
Intention to use mobile banking services: extended model

Abdelbaset M. Alkhawaldeh*

College of Business Administration,
Taibah University, Saudi Arabia
Email: Akhawaldeh@taibahu.edu.sa
*Corresponding author

Ali Matar

The Faculty of Economics and Business,
Jadara University, Jordan
Email: kenoali87@yahoo.com

Mahmoud Al-Rdaydeh

Ibn Rushd College for Management Sciences,
Abha, Saudi Arabia
Email: mahmouda27@gmail.com

Abstract: This research aims to evaluate the factors influencing the use of mobile banking by the customers. The extended model of this study was based on the technology acceptance model (TAM). Concerning this, the current research utilised two constructs of the TAM and integrated three new constructs into the model within mobile-banking context. The survey collected data from 205 mobile users who had their own experiences with mobile banking services provided by private banks in Jordan, these data were analysed using structural equation modelling (SEM). The results of this study demonstrated that perceived ease of use, perceived usefulness, perceived awareness, perceived bank credibility, and reference group influence had a positive impact on the use of mobile banking services by the customers. Banks should take these factors into account to promote positive perceptions of mobile banking to the customers.

Keywords: perceived ease of use; PEU; perceived usefulness; perceived awareness; perceived bank credibility; PCB; reference group influence; RGI.

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Biographical notes: Abdelbaset M. Alkhawaldeh is an Assistant Professor at College of Business, Taibah University, Saudi Arabia. He received his PhD in Business Administration/Marketing from Universiti Utara Malaysia. His research interests relate to the areas of management and marketing topics.

Ali Matar is an Assistant Professor of Finance and the Deputy Dean of Scientific Research and graduate studies at the Jadara University, Jordan. He earned his PhD from UNITEN University Tenaga National/Malaysia in 2014. He has already published over 22 papers in national and international journals and conferences. Besides, he is a member of the board of directors for *Future Business Journal* (Springer) and reviewer with various international impacted journals such as *Economic Modelling* (Elsevier). His research interests relate to the areas of financial markets, risk management, portfolio management, banking, financial analysis and management, energy economics and finance.

Mahmoud Al-Rdaydeh is an Assistant Professor at Ibn Rushd College for Management Sciences, Abha-Saudi Arabia. He received his BSc in Banking and Finance from Irbid University, Jordan and MSc in Banking and Finance from Yarmouk University, Jordan. He received his PhD in Islamic Finance from Universiti Sains Malaysia in 2017. His research interests included banking, Islamic finance, corporate finance, financial economics, financial risks and firm growth.

1 Introduction

Modern society is defined by its technological advancement, and this includes the advent of digital technologies and the internet. This fast-paced change in modern industrial societies causes a significant impact in a number of industries; the banking industry being one of them.

With the availability of the internet and digital devices, banks around the world have offered an alternative method of business for their customers. This type of service is called e-banking services, which integrate the characteristics of conventional banking, social computing, and the internet into one simple service (Sikdar et al., 2015). It should be noted that electronic services allow banks to communicate with customers and stakeholders effectively. Such services are also relatively cheaper and are typical of high quality (Dajani and Yaseen, 2016; Eisingerich and Bell, 2006; Gordon et al., 2008). Following these benefits, e-banking services have become one of the most important methods of services in the financial industries. Nevertheless, some of the banks' customers are still hesitant to use this type of service.

Although the Jordanian commercial banks had launched e-banking services in 2012 (Migdadi, 2012), the percentage usage of these services among their costumers still very low, where only 8% of the customers have performed their banking operation via e-banking services (Gharaibeh and Arshad, 2018, 2016). So, Jordanian banks are facing some difficulties in implementing their e-banking services because most of their clients prefer the conventional banking method. Some studies have looked into this matter, and they observed that most of the bank customers' in Arab countries took quite some time before starting to use the internet and online banking applications (Aldajani, 2011; Yaseen and Al Omoush, 2013). The Arabs were also observed to have social, cultural, and economic reservations on e-banking services (AbuShanab and Pearson, 2007; Al-Qeisi, 2009; Mansour et al., 2016; Nasri and Charfeddine, 2012). Without understanding the deeper reasons behind these reluctances on online banking services, the Jordanian banks will continue to have issues with the implementation of e-banking services, because their customers express less interest and motivation toward these new

banking technology (Alalwan et al., 2016, 2017). The factors behind that may be mostly related to the individual's acceptance of the technology. Therefore, researches based on the technology acceptance model (TAM) might shed some light on this matter. It should be noted that the TAM has been extended over the years (Davis et al., 1989). Nevertheless, researches based on the TAM are mostly conducted in developed countries, invalidating its generality to other countries.

