS, PLS does not provide the overall model-goodness-of-fit statistics. To address this issue, Hair et

al. (2017a) and Henseler et al. (2015) suggested using the Standardized Root Mean Square Residual (SRMR) fit index. For the structural model, the SRMR fit index is 0.054 which is lower than the proposed threshold value of 0.08 (Hair et al., 2017a; Henseler et al., 2015). Additionally, as suggested by Hair et al. (2017a), the structural model was also assessed through the following measures: average path coefficient (APC), average R-squared (ARS), and average variance inflation factor (AVIF). Hair et al. (2017a) recommended that the values for both the APC and ARS be significant at least at the 0.05 level, whereas the AVIF should be lower than 5. <Table 9> reveals that the model meets the recommended

<Table 9> Inner Model Evaluation Indices

Average path coefficient (APC)	Average R-squared (ARS)	Average variance inflation factor (AVIF)	SRMR fit index
0.279*	0.554*	3.68	0.054

Note: * $p < 0.001$

threshold values, suggesting that the data is a good fit with the proposed model.

VI. Discussion and Implications

6.1. Discussion

This study aimed at providing further understandings in relation to the main factors that could predict customers' intention to continue using m-banking services in the State of Kuwait. As such, the study adopted the ECM, as a theory base, and extended the model with other factors such as self-efficacy, facilitating conditions, perceived trust, effort expectancy, and perceived security and privacy. Constructs reliability and validity as well as model fit indices and predictive relevance were all achieved. As shown in <Figure 4>, the statistical results supported the predictive power of the conceptual model in explaining substantial variance in performance expectancy ($R^2 = 0.591$), perceived security and privacy ($R^2 = 0.370$), perceived trust ($R^2 = 0.492$), satisfaction ($R^2 = 0.650$) and continuous intension ($R^2 = 0.667$). Such values of R^2 were within a highly acceptable level, which exceeded all the recommended values in this regard, such as: 40% (Straub and Gefen, 2004) and 30% (Kline, 2016). This, in turn, provided further evidence supporting the conceptual model proposed in the current study to explain customers' intention to continue using m-banking services. As shown in <Table 6>, all study

hypotheses, except H14 (Facilitating Conditions \rightarrow Continuous Intension), were established and confirmed with the results.

The study results indicated that the confirmation construct has a significant positive relationship with performance expectancy (H1) and satisfaction (H2). These significant relationships were supported in previous studies (e.g., Al-Emran et al., 2020; Alshurideh et al., 2020; Chen et al., 2013; Gupta et al., 2020; Hong et al., 2006; Joo et al., 2016; Joo et al., 2017; Oghuma et al., 2015; Oghuma et al., 2016; Poromatikul et al., 2020; Susanto et al., 2016). These results could be interpreted as when customers' expectations towards m-banking services' benefits and advantages are confirmed, the system will, in turn, influence their performance and satisfaction. Moreover, the study results confirmed the important role of the confirmation construct in predicting customers' perceived trust (H3) and perceived security and privacy (H4). These findings were noted in prior studies (e.g., Bhattacharjee et al., 2008; Foroughi et al., 2019; Gupta et al., 2020; Hwang et al., 2016; Iranmanesh et al., 2017; Susanto et al., 2016; Yuan et al., 2016). These results could be due to when customers' expectations, from using m-banking services, are confirmed; this, in turn, will exhibit their perceived security and privacy as well as perceived trust toward such services.

Additionally, the empirical results of this study have supported the significant relationships between performance expectancy and perceived trust (H5) and satisfaction (H6) with m-banking services. These

significant relationships were reported in prior studies (e.g., Al-Emran et al., 2020; Alshurideh et al., 2020; Asnakew, 2020; Foroughi et al., 2019; Joo et al., 2017; Kim-Soon et al., 2017; Marinković et al., 2020; Oghuma et al., 2016; Poromatikul et al., 2020; Sabah, 2019; Susanto et al., 2016; Tam et al., 2018). These results could be attributed to the fact that when m-banking services enhance the performance of customers, they would generally be satisfied with and trust such services. Also, the empirical results of this study supported the significant relationship between performance expectancy and users' continuous intention to use m-banking services (H7). This finding is in line with prior IS studies (Alalwan, 2020; Alalwan et al., 2017; Albashrawi and Motiwalla, 2019; Foroughi et al., 2019; Gilani et al., 2017; Martins et al., 2014; Poromatikul et al., 2020; Susanto et al., 2016; Venkatesh et al., 2011). This result implies that our study's respondents valued the usefulness, benefits, and convenience of the m-banking services and this promoted their continuous intention to use such services.

Statistical results also recognized the important role of satisfaction in influencing customers' continuous intention to use m-banking services (H8). This result is supported by previous IS and mobile banking studies (e.g., Al-Emran et al., 2020; Alshurideh et al., 2020; Asnakew, 2020; Foroughi et al., 2019; Joo et al., 2017; Kim-Soon et al., 2017; Oghuma et al., 2016; Poromatikul et al., 2020; Sabah, 2019; Susanto et al., 2016; Tam et al., 2018). This would be interpreted as customers' satisfaction with m-banking services will have a strong influence on their intention to continue using such services.

The empirical results demonstrated that perceived security and privacy significantly influence both perceived trust (H9) and satisfaction (H10). These results were previously reported in the context of m-banking

services (e.g., Albashrawi and Motiwalla, 2019; Hanafizadeh et al., 2014; Susanto et al., 2016; Zhou, 2012b). It is argued that, only when users have high confidence toward the security and privacy provided by a bank, they will trust the bank enough to use its m-banking services (Susanto et al., 2016). However, in their study, Susanto et al. (2016) found no significant relationship between perceived security and privacy and satisfaction. The authors argue that *"Since security is a must-have in banking services, its presence will not affect user satisfaction"* (p. 518). On the contrary, we argue that security and privacy are not guaranteed in the banking sector and since banking transactions involve critical financial information, it is important to assure users that it is secured to conduct different m-banking services. Hence, it is crucial to assure users of the security and privacy measures taken by a bank. These assurances will influence users' satisfaction with m-banking services (e.g., Albashrawi and Motiwalla, 2019; Hanafizadeh et al., 2014).

Furthermore, the results proved that effort expectancy also has a significant impact on performance expectancy (H11). This result can be interpreted as if users perceived the use of m-banking services needs less effort and is not difficult, they will perceive the use of these services as useful and beneficial in their lives (Davis, 1989). In other words, users' perception of the system usefulness is influenced by how easy the system is to use and does not require too much effort to learn and use. These results were reported in previous IS literature and mobile banking context (e.g., Alalwan et al., 2017; Natarajan et al., 2018; Riquelme and Rios, 2010). Additionally, statistical results of this study also confirmed the significant causal path between effort expectancy and customers' continuous intention to use m-banking services (H12). This implies that the respondents of our study

were anxious about the difficulty and simplicity when using m-banking services. This result is in line with prior findings (e.g., Alalwan, 2020; Alalwan et al., 2017; Hubert et al., 2017; Natarajan et al., 2018; Riquelme and Rios, 2010; Yu, 2012), and could be interpreted as when customers perceived the use of m-banking services to be easy and effortless, they will continue using such services

Perceived trust was also found to be a significant construct in predicting customers' continuous intention to use m-banking services (H13). This result was confirmed in previous studies (e.g., Alalwan et al., 2017; Poromatikul et al., 2020; Susanto et al., 2016). The result can be attributed to the fact that users, in m-banking services context, do not interact with bank employees face-to-face. Therefore, it is possible that users feel higher level of risk and higher uncertainty compared to offline banking at the branch of a bank (Susanto et al., 2016). In Kuwait, the context of this study, Rouibah et al. (2016) reported that customers' trust is the most important factor affecting customers' intention to use electronic online payments among Kuwaiti citizen. In fact, Shao et al. (2019) argued that for an emerging country, like Kuwait, given its relatively weaker institutional and legal environments, perceived trust plays an important salient role in promoting users' behaviors to continue using a technology such as m-banking services.