Accordingly, it could be argued that the biggest challenge for the success of this technology is in convincing the consumers to use it as a full alternative for traditional channels (Laukkanen et al., 2007). In fact, as e-banking is in the early stage of its implementation in Jordan, quite a few numbers of researchers (i.e., Alkhalidi and Kharmah, 2018; Alalwan et al., 2017, 2016; Awwad and Ghadi, 2010) have addressed the related issues of such technology. Even though these studies enriched the understanding the main predictors of the adoption of e-banking in Jordan, there are other relevant factors such as the bank credibility (BC), group influence on the intention to use (ITU) e-banking services call for further explanation in the Jordanian context. Thus, the gap relating to e-banking literature could be summarised in a necessity of proposing a parsimony conceptual model, which can accurately clarify the adoption of e-banking from the perspective of Jordanian customers. Hence, in order to fill this gap, this study aims to assess the applicability of TAM extended model in developing countries, such as Jordan, by evaluating the impact of perceived usefulness (PU), perceived ease of use (PEU), perceived awareness (PA), perceived bank credibility (PCB), and reference group influence (RGI) on the ITU e-banking services. Based on the results, an extended model was proposed. The current research demonstrated that the proposed extended model is applicable to banking industries in developing countries. This is a useful discovery as it can assist the policymakers in drafting strategies that can attain and sustain their growth.

This paper is structured as follows: literature review, theoretical framework, research methodology, data analysis, discussions, and finally, limitations and recommendations, in that order. We will begin with a review of relevant literature in Section 2.

2 Literature review

There are a significant number of researches being done on the adoption of e-banking services by banks, and the factors influencing the clients' use of the services. Most of the researches focus on either personal reasons, such as individuals' perceptions of e-banking, or demographical influence. This section will review some studies relating to the factors influencing the use of e-banking services by the customers. Individuals' perceptions of internet banking may influence their intentions in using the services.

Recently, new factors of navigation and interaction have been mentioned by Durucu et al. (2019), they found that customers give high priority to these usability factors of navigation and interaction rather than functionality. Hu et al. (2019) introduced the Fintech services by providing more comprehensive sight of the determinants of user's, they found that user's trust in Fintech services has a very significant influence on user's attitudes for adoption. Next to the TAM model Baabdullah et al. (2019) proposed task-technology fit (TTF) model, their results supported the impact of perceived privacy, perceived security, PU and TTF on the customers' continued ITU mobile banking. Keramati et al. (2018) provided an appropriate framework to compensate e-bank errors

on an Iranian private bank by investigating the relationship between customer satisfaction, service recovery, and service failure.

In their study on the bank customers of the urban area of Coastal Karnataka, Pandey et al. (2017) observed that customers adapted internet banking if they were provided with positive perception and driving factors. Apart from that, they also stated that customers' who were equipped with knowledge, resource, security and privacy were more open to new technology. Their study was supported by research by Asadi et al. (2017), who adopted a TAM-diffusion theory model (TAM-DTM) in studying the Malaysian banking sector. From their study, trust, cost, security, and privacy can impact customers' motivation in using the online services, and these constructs can be integrated within the TAM-TDM.

In a similar vein, Patel and Patel (2018) who examined this issue in Gujarat using the TAM, reiterated the significant role of customers' perceptions in promoting the use of e-banking. Their study demonstrated that individuals' impressions on internet banking's security, usefulness, ease of use, and social influence directly impacted the use of this service. Roy et al. (2017) drew the same conclusion from their study that was based on TAM and perceived risk (PR) theory in India; PEU and external risk influence the use of internet banking by the customers. Other than the factors mentioned in this paragraph, Nasri and Charfeddine (2012) stated that the Tunisians' Government support, technology support, self-efficacy, perceived behaviour control, and personal attitudes determined their use of internet banking services.

Other researchers have stated similar reasons. For example, a study in Hong Kong of retail customers' internet banking behaviour revealed that personal innovativeness and PR had an impact on the adoption of e-banking (Yiu et al., 2007). Meanwhile, in terms of self-efficacy, Wang et al. demonstrated that personal abilities may have a role in influencing ones' impression on mobile banking's credibility, usefulness, and ease of use. A study by Chawla and Joshi (2017) provided an interesting insight on the links among age, technology acceptance (TA), and mobile banking adoption in Indian consumers. This study demonstrated the significant differing attitudes toward mobile banking across three segments – the TA leaders had the most positive attitudes towards internet banking, followed by TA followers and TA laggards, in that order. Interestingly, age influence TA and its usage.