The empirical results of the current study failed to confirm the role of facilitating conditions in predicting customers' continuous intention to use m-banking services (H14). These findings could be due the following: Internet accessibility is always available in Kuwait, mobile network infrastructure is well developed and 100% of land area and population are covered (KFAS, 2019); all m-banking services are developed to work with Android or iOS

operating systems; hence, promoting the compatibility with other smart devices customers are using; the vast majority of m-banking services offer 24/7 customers' support line and frequently asked questions on their websites to ensure human support are available to customers when needed; the massive penetration of mobile devices and mobile apps leads to a high degree of user confidence and familiarity with downloading, configuring, and interacting with apps (Okumus et al., 2018); thus, supporting the role of facilitating conditions as a limiting factor (Okumus et al., 2015); finally, this study's participants are actual adopters, 90% of the participants have more than one year experience with m-banking services, and have used different m-banking services before; therefore, with adequate experience level of technology use, customers are less likely to be influenced by the role of facilitating conditions to shape their continuous intention to use a particular (Venkatesh et al., 2003; Venkatesh et al., 2012). Similar findings were reported by Okumus et al. (2018), Shaw and Sergueeva (2019), and Alalwan (2020) who found a non-significant relationship between facilitating conditions and behavioral intention to continue using mobile food diet apps, mobile commerce, and mobile food delivery apps respectively.

Finally, statistical results empirically affirmed the significant influence of self-efficacy on users' continuous intention to use m-banking services (H15). This implies that users' capabilities in conducting and accomplishing certain tasks using m-banking services will impact their continuous intention to use such services (Foroughi et al., 2019; Susanto et al., 2016).

6.2. Implications

From a theoretical perspective, this study added

on the existing knowledge of m-banking services and examined different factors predicting customers' intention to continue using these services in the post-adoption phase, which, so far, has not been studied in the State of Kuwait. Thus, to the best of our knowledge, this is the first study that extended and empirically assessed the applicability of the ECM in the m-banking services context in a developing country - Kuwait. Our study has extended the ECM by integrating factors that are important to m-banking services, including: perceived security and privacy, perceived trust, self-efficacy and facilitating conditions. This study investigated how confirmation, performance expectancy, and perceived security and privacy influenced m-banking customers' perceived trust and satisfaction. We also evaluated how performance expectancy, effort expectancy, perceived trust, satisfaction, self-efficacy and facilitating conditions predict customers' continuous intention to use m-banking services. Our study also goes beyond what was proposed in the original ECM and found that, in Kuwaiti context, perceived security and privacy significantly influence both perceived trust and satisfaction. Perceived trust was found to be a very significant factor in predicting Kuwaiti customers' continuous intention to use m-banking services. The study's results also demonstrated that satisfaction is an important factor for Kuwaiti customers' before they decide to continue using m-banking services. Additionally, this study's results confirmed that only when Kuwaiti customers have high confidence toward the security and privacy provided by a bank, they will trust the bank enough to use its m-banking services (Susanto et al., 2016). The results of this study also confirmed that security and privacy are not guaranteed in Kuwaiti banking sector, as argued by Susanto et al. (2016). In fact, since banking transactions involve critical financial in-

formation, it is critical to assure Kuwaiti customers that it is secured to conduct different m-banking services, hence; these assurances will, in turn, influence their satisfaction (e.g., Albashrawi and Motiwalla, 2019; Hanafizadeh et al., 2014).

From a practical perspective, this study shed light on different important factors, including perceived security and privacy, performance expectancy, confirmation, effort expectancy, perceived trust, satisfaction, and self-efficacy, which significantly influence customers' intention to continue using m-banking services in Kuwait. Hence, Kuwaiti banks should focus their attention to any aspect relating to these factors to motivate Kuwaiti customers to continue using m-banking services. With such attention given to these factors, banks can improve their m-banking services and ensure its continued use after the adoption phase. The results of this study provided evidence that customers' intention to continue using m-banking services in Kuwait is influenced by perceived trust and satisfaction. As such, Kuwaiti banks have to ensure that all m-banking services are available and running in secured platforms and assure users that they can conduct different financial transactions effectively, efficiently, and securely using these platforms. Additionally, to ensure customers' satisfaction with m-banking services, banks can expand on their financial services provided by m-banking, enhance the functionalities and features of m-banking services, and maintain the availability as well as the performance, effectiveness, and efficiency of m-banking services 24/7. Foroughi et al. (2019) argue the need for banks to establish and maintain relationships with m-banking users to ensure that the system is able to meet users' needs and expectations. They suggest that banks should meet their users' pre-adoption expectations. This in turn will positively influenced customers' satisfaction and achieve the role

of performance expectancy (Alalwan et al., 2017; Simintiras et al., 2014), which will affect continuous intention to use m-banking services. In contrast, if m-banking service providers do not meet customers' pre-adoption expectations, then it is possible that they will experience a continuing loss of users (Foroughi et al., 2019). Finally, to achieve the roles of effort expectancy and self-efficacy banks can conduct attractive awareness campaigns to demonstrate the usefulness, as well as the ease of use and learn, of m-banking services, design an easy to use, high quality and customizable user interface, and post videos that explain how to use m-banking services and to increase users' familiarity with different features of these services.

VII. Limitations and Future Research

While we believe that we invested our best efforts in this study to achieve its intended objectives, it is constrained by a few limitations. First, this study focused on Kuwaiti m-banking services users. Kuwait is a rich developing country with well-advanced technology infrastructure and its citizen are also much technology savvy (Rabaai et al., 2015), compared to the citizens in many other developing countries, and enjoys one of the highest internet and mobile penetration levels in the world (NBK, 2018). Future studies should investigate the proposed model in other countries with additional economic, environmental, and technological factors. Second, the majority of this study respondents (85%) were aged below 40 years. Although the distribution of the respondents' age is representative of the Kuwaiti population, given that Kuwait has a young population, with 63% below the age of 30 (NBK, 2018), findings might be biased. Future studies should validate the proposed model

among older individuals who are less technologically savvy than younger individuals who dominate mobile usage in general. Third, this study is cross-sectional, and thus it does not demonstrate changes in users' continuous intension to use m-banking services over time. Prior studies have found that user expectations change over time (Liao et al., 2009). Also, the external environment and competitors can influence users' expectations (Hsu et al., 2014). Therefore, a longitudinal empirical study should be conducted in future studies to explain how temporal changes affect users' continuous intension to use m-banking services. Finally, this study did not examine the quality of the m-banking services that users utilize. Future studies should investigate how satisfaction with as well as the quality of m-banking services, such as system quality and service quality, may influence customers' continuous intention to use m-banking services.

VIII. Conclusion

This study added on the existing literature of m-banking services and examined different factors predicting users' intension to continue using m-banking services in the post-adoption phase, where, studies on this phase are scarce in general, and so far, has not been studied in the Kuwaiti context in particular. Our study has extended the ECM (i.e., the theoretical foundation) by integrating factors that are important to m-banking services, including: perceived security and privacy, perceived trust, self-efficacy and facilitating conditions. The main statistical results of this study supported the predictive validity and relevance of the proposed model by accounting for about 66.7% of variance and 56% of predictive relevance of the Kuwaiti customers' continuous intention to use m-banking services. Confirmation, performance ex-

pectancy, and perceived security and privacy were all confirmed to be significant predictors of both m-banking users' perceived trust and satisfaction. Performance expectancy, effort expectancy, per-

ceived trust, satisfaction, and self-efficacy were all significant in predicting customers' continuous intention to use m-banking services, though facilitating conditions were not significant.

<References>

- [1] Abbas, S. K., Hassan, H. A., Asif, J., Junaid, H. M., and Zainab, F. (2018). What are the key determinants of mobile banking Adoption in Pakistan? *International Journal of Scientific & Engineering Research*, 9(2), 841-848.
- [2] Afshan, S., and Sharif, A. (2016). Acceptance of mobile banking framework in Pakistan. *Telematics and Informatics*, 33(2), 370-387. doi: 10.1016/j.tele.2015.09.005
- [3] Agarwal, R., Sambamurthy, V., and Stair, R. M. (2000). Research report: The evolving relationship between general and specific computer self-efficacy-an empirical assessment. *Information Systems Research*, 11(4), 418-430. doi: 10.1287/isre.11.4.418.11876
- [4] Aguinis, H., Beaty, J. C., Boik, R. J., and Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: A 30-year review. *Journal of Applied Psychology*, 90(1), 94-107. doi: 10.1037/0021-9010.90.1.94
- [5] Akturan, U., and Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence & Planning*, 30(4), 444-459. doi: 10.1108/02634501211231928
- [6] Alalwan, A. A. (2020). Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. *International Journal of Information Management*, 50, 28-44. doi: 10.1016/j.ijinfomgt.2019.04.008
- [7] Alalwan, A. A., Dwivedi, Y. K., and Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99-110. doi: 10.1016/j.ijinfomgt.2017.01.002
- [8] Alalwan, A. A., Dwivedi, Y. K., Rana, N. P. P., and Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), 118-139. doi: 10.1108/JEIM-04-2015-0035
- [9] Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., and Algharabat, R. (2018). Examining factors influencing Jordanian customers' intentions and adoption of internet banking: Extending UTAUT2 with risk. *Journal of Retailing and Consumer Services*, 40, 125-138. doi: 10.1016/j.jretconser.2017.08.026
- [10] Albashrawi, M., and Motiwalla, L. (2019). Privacy and personalization in continued usage intention of mobile banking: An integrative perspective. *Information Systems Frontiers*, 21(5), 1031-1043. doi: 10.1007/s10796-017-9814-7
- [11] Al-Emran, M., Arpac, I., and Salloum, S. A. (2020). An empirical examination of continuous intention to use m-learning: An integrated model. *Education and Information Technologies*. doi: 10.1007/s10639-019-10094-2
- [12] Alkhalidi, A. N. (2016). Adoption of mobile banking in Saudi Arabia: An empirical evaluation study. *International Journal of Managing Information Technology*, 8(2), 1-14.
- [13] Alkhalidi, A. N., and Kharm, Q. M. (2019). Customer's intention to adopt mobile banking services: The moderating influence of demographic factors. *International Journal of Innovation and Technology Management (IJITM)*, 16(5), 1-26.
- [14] Alraimi, K. M., Zo, H., and Ciganek, A. P. (2015). Understanding the MOOCs continuance: The role of openness and reputation. *Computers & Education*, 80, 28-38. doi: 10.1016/j.compedu.2014.08.006

- [15] Alsheikh, L., and Bojei, J. (2014). Determinants affecting customer's intention to adopt mobile banking in Saudi Arabia. *International Arab Journal of E-Technology*, 3(4), 210-219.
- [16] Alshurideh, M., Al Kurdi, B., and Salloum, S. A. (2020). Examining the main mobile learning system drivers' effects: A mix empirical examination of both the Expectation-Confirmation Model (ECM) and the Technology Acceptance Model (TAM). In A. E. Hassanien, K. Shaalan and M. F. Tolba (Eds.), *Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2019* (pp. 406-417). Springer International Publishing. doi: 10.1007/978-3-030-31129-2_37
- [17] Alwahaishi, S., and Snásel, V. (2013). Acceptance and use of information and communications technology: A UTAUT and flow based theoretical model. *Journal of Technology Management & Innovation*, 8(2), 61-73.
- [18] Arab Times. (2017). *NBK at forefront of tech adaption*. <http://www.arabtimesonline.com/news/category/kuwait/>
- [19] Arab times. (2019). *Kuwait Vision 2035 is a promising future strategy*. Retrieved from <http://www.arabtimesonline.com/news/kuwait-vision-2035-is-a-promising-future-strategy/>
- [20] Arpaci, I. (2016). Understanding and predicting students' intention to use mobile cloud storage services. *Computers in Human Behavior*, 58, 150-157. doi: 10.1016/j.chb.2015.12.067
- [21] Asnakew, Z. S. (2020). Customers' continuance intention to use mobile banking: Development and testing of an integrated model. *The Review of Socionetwork Strategies*, 14(1), 123-146. doi: 10.1007/s12626-020-00060-7
- [22] Avornyo, P., Fang, J., Odai, R. O., Vondee, J. B., and Nartey, M. N. (2019). Factors affecting continuous usage intention of mobile banking in Tema and Kumasi. *International Journal of Business and Social Science*, 10(3).
- [23] Aziz, N. (2015). *Smart devices as u-learning tools: Key factors influencing users' intention*. Master's Thesis, Stockholm University.
- [24] Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., and Patil, P. (2019). Consumer use of Mobile Banking (m-Banking) in Saudi Arabia: Towards an integrated model. *International Journal of Information Management*, 44, 38-52. doi: 10.1016/j.ijinfomgt.2018.09.002
- [25] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi: 10.1037/0033-295X.84.2.191
- [26] Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- [27] Bandura, A. (1994). Self-efficacy. In V. S. Ramachandran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). Academic Press.
- [28] Bhattacharjee, A. (2001a). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 25(3), 351-370. doi: 10.2307/3250921
- [29] Bhattacharjee, A. (2001b). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision Support Systems*, 32(2), 201-214. doi: 10.1016/S0167-9236(01)00111-7
- [30] Bhattacharjee, A., and Premkumar, G. (2004). Understanding changes in belief and attitude toward information technology usage: A theoretical model and longitudinal test. *MIS Quarterly*, 28(2), 229-254. doi: 10.2307/25148634
- [31] Bhattacharjee, A., Perols, J., and Sanford, C. (2008). Information technology continuance: A theoretic extension and empirical test. *Journal of Computer Information Systems*, 49(1), 17-26. doi: 10.1080/08874417.2008.11645302
- [32] Boonsiritomachai, W., and Pitchayadejanant, K. (2017). Determinants affecting mobile banking adoption by generation Y based on the unified theory of acceptance and use of technology model modified by the technology acceptance model concept. *Kasetsart Journal of Social Sciences*, S2452315117301601. doi: 10.1016/j.kjss.2017.10.005
- [33] Casalo, L. V., Flavián, C., and Guinaliú, M. (2007). The role of security, privacy, usability and reputation

- in the development of online banking. *Online Information Review*, 31(5), 583-603. doi: 10.1108/14684520710832315
- [34] Centeno, C. (2004). Adoption of internet services in the acceding and candidate countries, lessons from the internet banking case. *Telematics and Informatics*, 21(4), 293-315. doi: 10.1016/j.tele.2004.02.001
- [35] Central Bank of Kuwait. (2019). *Shaping the future*. Retrieved from <https://www.cbk.gov.kw>
- [36] Chan, S., and Lu, M. (2004). Understanding internet banking adoption and use behavior: A Hong Kong perspective. *Journal of Global Information Management*, 12(3), 21-43. doi: 10.4018/jgim.2004070102
- [37] Chang, C. W. (2016). *Why do people continue using Facebook: An empirical study from the perspectives of technology adoption and social contract*. Doctoral Dissertation, University of Southern Mississippi. Retrieved from <https://aquila.usm.edu/dissertations/332>
- [38] Changchit, C., Klaus, T., Lonkani, R., and Sampet, J. (2019). A cultural comparative study of mobile banking adoption factors. *Journal of Computer Information Systems*, 60(5), 1-11. doi: 10.1080/08874417.2018.1541724
- [39] Chawla, D., and Joshi, H. (2018). The moderating effect of demographic variables on mobile banking adoption: An empirical investigation. *Global Business Review*, 19(3_suppl), S90-S113. doi: 10.1177/0972150918757883
- [40] Chen, S. C. (2012). To use or not to use: Understanding the factors affecting continuance intention of mobile banking. *International Journal of Mobile Communications*, 10(5), 490. doi: 10.1504/IJMC.2012.048883
- [41] Chen, S. C., Liu, M. L., and Lin, C. P. (2013). Integrating technology readiness into the expectation - confirmation model: An empirical study of mobile services. *Cyberpsychology, Behavior, and Social Networking*, 16(8), 604-612. doi: 10.1089/cyber.2012.0606
- [42] Cheng, P., OuYang, Z., and Liu, Y. (2019). Understanding bike sharing use over time by employing extended technology continuance theory. *Transportation Research Part A: Policy and Practice*, 124, 433-443. doi: 10.1016/j.tra.2019.04.013
- [43] Cheng, Y. M. (2014a). Extending the expectation-confirmation model with quality and flow to explore nurses' continued blended e-learning intention. *Information Technology & People*, 27(3), 230-258. doi: 10.1108/ITP-01-2013-0024
- [44] Cheng, Y. M. (2014b). Why do users intend to continue using the digital library? An integrated perspective. *Aslib Journal of Information Management*, 66(6), 640-662. doi: 10.1108/AJIM-05-2013-0042
- [45] Cheng, Y., Sharma, S., Sharma, P., and Kulathunga, K. (2020). Role of personalization in continuous use intention of mobile news apps in India: Extending the UTAUT2 model. *Information*, 11(1), 33. doi: 10.3390/info11010033
- [46] Cheung, C. M. K., Lee, M. K. O., and Lee, Z. W. Y. (2013). Understanding the continuance intention of knowledge sharing in online communities of practice through the post-knowledge-sharing evaluation processes: Understanding the continuance intention of knowledge sharing in online communities of practice through the postknowledge-sharing evaluation processes. *Journal of the American Society for Information Science and Technology*, 64(7), 1357-1374. doi: 10.1002/asi.22854
- [47] Chin, W. W. (2010). Bootstrap cross-validation indices for PLS path model assessment. In V. Esposito Vinzi, W. W. Chin, J. Henseler and H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications* (pp. 83-97). Springer. doi: 10.1007/978-3-540-32827-8_4
- [48] Chiu, Y. L., and Tsai, C. C. (2014). The roles of social factor and internet self-efficacy in nurses' web-based continuing learning. *Nurse Education Today*, 34(3), 446-450. doi: 10.1016/j.nedt.2013.04.013
- [49] Choi, K., Wang, Y., and Sparks, B. (2019). Travel app users' continued use intentions: It's a matter of value and trust. *Journal of Travel & Tourism*