The word 'trust' has been mentioned a few times across the literature as abovementioned, while other literatures have also mentioned this reason as well. Management students mentioned that trust propensity, among other reasons mentioned before, affects their inclinations in using the e-banking services (Kumar et al., 2017). This study was supported by Zandhessami and Geranmayeh (2014) study of Iranian firms, which hailed trust as most pertinent in implementing internet banking. Further support was provided by Devi Juwaheer et al. (2012) in their study in Mauritius. Meanwhile, the internet-only banks (IOBs) in France cultivated their consumers' trust through quality websites, respectful reputation, relative advantage, structural assurance, and consumers' familiarity with internet banking (Kaabachi et al., 2017). Moreover, the academics in Moodley and Govender (2016) study admitted that the banks' e-banking's performance expectancy, effort expectancy, and PR affect their motivation in using internet banking. From this, it can be observed that the external factor may also influence the use of internet banking services.

While internal factors may affect the adoption of internet banking, external factors may also influence its usage. Karthikeyan (2016) observed the situation in the banks in

Coimbatore City. From this study, the employees' work satisfaction was found to affect the delivery of service; unsatisfied employees provided sub-par services, discouraging consumers' from opting for any type of services. In a similar vein, the e-government adoption model (GAM) demonstrated that the motivations for using internet banking differ according to the phases of services (interaction, static and transaction) (Shareef et al., 2018). Furthermore, Claro and Rosa (2016) indicated that large and young firms with a diverse management board were more likely to adopt internet banking services, especially those who were competing with a large number of firm users. These are some of the external factors influencing the adoption of e-banking.

Moving on to the context of Jordan, the TAM had been used slightly in the assessment of online banking in Jordan. For example, AlKailani (2016) demonstrated that the integration of three new constructs – PR, perceived trust (PT), and BC – will increase the model's reliability in predicting the use of e-banking services. This was supported by Al Khasawneh (2015). Furthermore, it was observed that web privacy (Rawashdeh, 2015), internet experience and enjoyment (Abbad, 2013), and account essential factor (El-Qireem, 2013) affect the adoption of internet banking by the customers. It is also worth noting that demographic factors also influence the adoption of e-banking services, as demonstrated by Alalwan et al. (2015). Ahmad et al. (2018) also examined factors that expected to improve the intention of customers to use Arabic e-commerce websites.

Based on this literature review, there seems to be a lack of knowledge on the adoption of internet banking services in developing countries. Following this, an extended model of the TAM was constructed to strengthen the model, as proposed by previous scholars (AlKailani, 2016; Asadi et al., 2017; Kumar et al., 2017; Mohamed et al., 2018; Patel and Patel, 2018; Shareef et al., 2018; Punyatoya et al., 2018; Islam et al., 2019). This study utilised two constructs of the TAM and integrated three new constructs into the model, which were PA, PCB, and RGI. The new constructs were based on suggestions from previous literature (AlKailani, 2016; Kumar et al., 2017; Shareef et al., 2018). This framework will test its applicability in developing countries such as Jordan, enriching the body of knowledge on e-banking services.

3 Theoretical framework

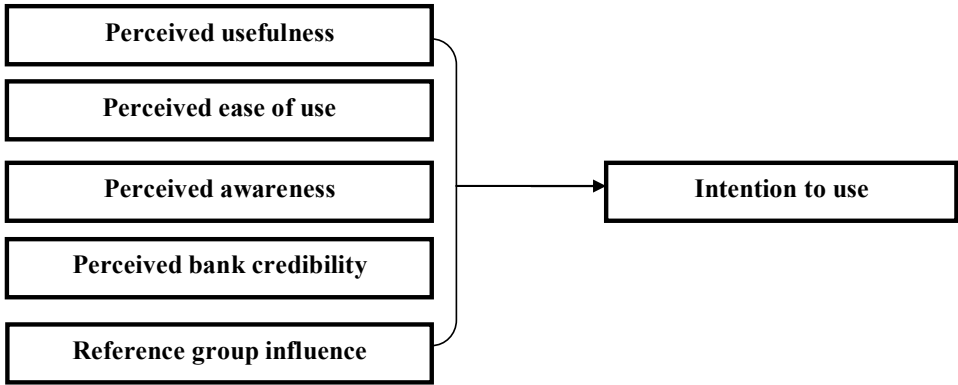
Of late, Kumar et al.'s (2017) demonstrated a significant positive influence of PU, PEU and RGI on the intentions of use. Likewise, Rehman et al. (2012) revealed that the intention of e-banking usage was affected by the PA of customers. Furthermore, Amin et al. (2012) observed a significant influence of PCB on intentions of use.