- Marketing*, 36(1), 131-143. doi: 10.1080/10548408.2018.1505580
- [50] Chong, A. Y. L. (2013). A two-staged SEM-neural network approach for understanding and predicting the determinants of m-commerce adoption. *Expert Systems with Applications*, 40(4), 1240-1247. doi: 10.1016/j.eswa.2012.08.067
- [51] Choudrie, J., Junior, C. O., McKenna, B., and Richter, S. (2018). Understanding and conceptualising the adoption, use and diffusion of mobile banking in older adults: A research agenda and conceptual framework. *Journal of Business Research*, 88, 449-465. doi: 10.1016/j.jbusres.2017.11.029
- [52] Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Erlbaum.
- [53] Cui, F., Lin, D., and Qu, H. (2018). The impact of perceived security and consumer innovativeness on e-loyalty in online travel shopping. *Journal of Travel & Tourism Marketing*, 35(6), 819-834. doi: 10.1080/10548408.2017.1422452
- [54] Dai, H. M., Teo, T., Rappa, N. A., and Huang, F. (2020). Explaining Chinese university students' continuance learning intention in the MOOC setting: A modified expectation confirmation model perspective. *Computers & Education*, 150, 103850. doi: 10.1016/j.compedu.2020.103850
- [55] Damghanian, H., Zarei, A., and Siahsarani Kojuri, M. A. (2016). Impact of perceived security on trust, perceived risk, and acceptance of online banking in Iran. *Journal of Internet Commerce*, 15(3), 214-238. doi: 10.1080/15332861.2016.1191052
- [56] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. doi: 10.2307/249008
- [57] Ding, Y. (2019). Looking forward: The role of hope in information system continuance. *Computers in Human Behavior*, 91, 127-137. doi: 10.1016/j.chb.2018.09.002
- [58] Dixit, N., and Datta, S. (2010). Acceptance of e-banking among adult customers: An empirical investigation in India. *The Journal of Internet Banking and Commerce*, 15(2), 1-17.
- [59] Dwivedi, Y. K., Rana, N. P., Janssen, M., Lal, B., Williams, M. D., and Clement, M. (2017). An empirical validation of a unified model of electronic government adoption (UMEGA). *Government Information Quarterly*, 34(2), 211-230. doi: 10.1016/j.giq.2017.03.001
- [60] Farah, M. F., Hasni, M. J. S., and Abbas, A. K. (2018). Mobile-banking adoption: Empirical evidence from the banking sector in Pakistan. *International Journal of Bank Marketing*, 36(7), 1386-1413. doi: 10.1108/IJBM-10-2017-0215
- [61] Faria, G. (2012). *Mobile banking adoption: A novel model in the Portuguese context*. Universidade Nova de Lisboa.
- [62] Fornell, C., and Cha, J. (1994). Partial least squares. In R. P. Bagozzi (Ed.), *Advanced methods of marketing research* (pp. 52-78.). Blackwell, Cambridge. Retrieved from <https://ci.nii.ac.jp/naid/10017428683/>
- [63] Fornell, C., and Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388. doi: 10.1177/002224378101800313
- [64] Foroughi, B., Iranmanesh, M., and Hyun, S. S. (2019). Understanding the determinants of mobile banking continuance usage intention. *Journal of Enterprise Information Management*, 32(6), 1015-1033. doi: 10.1108/JEIM-10-2018-0237
- [65] Fu, X., Zhang, J., and Chan, F. T. S. (2018). Determinants of loyalty to public transit: A model integrating satisfaction-loyalty theory and expectation-confirmation theory. *Transportation Research Part A: Policy and Practice*, 113, 476-490. doi: 10.1016/j.tra.2018.05.012
- [66] Gan, C., and Xiao, D. (2015). An empirical study on continuance intention of mobile reading. *Chinese Journal of Library and Information Science*, 8(2), 69-82.
- [67] Gilani, M. S., Iranmanesh, M., Nikbin, D., and Zailani, S. (2017). EMR continuance usage intention of healthcare professionals. *Informatics for Health*

- and Social Care*, 42(2), 153-165. doi: 10.3109/17538157.2016.1160245
- [68] Global Finance. (2020). *Kuwait startups: Seeding tomorrow's giants*. Retrieved from <https://www.gfmag.com/magazine/january-2020/kuwait-startups-seeing-tomorrows-giants>
- [69] Gold, A. H., Malhotra, A., and Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185-214. doi: 10.1080/07421222.2001.11045669
- [70] Grewal, R., Cote, J. A., and Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Marketing Science*, 23(4), 519-529. doi: 10.1287/mksc.1040.0070
- [71] Gu, J. C., Lee, S. C., and Suh, Y. H. (2009). Determinants of behavioral intention to mobile banking. *Expert Systems with Applications*, 36(9), 11605-11616. doi: 10.1016/j.eswa.2009.03.024
- [72] Gupta, A., Yousaf, A., and Mishra, A. (2020). How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model. *International Journal of Information Management*, 52, 102094. doi: 10.1016/j.ijinfomgt.2020.102094
- [73] Haider, M. J., Changchun, G., Akram, T., and Hussain, S. T. (2018). Does gender differences play any role in intention to adopt Islamic mobile banking in Pakistan?: An empirical study. *Journal of Islamic Marketing*, 9(2), 439-460. doi: 10.1108/JIMA-11-2016-0082
- [74] Hair, J. F., Hollingsworth, C., Randolph, A., and Chong, A. (2017a). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, 117(3), 442-458. doi: 10.1108/IMDS-04-2016-0130
- [75] Hair, J. F., Hult, T., Ringle, C., and Sarstedt, M. (2017b). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications.
- [76] Hair, J. F., Sarstedt, M., Hopkins, L., and 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. doi: 10.1108/EBR-10-2013-0128
- [77] Hair, J. F., Sarstedt, M., Pieper, T. M., and Ringle, C. M. (2012). The use of partial least squares structural equation modeling in strategic management research: A review of past practices and recommendations for future applications. *Long Range Planning*, 45(5), 320-340. doi: 10.1016/j.lrp.2012.09.008
- [78] Hair, J. F., Sarstedt, M., Ringle, C. M., and Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433. doi: 10.1007/s11747-011-0261-6
- [79] Hajiheydari, N., and Ashkani, M. (2018). Mobile application user behavior in the developing countries: A survey in Iran. *Information Systems*, 77, 22-33. doi: 10.1016/j.is.2018.05.004
- [80] Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A., and Jalilvand Shirkhani Tabar, M. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62-78. doi: 10.1016/j.tele.2012.11.001
- [81] Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. doi: 10.1007/s11747-014-0403-8
- [82] Henseler, J., Ringle, C. M., and Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics and P. N. Ghauri (Eds.), *New challenges to international marketing* (Vol. 20, pp. 277-319). Emerald Group Publishing Limited. doi: 10.1108/S1474-7979(2009)0000020014
- [83] Hew, J. J., Lee, V. H., Ooi, K. B., and Wei, J. (2015). What catalyses mobile apps usage intention: An empirical analysis. *Industrial Management & Data Systems*, 115(7), 1269-1291. doi: 10.1108/IMDS-