Following the literature review and the argument above, the current theoretical framework suggests that PU, PEU, PA, PCB, and RGI will have influence the customers' intention in using mobile banking services. In other words, positive perceptions of these factors will increase the use of mobile banking services. Thus,

- H1 PU has a significant relationship with intentions of use.
- H2 PEU has a significant relationship with intentions of use.
- H3 PA has a significant relationship with intentions of use.
- H4 PCB has a significant relationship with intentions of use.

H5 RGI has a significant relationship with intentions of use.

Figure 1 Proposed model



Notes: PU = perceived usefulness, PEU = perceived ease of use, PA = perceived awareness, PBC = perceived bank credibility, RGI = reference group influence and ITU = intention to use.

4 Research methodology

This study employed the systematic random sampling method using self-administered questionnaires. The respondents were 205 customers of housing bank and Islamic bank in Jordan. The researcher obtained this response rate after a hard effort in time and cost. The higher non-response rate was associated with the intercept survey method used in this study (Alkhawaldeh and Eneizan, 2018; Ong et al., 2015), and some participants might be refuse to express their point views. Nevertheless, the response rate seemed to be adequate by the standards of Hair et al. (2014) and Sekaran (2003). As an incentive for participation, respondents were given small gift (pen) to every participant. Some participants asked the researcher or the surveyor questions about the survey, who tend answered them.

Furthermore, the questionnaires were comprised of 17 items modified and adapted from past works. There were three questions on PU (Kumar et al., 2017), two questions on PEU (Kumar et al., 2017), three questions on PA (Kumar et al., 2017; Shareef et al., 2018), four questions on PCB (AlKailani, 2016), three questions on RGI (Kumar et al., 2017), and two questions on intention of use (Kumar et al., 2017) (Table A1 scale items). The items were scaled using the five-point Likert scale.

5 Data analysis

5.1 Measurement model

The research model was analysed using the partial least square (PLS) analysis technique (Ringle et al., 2015). Meanwhile, the validity and reliability were tested using an outer model test (Hair et al., 2017). The results of the two analysis are presented in Tables 1

and 2, respectively. Both analyses were proven to be valid (Fornell and Larcker, 1981; Hair et al., 2017).

Table 1 Convergent validity

<i>Construct</i>	<i>Items</i>	<i>Loading</i>	<i>AVE</i>	<i>Alpha</i>	<i>CR</i>
Perceived usefulness	PU 1	0.872	0.721	0.807	0.886
	PU 2	0.862			
	PU 3	0.812			
Perceived ease of use	PEU 1	0.934	0.866	0.846	0.928
	PEU 2	0.927			
Perceived awareness	BA 1	0.783	0.664	0.747	0.856
	BA 2	0.845			
	BA 3	0.815			
Perceived bank credibility	PBC 1	0.841	0.608	0.786	0.861
	PBC 2	0.738			
	PBC 3	0.815			
	PBC 4	0.717			
Reference group influence	RGI 1	0.842	0.688	0.773	0.868
	RGI 2	0.856			
	RGI 3	0.788			
Intention to use	ITU 1	0.888	0.754	0.675	0.860
	ITU 2	0.848			

Notes: AVE = variance accounted for and CR = composite reliability.

Table 2 Discriminant validity-the square root of the AVE

	<i>ITU</i>	<i>BA</i>	<i>PBC</i>	<i>PEU</i>	<i>PU</i>	<i>RGI</i>
ITU	0.868					
BA	0.598	0.815				
PBC	0.584	0.587	0.780			
PEU	0.430	0.580	0.602	0.931		
PU	0.590	0.581	0.606	0.650	0.849	
RGI	0.640	0.596	0.649	0.618	0.644	0.829

5.2 Structural model

The results of the analysis demonstrated that the coefficient of determination (R^2) for intention of use (0.535) was substantial, as indicated by Cohen (1988). Moreover, the results of the bootstrapping and the path coefficient of hypothesised relationships are presented in Table 3.

All in all, the results supported the hypotheses.