- 01-2015-0028
- [84] Hock, C., Ringle, C. M., and Sarstedt, M. (2010). Management of multi-purpose stadiums: Importance and performance measurement of service interfaces. *International Journal of Services Technology and Management*, 14(2/3), 188. doi: 10.1504/IJSTM.2010.034327
- [85] Hoehle, H., Scornavacca, E., and Huff, S. (2012). Three decades of research on consumer adoption and utilization of electronic banking channels: A literature analysis. *Decision Support Systems*, 54(1), 122-132. doi: 10.1016/j.dss.2012.04.010
- [86] Hong, S., Thong, J. Y. L., and Tam, K. Y. (2006). Understanding continued information technology usage behavior: A comparison of three models in the context of mobile internet. *Decision Support Systems*, 42(3), 1819-1834. doi: 10.1016/j.dss.2006.03.009
- [87] Hong, W., and Thong, J. Y. L. (2013). Internet privacy concerns: An integrated conceptualization and four empirical studies. *MIS Quarterly*, 37(1), 275-298.
- [88] Hsiao, C. H., and Tang, K. Y. (2015). Investigating factors affecting the acceptance of self-service technology in libraries: The moderating effect of gender. *Library Hi Tech*, 33(1), 114-133. doi: 10.1108/LHT-09-2014-0087
- [89] Hsiao, C. H., Chang, J. J., and Tang, K. Y. (2016). Exploring the influential factors in continuance usage of mobile social Apps: Satisfaction, habit, and customer value perspectives. *Telematics and Informatics*, 33(2), 342-355. doi: 10.1016/j.tele.2015.08.014
- [90] Hsiao, W. H., and Chang, T. S. (2014). Understanding consumers' continuance intention towards mobile advertising: A theoretical framework and empirical study. *Behaviour & Information Technology*, 33(7), 730-742. doi: 10.1080/0144929X.2013.789081
- [91] Hsu, C. L., Yu, C. C., and Wu, C. C. (2014). Exploring the continuance intention of social networking websites: An empirical research. *Information Systems and E-Business Management*, 12(2), 139-163. doi: 10.1007/s10257-013-0214-3
- [92] Hsu, M. H., and Chiu, C. M. (2004). Internet self-efficacy and electronic service acceptance. *Decision Support Systems*, 38(3), 369-381. doi: 10.1016/j.dss.2003.08.001
- [93] Hu, J., and Zhang, Y. (2016). Chinese students' behavior intention to use mobile library apps and effects of education level and discipline. *Library Hi Tech*, 34(4), 639-656. doi: 10.1108/LHT-06-2016-0061
- [94] Huang, Y. M. (2016). The factors that predispose students to continuously use cloud services: Social and technological perspectives. *Computers & Education*, 97, 86-96. doi: 10.1016/j.compedu.2016.02.016
- [95] Huang, Y. M. (2019). Examining students' continued use of desktop services: Perspectives from expectation-confirmation and social influence. *Computers in Human Behavior*, 96, 23-31. doi: 10.1016/j.chb.2019.02.010
- [96] Hubert, M., Blut, M., Brock, C., Backhaus, C., and Eberhardt, T. (2017). Acceptance of smartphone-based mobile shopping: Mobile benefits, customer characteristics, perceived risks, and the impact of application context: Acceptance of smartphone-based mobile shopping. *Psychology & Marketing*, 34(2), 175-194. doi: 10.1002/mar.20982
- [97] Huseynov, F., and Özkan Yıldırım, S. (2019). Online consumer typologies and their shopping behaviors in B2C e-commerce platforms. *SAGE Open*, 9(2), 215824401985463. doi: 10.1177/2158244019854639
- [98] Hwang, J., Han, H., and Choo, S. (2016). An investigation of the formation of rapport between players and dealers in the casino industry. *Journal of Destination Marketing & Management*, 5(2), 97-106. doi: 10.1016/j.jdmm.2015.11.004
- [99] Iranmanesh, M., Zailani, S., and Nikbin, D. (2017). RFID continuance usage intention in health care industry. *Quality Management in Health Care*, 26(2), 116-123. doi: 10.1097/QMH.0000000000000134
- [100] Jaradat, M. I. R., and Al Rababaa, M. S. (2013). Assessing key factor that influence on the acceptance

- of mobile commerce based on modified UTAUT. *International Journal of Business and Management*, 8(23), 102. doi: 10.5539/ijbm.v8n23p102
- [101] Johnson, V., Woolridge, R., Wang, W., and Bell, J. (2020). The impact of perceived privacy, accuracy and security on the adoption of mobile self-checkout systems. *Journal of Innovation Economics & Management*, 1(31), 221-247.
- [102] Joo, Y. J., Kim, N., and Kim, N. H. (2016). Factors predicting online university students' use of a mobile learning management system (m-LMS). *Educational Technology Research and Development*, 64(4), 611-630. doi: 10.1007/s11423-016-9436-7
- [103] Joo, Y. J., Park, S., and Shin, E. K. (2017). Students' expectation, satisfaction, and continuance intention to use digital textbooks. *Computers in Human Behavior*, 69, 83-90. doi: 10.1016/j.chb.2016.12.025
- [104] Joo, Y. J., So, H. J., and Kim, N. H. (2018). Examination of relationships among students' self-determination, technology acceptance, satisfaction, and continuance intention to use K-MOOCs. *Computers & Education*, 122, 260-272. doi: 10.1016/j.compedu.2018.01.003
- [105] Jøsang, A., Keser, C., and Dimitrakos, T. (2005). Can we manage trust? In P. Herrmann, V. Issarny and S. Shiu (Eds.), *Trust management* (Vol. 3477, pp. 93-107). Springer, Berlin Heidelberg. doi: 10.1007/11429760_7
- [106] Juniper Research. (2019). *Mobile banking users*. <https://www.juniperresearch.com/press-release/digital-banking-pr1>
- [107] Kapoor, K. K., Dwivedi, Y. K., and Williams, M. D. (2015). Examining the role of three sets of innovation attributes for determining adoption of the interbank mobile payment service. *Information Systems Frontiers*, 17(5), 1039-1056. doi: 10.1007/s10796-014-9484-7
- [108] Kassim, N. M. (2017). Effect of perceived security and perceived privacy towards trust and the influence on internet banking usage among Malaysians. *International Academic Journal of Social Sciences*, 4(2), 26-36.
- [109] Kenny, D. (2018). *Moderator variables*. <http://davidakenny.net/cm/moderation.htm>
- [110] Kim, B. (2010). An empirical investigation of mobile data service continuance: Incorporating the theory of planned behavior into the expectation-confirmation model. *Expert Systems with Applications*, 37(10), 7033-7039. doi: 10.1016/j.eswa.2010.03.015
- [111] Kim, M. J., Chung, N., and Lee, C. K. (2011). The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea. *Tourism management*, 32(2), 256-265. doi: 10.1016/j.tourman.2010.01.011
- [112] Kim, S. N., Ibrahim, M. A., Razzaly, W., Ahmad, A. R., and Sirisa, N. M. X. (2017). Mobile technology for learning satisfaction among students at Malaysian Technical Universities (MTUN). *Advanced Science Letters*, 23(1), 223-226. doi: 10.1166/asl.2017.7140
- [113] Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Publications.
- [114] Koenig Lewis, N., Palmer, A., and Moll, A. (2010). Predicting young consumers' take up of mobile banking services. *International Journal of Bank Marketing*, 28(5), 410-432. doi: 10.1108/02652321011064917
- [115] Kumar, A., Adlakaha, A., and Mukherjee, K. (2018). The effect of perceived security and grievance redressal on continuance intention to use M-wallets in a developing country. *International Journal of Bank Marketing*, 36(7), 1170-1189. doi: 10.1108/IJBM-04-2017-0077
- [116] Kumar, G., and Ravindran, D. (2012). An empirical study on service quality perceptions and continuance intention in mobile banking context in India. *Journal of Internet Banking and Commerce*, 17(1), 1-22.
- [117] Kuwait Foundation for the Advancement of Sciences (KFAS). (2019). *FinTech: Future of financial services*. Retrieved from <https://www.kfas.com/media/studies>
- [118] Laforet, S., and Li, X. (2005). Consumers' attitudes towards online and mobile banking in China.

- International Journal of Bank Marketing*, 23(5), 362-380. doi: 10.1108/02652320510629250
- [119] Leong, L. Y., Hew, T. S., Ooi, K. B., and Wei, J. (2020). Predicting mobile wallet resistance: A two-staged structural equation modeling-artificial neural network approach. *International Journal of Information Management*, 51, 102047. doi: 10.1016/j.ijinfomgt.2019.102047
- [120] Li, J., Wang, J., Wangh, S., and Zhou, Y. (2019). Mobile payment with alipay: An application of extended technology acceptance model. *IEEE Access*, 7, 50380-50387. doi: 10.1109/ACCESS.2019.2902905
- [121] Li, Y. M., and Yeh, Y. S. (2010). Increasing trust in mobile commerce through design aesthetics. *Computers in Human Behavior*, 26(4), 673-684. doi: 10.1016/j.chb.2010.01.004
- [122] Liao, C., Palvia, P., and Chen, J. L. (2009). Information technology adoption behavior life cycle: Toward a technology continuance theory (tct). *International Journal of Information Management*, 29(4), 309-320. doi: 10.1016/j.ijinfomgt.2009.03.004
- [123] Liébana-Cabanillas, F., Marinkovic, V., Ramos De Luna, I., and Kalinic, Z. (2018). Predicting the determinants of mobile payment acceptance: A hybrid SEM-neural network approach. *Technological Forecasting and Social Change*, 129, 117-130. doi: 10.1016/j.techfore.2017.12.015
- [124] Liébana Cabanillas, F., Muñoz Leiva, F., and Rejón Guardia, F. (2013). The determinants of satisfaction with e banking. *Industrial Management & Data Systems*, 113(5), 750-767. doi: 10.1108/02635571311324188
- [125] Lim, S. H., Kim, D. J., Hur, Y., and Park, K. (2019). An empirical study of the impacts of perceived security and knowledge on continuous intention to use mobile Fintech payment services. *International Journal of Human - Computer Interaction*, 35(10), 886-898. doi: 10.1080/10447318.2018.1507132
- [126] Lin, C. S., Wu, S., and Tsai, R. J. (2005). Integrating perceived playfulness into expectation-confirmation model for web portal context. *Information & Management*, 42(5), 683-693. doi: 10.1016/j.im.2004.04.003
- [127] Lu, H. P., and Lee, M. R. (2012). Experience differences and continuance intention of blog sharing. *Behaviour & Information Technology*, 31(11), 1081-1095. doi: 10.1080/0144929X.2011.611822
- [128] Lurudusamy, N., and Ramayah, T. (2016). The antecedents of broadband internet adoption and continuance usage in Malaysian household context. *Journal of Theoretical and Applied Information Technology*, 88(3), 476-486.
- [129] Lwoga, E. T., and Komba, M. (2015). Antecedents of continued usage intentions of web-based learning management system in Tanzania. *Education+Training*, 57(7), 738-756. doi: 10.1108/ET-02-2014-0014
- [130] Madan, K., and Yadav, R. (2016). Behavioural intention to adopt mobile wallet: A developing country perspective. *Journal of Indian Business Research*, 8(3), 227-244. doi: 10.1108/JIBR-10-2015-0112
- [131] Maduku, D. K. (2016). Fostering m-banking continuance intention: The role of trust in banks, self-efficacy, and mobile network quality. *10th International Business Conference*, 186-196.
- [132] Maduku, Daniel K. (2016). The effect of institutional trust on internet banking acceptance: Perspectives of south african banking retail customers. *South African Journal of Economic and Management Sciences*, 19(4), 533-548. doi: 10.17159/2222-3436/2016/v19n4a5
- [133] Malaquias, R. F., and Hwang, Y. (2016). An empirical study on trust in mobile banking: A developing country perspective. *Computers in Human Behavior*, 54, 453-461. doi: 10.1016/j.chb.2015.08.039
- [134] Marinković, V., Đorđević, A., and Kalinić, Z. (2020). The moderating effects of gender on customer satisfaction and continuance intention in mobile commerce: A UTAUT-based perspective. *Technology Analysis & Strategic Management*, 32(3),

- 306-318. doi: 10.1080/09537325.2019.1655537
- [135] Martins, C., Oliveira, T., and Popovič, A. (2014). Understanding the internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, 34(1), 1-13. doi: 10.1016/j.ijinfomgt.2013.06.002
- [136] Masrek, M. N., and Razali, M. H. (2013). Antecedents and impacts of mobile banking transactions: A case of Malaysian consumers. *2013 International Conference on Advanced Computer Science Applications and Technologies*, 401-405. doi: 10.1109/ACSAT.2013.85
- [137] McLean, G., Osei-Frimpong, K., Al-Nabhani, K., and Marriott, H. (2020). Examining consumer attitudes towards retailers' m-commerce mobile applications-An initial adoption vs. continuous use perspective. *Journal of Business Research*, 106, 139-157. doi: 10.1016/j.jbusres.2019.08.032
- [138] Merhi, M., Hone, K., and Tarhini, A. (2019). A cross-cultural study of the intention to use mobile banking between lebanese and British consumers: Extending UTUAT2 with security, privacy and trust. *Technology in Society*, 59, 101151. doi: 10.1016/j.techsoc.2019.101151
- [139] Merikivi, J., Tuunainen, V., and Nguyen, D. (2017). What makes continued mobile gaming enjoyable? *Computers in Human Behavior*, 68, 411-421. doi: 10.1016/j.chb.2016.11.070
- [140] Mutahar, A. M., Daud, N. M., Thurasamy, R., Isaac, O., and Abdulsalam, R. (2018). The mediating of perceived usefulness and perceived ease of use: The case of mobile banking in Yemen. *International Journal of Technology Diffusion*, 9(2), 21-40. doi: 10.4018/IJTD.2018040102
- [141] Nascimento, B., Oliveira, T., and Tam, C. (2018). Wearable technology: What explains continuance intention in smartwatches? *Journal of Retailing and Consumer Services*, 43, 157-169. doi: 10.1016/j.jretconser.2018.03.017
- [142] Natarajan, T., Balasubramanian, S. A., and Kasilingam, D. L. (2018). The moderating role of device type and age of users on the intention to use mobile shopping applications. *Technology in Society*, 53, 79-90. doi: 10.1016/j.techsoc.2018.01.003
- [143] NBK Capital. (2019). *Digital banking: Why embracing a meaningful digital transformation is the only option*. Retrieved from <https://nbkcapital.com/2019/digital-banking-embracing-meaningful-digital-transformation-option/>
- [144] NBK. (2018). National Bank of Kuwait 2018 annual report. Retrieved from <https://www.nbk.com/nbk-group/investor-relations/Latest-Annual-Report.html> (Accessed 18 February 2020).
- [145] Nunnally, C., and Bernstein, H. (1994). *Psychometric theory* (3rd ed.). McGraw Hill.
- [146] Oertzen, A. S., and Odekerken-Schröder, G. (2019). Achieving continued usage in online banking: A post-adoption study. *International Journal of Bank Marketing*, 37(6), 1394-1418. doi: 10.1108/IJBM-09-2018-0239
- [147] Oghuma, A. P., Chang, Y., Libaque-Saenz, C. F., Park, M. C., and Rho, J. J. (2015). Benefit-confirmation model for post-adoption behavior of mobile instant messaging applications: A comparative analysis of KakaoTalk and Joyn in Korea. *Telecommunications Policy*, 39(8), 658-677. doi: 10.1016/j.telpol.2015.07.009
- [148] Oghuma, A. P., Libaque-Saenz, C. F., Wong, S. F., and Chang, Y. (2016). An expectation-confirmation model of continuance intention to use mobile instant messaging. *Telematics and Informatics*, 33(1), 34-47. doi: 10.1016/j.tele.2015.05.006
- [149] Okumus, B., Ali, F., Bilgihan, A., and Ozturk, A. B. (2018). Psychological factors influencing customers' acceptance of smartphone diet apps when ordering food at restaurants. *International Journal of Hospitality Management*, 72, 67-77. doi: 10.1016/j.ijhm.2018.01.001
- [150] Okumus, B., Bilgihan, A., and Ozturk, A. B. (2015). Factors affecting the acceptance of smartphone diet applications. *Journal of Hospitality Marketing*