Table 3 Path coefficient of hypotheses

<i>H</i>	<i>Relationship</i>	<i>Std. beta</i>	<i>SE</i>	<i>t-value</i>	<i>Decision</i>	<i>P-value</i>
H1	PU → ITU	0.235	0.102	2.319	S*	0.011
H2	PEU → ITU	−0.195	0.096	2.033	S*	0.022
H3	PA → ITU	0.269	0.095	2.830	S***	0.003
H4	PBC → ITU	0.189	0.103	1.848	S*	0.034
H5	RGI → ITU	0.326	0.111	2.937	S***	0.002

Notes: t -values $> 1.65^*$ ($p < 0.10$), t -values $> 2.58^{***}$ ($p < 0.01$), SE = standard error and S = supported.

6 Discussion

The results of this study had successfully supported the hypothesised relationships. Briefly, PU, PEU, PA, PCB and RGI seemed to be of vital constructs ($R^2 = 0.535$). Firstly, the variable of PU and PEU demonstrated a positive impact on the intentions of use, and this is in agreement with previous studies such as Kumar et al.'s (2017). Secondly, as demonstrated by Rehman et al. (2012), awareness affects one's motivation in using e-government services, and this was replicated by the positive relationship between PA and intention of e-banking usage in this study. Thirdly, PCB was also shown to have a positive influence, as mentioned in past studies (e.g., Amin et al., 2012). Meanwhile, RGI was shown to affect internet banking usage. This is in agreement with Kumar et al. (2017), who stated that perceived social influence did impact behavioural intention on e-banking services. All in all, the outcomes were in line with prior studies.

This study has some implications. From a practical viewpoint, the results show that the implementation of these features like easy to use and PU have a direct influence on the intention of use e-banking services. Additional, the outcomes confirm consumers' requirement of a PA and PCB procedure and link this to intended use. Most significantly, this study could benefit management of banks in their future plans to adopt e-banking services technologies. Therefore, managers should have to start the efforts to achieve a good feeling for customers.

Following the observations, bank managers now have access to valuable information that can be utilised to improve the banks' services. In addition, this research added some value to the body of knowledge of internet banking services, particularly in the Arab context. It should also be noted that this study highlighted the relationship elements that can be used by the banks to develop their marketing strategies. This should significantly improve the banks' competitiveness with other financial institutions. In brief, managers of Jordanian banks need to focus on promoting e-banking services also develop an effective marketing strategy for their e-banking services and they need to introduce extra convenience of use for customers.

Furthermore, from a theoretical perspective, the outcomes contribute to the existing literature in a number of ways. First, prior to the establishment of this research, the TAM has been extended (Davis et al., 1989). This research takes the model a step further by

assessing existing constructs and integrating new constructs; PU, PEU, PA, PCB, and RGI. Second, the paper makes a contribution to e-banking services literature by providing insights on the drivers of mobile banking services acceptance. The results hint that an easy use of mobile process and its benefits are the critical acceptance criteria. Third, the study offers a comprehensive review of the most popular models of ITU the technology.

Finally, this study offers an application with a sample of users from a Arab countries. The majority of articles published about this topic have been carried out with other cultures. We consider that confirming these models in other cultural situations is an essential contribution. Hopefully, this research has been able to bridge the gap in this body of literature.

7 Limitations and recommendations

This revision is not free of limitations. One of the limitations of this study was the small sample size. Future research should conduct the proposed research framework on a larger sample. Moreover, the current research results are based on the cross-sectional research method, with longitudinal research to better predicting attitude and behaviour, and hence facilitating comprehensive understanding of the relationships between variables. In addition, the variables used in this study were adopted from previous researches; this research lacks originality. Note that this study involved only a few antecedents in predicting the motivation to use mobile banking services. Following this, future studies should test other possible variables to expand this model. Further research is necessary to clarify this issue.

References

- Abbad, M.M. (2013) 'E-banking in Jordan', *Behaviour & Information Technology*, Vol. 32, No. 7, pp.681–694.
- AbuShanab, E. and Pearson, J. (2007) 'Internet banking in Jordan: the unified theory of acceptance and use of technology (UTAUT) perspective', *Journal of Systems and Information Technology*, Vol. 9, No. 1, pp.78–97.
- Ahmad, K., Ayyash, M.M. and Al-Qudah, O.M.A. (2018) 'The effect of culture values on consumer intention to use Arabic e-commerce websites in Jordan: an empirical investigation', *International Journal of Business Information Systems*, Vol. 29, No. 2, pp.155–182.
- Al Khasawneh, M.H. (2015) 'An empirical examination of consumer adoption of mobile banking (M-banking) in Jordan', *Journal of Internet Commerce*, Vol. 14, No. 3, pp.341–362.
- 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*, Vol. 37, No. 3, pp.99–110.
- Alalwan, A.A., Dwivedi, Y.K. and Williams, M.D. (2016) 'Customers' intention and adoption of telebanking in Jordan', *Information Systems Management*, Vol. 33, No. 2, pp.154–178.
- Alalwan, A.A., Rana, N.P., Dwivedi, Y.K., Lal, B. and Williams, M.D. (2015) 'Adoption of mobile banking in Jordan: exploring demographic differences on customers' perceptions', Paper presented at the *Conference on e-Business, e-Services and e-Society*.
- Aldajani, D.M. (2011) *A Critical Analysis of E-Commerce Use by Jordanian Travel Agents*, Leeds University Business Schoolm University of Leeds, October.
- AlKailani, M. (2016) 'Factors affecting the adoption of internet banking in Jordan: an extended TAM model', *Journal of Marketing Development and Competitiveness*, Vol. 10, No. 1, p.39.

- Alkhaldi, A.N. and Kharmah, Q.M. (2018) 'Customer's intention to adopt mobile banking services: the moderating influence of demographic factors', *International Journal of Innovation and Technology Management*, Vol. 17, No. 1, pp.1–26.
- Alkhawaldeh, A.M. and Eneizan, B.M. (2018) 'Factors influencing brand loyalty in durable goods market', *International Journal of Academic Research in Business and Social Sciences*, Vol. 8, No. 1, pp.326–339.
- Al-Qeisi, K.I. (2009) *Analyzing the Use of UTAUT Model in Explaining an Online Behaviour: Internet Banking Adoption*, PhD thesis, Brunel University Brunel Business School.
- Amin, H., Supinah, R., Aris, M.M. and Baba, R. (2012) 'Receptiveness of mobile banking by Malaysian local customers in Sabah: an empirical investigation', *Journal of Internet Banking and Commerce*, Vol. 17, No. 1, p.1.
- Asadi, S., Nilashi, M., Husin, A.R.C. and Yadegaridehkordi, E. (2017) 'Customers perspectives on adoption of cloud computing in banking sector', *Information Technology and Management*, Vol. 18, No. 4, pp.305–330.
- Awad, M.S. and Ghadi, M.Y. (2010) 'Investigating of factors influencing the intention to adopt mobile banking services in Jordan', *Dirasat: Administrative Sciences*, Vol. 37, No. 2, pp.545–556.
- Baabdullah, A.M., Alalwan, A.A., Rana, N.P., Patil, P. and Dwivedi, Y.K. (2019) 'An integrated model for m-banking adoption in Saudi Arabia', *International Journal of Bank Marketing*, Vol. 37, No. 2, pp.452–478.
- Chawla, D. and Joshi, H. (2017) 'Consumer perspectives about mobile banking adoption in India – a cluster analysis', *International Journal of Bank Marketing*, Vol. 35, No. 4, pp.616–636.
- Claro, D.P. and Rosa, R.B. (2016) 'Drivers leading firm adoption of internet banking services', *Marketing Intelligence & Planning*, Vol. 34, No. 3, pp.336–354.
- Cohen, J. (1988) *Statistical Power Analysis for the Behavioral Sciences*, Vol. 2, L. Lawrence Erlbaum Associates, Hillsdale, NJ.
- Dajani, D. and Yaseen, S.G. (2016) 'The applicability of technology acceptance models in the Arab business setting', *Journal of Business and Retail Management Research*, Vol. 10, No. 3, pp.46–56.
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989) 'User acceptance of computer technology: a comparison of two theoretical models', *Management Science*, Vol. 35, No. 8, pp.982–1003.
- Devi Juwaheer, T., Pudaruth, S. and Ramdin, P. (2012) 'Factors influencing the adoption of internet banking: a case study of commercial banks in Mauritius', *World Journal of Science, Technology and Sustainable Development*, Vol. 9, No. 3, pp.204–234.
- Durucu, M., Isik, M. and Calisir, F. (2019) 'What is more important to internet banking website users: usability or functionality?', *International Journal of Business Information Systems*, Vol. 30, No. 2, pp.232–251.
- Eisingerich, A.B. and Bell, S.J. (2006) 'Relationship marketing in the financial services industry: the importance of customer education, participation and problem management for customer loyalty', *Journal of Financial Services Marketing*, Vol. 10, No. 4, pp.86–97.
- El-Qireem, I.A. (2013) 'Critical factors influencing e-banking service adoption in Jordanian commercial banks: a proposed model', *International Business Research*, Vol. 6, No. 3, p.229.
- Fornell, C. and Larcker, D.F. (1981) 'Structural equation models with unobservable variables and measurement error: algebra and statistics', *Journal of Marketing Research*, Vol. 18, No. 3, pp.382–388.
- Gharaibeh, M. and Arshad, M.R.M. (2016) 'Current status of mobile banking services in Jordan', *World Applied Sciences Journal*, Vol. 34, No. 7, pp.931–935.
- Gharaibeh, M.K. and Arshad, M.R.M. (2018) 'Determinants of intention to use mobile banking in the North of Jordan: extending UTAUT2 with mass media and trust', *Journal of Engineering and Applied Sciences*, Vol. 13, No. 8, pp.2023–2033.