- e- Management*, 25(6), 726-747. doi: 10.1080/19368623.2016.1082454
- [151] Oliveira, T., Faria, M., Thomas, M. A., and Popovič, A. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International Journal of Information Management*, 34(5), 689-703. doi: 10.1016/j.ijinfomgt.2014.06.004
- [152] Oliver, R. (1997). *Satisfaction: A behavioral perspective on the consumer*. McGraw Hill.
- [153] Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460-469. doi: 10.1177/002224378001700405
- [154] Patel, K. J., and Patel, H. J. (2018). Adoption of internet banking services in Gujarat: An extension of TAM with perceived security and social influence. *International Journal of Bank Marketing*, 36(1), 147-169. doi: 10.1108/IJBM-08-2016-0104
- [155] Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. doi: 10.1037/0021-9010.88.5.879
- [156] Poromatikul, C., De Maeyer, P., Leelapanyalert, K., and Zaby, S. (2020). Drivers of continuance intention with mobile banking apps. *International Journal of Bank Marketing*, 38(1), 242-262. doi: 10.1108/IJBM-08-2018-0224
- [157] Premkumar, G., and Bhattacharjee, A. (2008). Explaining information technology usage: A test of competing models. *Omega*, 36(1), 64-75. doi: 10.1016/j.omega.2005.12.002
- [158] Rabaa'i, A. A. (2012). *Evaluating the success of large-scale, integrated information systems through the lens of IS-impact and IS-support*. Doctoral Dissertation, Queensland University of Technology.
- [159] Rabaa'i, A. A. (2016). Extending the technology acceptance model (TAM) to assess students' behavioural intentions to adopt an e-learning system: The case of moodle as a learning tool. *Journal of Emerging Trends in Engineering and Applied Sciences*, 7(1), 13-30.
- [160] Rabaa'i, A. A. (2017a). Holistic procedures for contemporary formative construct validation using PLS: A comprehensive example. *International Journal of Business Information Systems*, 25(3), 279-318.
- [161] Rabaa'i, A. A. (2017b). The use of UTAUT to investigate the adoption of e-government in Jordan: A cultural perspective. *International Journal of Business Information Systems*, 24(3), 285-315.
- [162] Rabaa'i, A. A. (In press). An investigation into the acceptance of mobile wallets in the FinTech Era: An empirical study from Kuwait. *International Journal of Business Information Systems*.
- [163] Rabaa'i, A. A. and Zhu, X. (In press). Understanding the determinants of wearable payment adoption: An empirical study. *Interdisciplinary Journal of Information, Knowledge, and Management*.
- [164] Rabaa'i, A. A., Bhat, H., and Abu Al Maati, S. (2018). Theorising social networks addiction: An empirical investigation. *International Journal of Social Media and Interactive Learning Environments*, 6(1), 1. doi: 10.1504/IJSMILE.2018.10013518
- [165] Rabaa'i, A. A., Tate, M., and Gable, G. (2015). Can't see the trees for the forest? Why IS-SERVQUAL items matter. *Asia Pacific Journal of Information Systems*, 25(2), 211-238.
- [166] Rabaa'i, A. A. (2015). An empirical investigation on the adoption of e-government in developing countries: The case of Jordan. *Computer and Information Science*, 8(3), 83. doi: 10.5539/cis.v8n3p83
- [167] Rabaa'i, A. A., Zogheib, B., AlShatti, A., and AlJamal, E. M. (2015). Adoption of e-government in developing countries: The case of the state of Kuwait. *Journal of Global Research in Computer Science*, 6(10), 6-21.
- [168] Rabaa'i, A. A., Zogheib, B., AlShatti, A., and AlJamal, E. M. (2017). Adoption of e-government in developing countries: The case of the state of Kuwait. *Journal of Global Research in Computer Science*, 6(10).

- [169] Rahi, S., Abd Ghani, M., Alnaser, F. M., and Ngah, A. H. (2018). Investigating the role of unified theory of acceptance and use of technology (UTAUT) in internet banking adoption context. *Management Science Letters*, 8(3), 173-186. doi: 10.5267/j.msl.2018.1.001
- [170] Rauniar, R., Rawski, G., Yang, J., and Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6-30. doi: 10.1108/JEIM-04-2012-0011
- [171] Rezvani, A., Khosravi, P., and Dong, L. (2017). Motivating users toward continued usage of information systems: Self-determination theory perspective. *Computers in Human Behavior*, 76, 263-275. doi: 10.1016/j.chb.2017.07.032
- [172] Ringle, C., Wende, S., and Becker, J. (2015). SmartPLS 3. boenningstedt: SmartPLS gmbH. <http://www.smartpls.com>
- [173] Riquelme, H. E., and Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*, 28(5), 328-341. doi: 10.1108/02652321011064872
- [174] Rouibah, K., Lowry, P. B., and Hwang, Y. (2016). The effects of perceived enjoyment and perceived risks on trust formation and intentions to use online payment systems: New perspectives from an Arab country. *Electronic Commerce Research and Applications*, 19, 33-43. doi: 10.1016/j.elerap.2016.07.001
- [175] Roussou, I., Stiakakis, E., and Sifaleras, A. (2019). An empirical study on the commercial adoption of digital currencies. *Information Systems and E-Business Management*, 17(2-4), 223-259. doi: 10.1007/s10257-019-00426-7
- [176] Routray, S., Khurana, R., Payal, R., and Gupta, R. (2019). A move towards cashless economy: A case of continuous usage of mobile wallets in India. *Theoretical Economics Letters*, 9(4), 1152. doi: 10.4236/tel.2019.94074
- [177] Saadé, R., and Bahli, B. (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: An extension of the technology acceptance model. *Information & Management*, 42(2), 317-327. doi: 10.1016/j.im.2003.12.013
- [178] Sabah, N. M. (2019). Motivation factors and barriers to the continuous use of blended learning approach using Moodle: Students' perceptions and individual differences. *Behaviour & Information Technology*, 39(8), 1-24. doi: 10.1080/0144929X.2019.1623323
- [179] San Martín, H., and Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the Utaut framework. *Tourism Management*, 33(2), 341-350. doi: 10.1016/j.tourman.2011.04.003
- [180] Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., and Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115. doi: 10.1016/j.jfbs.2014.01.002
- [181] Shaikh, A. A., and Karjaluoto, H. (2015). Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129-142. doi: 10.1016/j.tele.2014.05.003
- [182] Shang, D., and Wu, W. (2017). Understanding mobile shopping consumers' continuance intention. *Industrial Management & Data Systems*, 117(1), 213-227. doi: 10.1108/IMDS-02-2016-0052
- [183] Shao, Z., Zhang, L., Li, X., and Guo, Y. (2019). Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender. *Electronic Commerce Research and Applications*, 33, 100823. doi: 10.1016/j.elerap.2018.100823
- [184] Shareef, M. A., Baabdullah, A., Dutta, S., Kumar, V., and Dwivedi, Y. K. (2018). Consumer adoption of mobile banking services: An empirical examination of factors according to adoption