- Gordon, T.L.O., Pires, G.D. and Stanton, J. (2008) 'The relationship marketing orientation of Hong Kong financial services industry managers and its links to business performance', *Journal of Financial Services Marketing*, Vol. 13, No. 3, pp.193–203.
- Hair Jr., J., Sarstedt, M., Hopkins, L. and Kuppelwieser, V.G. (2014) 'Partial least squares structural equation modeling (PLS-SEM) an emerging tool in business research', *European Business Review*, Vol. 26, No. 2, pp.106–121.
- Hair, J., Hollingsworth, C.L., Randolph, A.B. and Chong, A.Y.L. (2017) 'An updated and expanded assessment of PLS-SEM in information systems research', *Industrial Management & Data Systems*, Vol. 117, No. 3, pp.442–458.
- Hu, Z., Ding, S., Li, S., Chen, L. and Yang, S. (2019) 'Adoption intention of Fintech services for bank users: an empirical examination with an extended technology acceptance model', *Symmetry*, Vol. 11, No. 3, p.340.
- Islam, M.S., Karia, N., Khaleel, M., Fauzi, F.B.A., Soliman, M.S.M., Khalid, J. and Mamun, M.A.A. (2019) 'Intention to adopt mobile banking in Bangladesh: an empirical study of emerging economy', *International Journal of Business Information Systems*, Vol. 31, No. 1, pp.136–151.
- Kaabachi, S., Ben Mrad, S. and Petrescu, M. (2017) 'Consumer initial trust toward internet-only banks in France', *International Journal of Bank Marketing*, Vol. 35, No. 6, pp.903–924.
- Karthikeyan, P. (2016) 'Technology adoption and customer satisfaction in banking technological services', *Journal of Internet Banking and Commerce*, Vol. 21, No. 3, p.1.
- Keramati, A., Apornak, A., Abedi, H., Otrodi, F. and Roudneshin, M. (2018) 'The effect of service recovery on customers' satisfaction in e-banking: an empirical investigation', *International Journal of Business Information Systems*, Vol. 29, No. 4, pp.459–484.
- Kumar, V.R., Lall, A. and Mane, T. (2017) 'Extending the TAM model: intention of management students to use mobile banking: evidence from India', *Global Business Review*, Vol. 18, No. 1, pp.238–249.
- Laukkanen, T., Sinkkonen, S., Kivijärvi, M. and Laukkanen, P. (2007) 'Innovation resistance among mature consumers', *The Journal of Consumer Marketing*, Vol. 24, No. 7, pp.419–427.
- Mansour, I.H.F., Eljelly, A.M. and Abdullah, A.M. (2016) 'Consumers' attitude towards e-banking services in Islamic banks: the case of Sudan', *Review of International Business and Strategy*, Vol. 26, No. 2, pp.244–260.
- Migdadi, Y.K.A. (2012) 'The developing economies' banks branches operational strategy in the era of e-banking: the case of Jordan', *Journal of Emerging Technologies in Web Intelligence*, Vol. 4, No. 2, pp.189–197.
- Mohamed, W.N.W., Shaari, A.J., Ismail, Z. and Yusoff, M.S.A. (2018) 'Instructors' behavioral intention towards mobile technology device acceptance', *Advanced Science Letters*, Vol. 24, No. 4, pp.2532–2535.
- Moodley, T. and Govender, I. (2016) 'Factors influencing academic use of internet banking services: an empirical study', *African Journal of Science, Technology, Innovation and Development*, Vol. 8, No. 1, pp.43–51.
- Nasri, W. and Charfeddine, L. (2012) 'Factors affecting the adoption of internet banking in Tunisia: an integration theory of acceptance model and theory of planned behavior', *The Journal of High Technology Management Research*, Vol. 23, No. 1, pp.1–14.
- Ong, C.H., Salleh, S.M. and Yusoff, R.Z. (2015) 'Bridging the gap between brand experience and customer loyalty: the mediating role of emotional-based trust', *International Academic Research Journal of Business and Technology*, Vol. 1, No. 2, pp.58–70.
- Pandey, P., Mayya, S. and Joshi, H. (2017) 'Internet banking: a survey on new approach to banking and its adoption among urban conglomerates of Coastal Karnataka', *Advanced Science Letters*, Vol. 23, No. 3, pp.1960–1963.
- 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*, Vol. 36, No. 1, pp.147–169.