- stages. *Journal of Retailing and Consumer Services*, 43, 54-67. doi: 10.1016/j.jretconser.2018.03.003
- [185] Sharma, R., Singh, G., and Sharma, S. (2020). Modelling internet banking adoption in Fiji: A developing country perspective. *International Journal of Information Management*, 53, 102116. doi: 10.1016/j.ijinfomgt.2020.102116
- [186] Sharma, S. K., and Sharma, M. (2019). Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation. *International Journal of Information Management*, 44, 65-75. doi: 10.1016/j.ijinfomgt.2018.09.013
- [187] Sharma, S. K., Govindaluri, S. M., Al-Muharrami, S., and Tarhini, A. (2017). A multi-analytical model for mobile banking adoption: A developing country perspective. *Review of International Business and Strategy*, 27(1), 133-148. doi: 10.1108/RIBS-11-2016-0074
- [188] Sharma, S. K., Sharma, H., and Dwivedi, Y. K. (2019). A hybrid SEM-neural network model for predicting determinants of mobile payment services. *Information Systems Management*, 36(3), 243-261. doi: 10.1080/10580530.2019.1620504
- [189] Shaw, N., and Sergueeva, K. (2019). The non-monetary benefits of mobile commerce: Extending UTAUT2 with perceived value. *International Journal of Information Management*, 45, 44-55. doi: 10.1016/j.ijinfomgt.2018.10.024
- [190] Shin, D. H., Shin, Y. J., Choo, H., and Beom, K. (2011). Smartphones as smart pedagogical tools: Implications for smartphones as u-learning devices. *Computers in Human Behavior*, 27(6), 2207-2214. doi: 10.1016/j.chb.2011.06.017
- [191] SSimintiras, A. C., Dwivedi, Y. K., and Rana, N. P. (2014). Can marketing strategies enhance the adoption of electronic government initiatives? *International Journal of Electronic Government Research(IJEGR)*, 10(2), doi: 10.4018/ijegr.2014040101
- [192] Singh, S., and Srivastava, R. K. (2018). Predicting the intention to use mobile banking in India. *International Journal of Bank Marketing*, 36(2), 357-378. doi: 10.1108/IJBM-12-2016-0186
- [193] Slade, E., Dwivedi, Y. K., Piercy, N. C., and Williams, M. D. (2014). Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending Utaut with innovativeness, risk, and trust: Consumers' adoption intentions of remote mobile payments. *Psychology & Marketing*, 32(8), 860-873. doi: 10.1002/mar.20823
- [194] Slade, E., Williams, M., Dwivedi, Y., and Piercy, N. (2014). Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing*, 23(3), 209-223. doi: 10.1080/0965254X.2014.914075
- [195] Spreng, R. A., MacKenzie, S. B., and Olshavsky, R. W. (1996). A reexamination of the determinants of consumer satisfaction. *Journal of Marketing*, 60(3), 15-32. doi: 10.1177/002224299606000302
- [196] Statista. (2019a). *Kuwait: Gross domestic product (GDP) in current prices from 1984 to 2024*. Retrieved from <https://www.statista.com/statistics/438858/gross-domestic-product-gdp-in-kuwait/>
- [197] Statista. (2019b). *Kuwait-statistics & facts*. Retrieved from <https://www.statista.com/topics/4650/kuwait/>
- [198] Statista. (2019c). *Mobile payments worldwide-Statistics & facts*. Retrieved from <https://www.statista.com/topics/4872/mobile-payments-worldwide/>
- [199] Straub, D., and Gefen, D. (2004). Validation guidelines for is positivist research. *Communications of the Association for Information Systems*, 13. doi: 10.17705/1CAIS.01324
- [200] Suh, B., and Han, I. (2002). Effect of trust on customer acceptance of internet banking. *Electronic Commerce Research and Applications*, 1(3), 247-263. doi: 10.1016/S1567-4223(02)00017-0
- [201] Sun, B., Sun, C., Liu, C., and Gui, C. (2017). Research on initial trust model of mobile banking users. *Journal of Risk Analysis and Crisis Response*, 7(1), 13. doi: 10.2991/jrarc.2017.7.1.2
- [202] Susanto, A., Chang, Y., and Ha, Y. (2016). Determinants of continuance intention to use

- the smartphone banking services: An extension to the expectation-confirmation model. *Industrial Management & Data Systems*, 116(3), 508-525. doi: 10.1108/IMDS-05-2015-0195
- [203] Tak, P., and Panwar, S. (2017). Using UTAUT 2 model to predict mobile app based shopping: Evidences from India. *Journal of Indian Business Research*, 9(3), 248-264. doi: 10.1108/JIBR-11-2016-0132
- [204] Tam, C., and Oliveira, T. (2017a). Understanding mobile banking individual performance: The Delone and Mclean model and the moderating effects of individual culture. *Internet Research*, 27(3), 538-562. doi: 10.1108/IntR-05-2016-0117
- [205] Tam, C., and Oliveira, T. (2017b). Literature review of mobile banking and individual performance. *International Journal of Bank Marketing*, 35(7), 1044-1067. doi: 10.1108/IJBM-09-2015-0143
- [206] Tam, C., Santos, D., and Oliveira, T. (2018). Exploring the influential factors of continuance intention to use mobile apps: Extending the expectation confirmation model. *Information Systems Frontiers*, 22(1), 243-257. doi: 10.1007/s10796-018-9864-5
- [207] Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. *Computers & Education*, 57(4), 2432-2440. doi: 10.1016/j.compedu.2011.06.008
- [208] Teo, T. S. H., Srivastava, S. C., and Jiang, L. (2008). Trust and electronic government success: An empirical study. *Journal of Management Information Systems*, 25(3), 99-132. doi: 10.2753/MIS0742-1222250303
- [209] The Times Kuwait. (2019). *Digital transactions, Fintech, to grow in coming years*. Retrieved from <https://www.timeskuwait.com/news/digital-transactions-fintech-to-grow-in-coming-years/>
- [210] Tran, L. T. T., Pham, L. M. T., and Le, L. T. (2019). E-satisfaction and continuance intention: The moderator role of online ratings. *International Journal of Hospitality Management*, 77, 311-322. doi: 10.1016/j.ijhm.2018.07.011
- [211] Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. doi: 10.2307/30036540
- [212] Venkatesh, V., Thong, J. Y. L., and Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178. doi: 10.2307/41410412
- [213] Venkatesh, V., Thong, J. Y. L., Chan, F. K. Y., Hu, P. J. H., and Brown, S. A. (2011). Extending the two-stage information systems continuance model: Incorporating Utaut predictors and the role of context: Context, expectations and is continuance. *Information Systems Journal*, 21(6), 527-555. doi: 10.1111/j.1365-2575.2011.00373
- [214] Voorhees, C. M., Brady, M. K., Calantone, R., and Ramirez, E. (2016). Discriminant validity testing in marketing: An analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, 44(1), 119-134. doi: 10.1007/s11747-015-0455-4
- [215] Wang, J. L., Jackson, L. A., Wang, H. Z., and Gaskin, J. (2015). Predicting Social Networking Site (SNS) use: Personality, attitudes, motivation and internet self-efficacy. *Personality and Individual Differences*, 80, 119-124. doi: 10.1016/j.paid.2015.02.016
- [216] Wang, W. T., Ou, W. M., and Chen, W. Y. (2019). The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective. *International Journal of Information Management*, 44, 178-193. doi: 10.1016/j.ijinfomgt.2018.10.011
- [217] Wu, C. C., Huang, Y., and Hsu, C. L. (2014). Benevolence trust: A key determinant of user continuance use of online social networks. *Information Systems and E-Business Management*, 12(2), 189-211. doi: 10.1007/s10257-013-0216-1
- [218] Xena, P., and Rahadi, R. A. (2019). Adoption of e-payment to support small medium enterprise

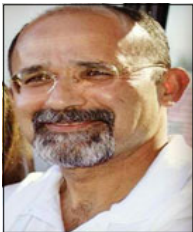
- payment system: A conceptualised model. *International Journal of Accounting*, 4(18), 32-41.
- [219] Yang, S., Lu, Y., Chen, Y., and Gupta, S. (2015). Understanding consumers' mobile channel continuance: An empirical investigation of two fitness mechanisms. *Behaviour & Information Technology*, 34(12), 1135-1146. doi: 10.1080/0144929X.2014.988176
- [220] Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of Electronic Commerce Research*, 13(2), 19.
- [221] Yuan, S., Liu, Y., Yao, R., and Liu, J. (2016). An investigation of users' continuance intention towards mobile banking in China. *Information Development*, 32(1), 20-34. doi: 10.1177/0266666914522140
- [222] Yueh, H. P., Huang, J. Y., and Chang, C. (2015). Exploring factors affecting students' continued wiki use for individual and collaborative learning: An extended UTAUT perspective. *Australasian Journal of Educational Technology*, 31(1). doi: 10.14742/ajet.170
- [223] Zhou, T. (2012a). Examining mobile banking user adoption from the perspectives of trust and flow experience. *Information Technology and Management*, 13(1), 27-37. doi: 10.1007/s10799-011-0111-8
- [224] Zhou, T. (2012b). Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. *Computers in Human Behavior*, 28(4), 1518-1525. doi: 10.1016/j.chb.2012.03.021
- [225] Zogheib, B., Rabaa'i, A., Zogheib, S., and Elshaheli, A. (2015). University student perceptions of technology use in mathematics learning. *Journal of Information Technology Education: Research*, 14, 417-438. doi: 10.28945/2315

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