- Punyatoya, P., Satpathy, A. and Agrawal, A. (2018) 'Factors driving consumer loyalty intention towards e-tailers: an integrated model', *International Journal of Business Information Systems*, Vol. 27, No. 4, pp.466–492.
- Rawashdeh, A. (2015) 'Factors affecting adoption of internet banking in Jordan: chartered accountant's perspective', *International Journal of Bank Marketing*, Vol. 33, No. 4, pp.510–529.
- Rehman, M., Esichaikul, V. and Kamal, M. (2012) 'Factors influencing e-government adoption in Pakistan', *Transforming Government: People, Process and Policy*, Vol. 6, No. 3, pp.258–282.
- Ringle, C.M., Wende, S. and Becker, J-M. (2015) *SmartPLS 3*, SmartPLS, GmbH, Boenningstedt.
- Roy, S.K., Balaji, M., Kesharwani, A. and Sekhon, H. (2017) 'Predicting internet banking adoption in India: a perceived risk perspective', *Journal of Strategic Marketing*, Vol. 25, Nos. 5–6, pp.418–438.
- Sekaran, U. (2003) *Research Methods for Business: A Skill Building Approach*, 4th ed., John Wiley and Sons, New York.
- 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*, 1 July, Vol. 43, pp.54–67.
- Sikdar, P., Kumar, A. and Makkad, M. (2015) 'Online banking adoption: a factor validation and satisfaction causation study in the context of Indian banking customers', *International Journal of Bank Marketing*, Vol. 33, No. 6, pp.760–785.
- Yaseen, S.G. and Al Omoush, K.S. (2013) 'Investigating the engage in electronic societies via Facebook in the Arab World', *International Journal of Technology and Human Interaction*, Vol. 9, No. 2, pp.20–38.
- Yiu, C.S., Grant, K. and Edgar, D. (2007) 'Factors affecting the adoption of internet banking in Hong Kong – implications for the banking sector', *International Journal of Information Management*, Vol. 27, No. 5, pp.336–351.
- Zandhessami, H. and Geranmayeh, P. (2014) 'Determinants of user acceptance of internet banking: an empirical study', *Management Science Letters*, Vol. 4, No. 7, pp.1369–1374.

Appendix

Table A1 Scale items

<i>Perceived usefulness (Kumar et al., 2017)</i>
Mobile banking would save my travelling expenses to the bank.
Mobile banking would be useful as it would save my time.
Mobile banking would be useful because of its convenience to use anywhere.
<i>Perceived ease of use (Kumar et al., 2017)</i>
Learning to use mobile banking would be easy for me.
Mobile banking would provide me with easy user interface.
<i>Perceived awareness (Shareef et al., 2018)</i>
I am aware of mobile banking service channel.
I know the benefits of using mobile banking service channel.
I have gone through educational/training programs about the overall features of mobile banking service channel.

Table A1 Scale items (continued)

<i>Perceived bank credibility (AlKailani, 2016)</i>
The bank I deal with always keeps its promises.
I have a close friendly relationship with my bank personnel
My bank seldom make mistakes regarding my bank transactions
My bank always provides me with all the help I need. Definitely, I will recommend it to my friends.
<i>Reference group influence (Kumar et al., 2017)</i>
I would show my social group that I use mobile banking.
I would use mobile banking if my social group uses it.
I would discuss the features of mobile banking with my social group.
<i>Intention to use (Kumar et al., 2017)</i>
I intend to use mobile banking.
I predict that I shall use mobile banking.