

## DETERMINANTS OF M-COMMERCE USAGE IN JORDANIAN HOSPITALITY INDUSTRY

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### ABSTRACT

This research explores the crucial usage determinants of mobile commerce in Jordan's tourism and hospitality industry. A thorough analysis of the related literature helps to develop a conceptual framework for better understanding the use of m-commerce in the hospitality sector. On the data obtained from 168 Jordanian hospitality SMEs. Smart-PLS as an approach of structural equation modeling was used to validate research framework. The research demonstrated that the critical determinants of m-commerce usage are perceived ease to use, perceived usefulness, system quality, and service quality. This research helps to better understand m-commerce use in developing countries, particularly in Jordan. Through offering evidence-based approaches and policies it will encourage the growing of m-commerce in the hospitality field.

**Keywords:** *M-commerce, Determinants Factors, Hospitality, SMEs, Jordan*

### 1. INTRODUCTION

The world has made tremendous strides in the area of telecommunications and networking over the last two decades; this has released new world of potentials for omnipresent solutions to improve various domains of our daily works. The commercial business domain has been a thriving environment for such solutions. As Electronic Commerce (E-commerce) trends developed over the years, businesses became progressively involved in providing related facilities through mobile devices in an effort to meet a broader customer base [1-3].

Mobile Commerce (M-commerce) deals with buying and selling services and goods through wireless devices [4-7]. It provides numerous benefits for businesses. For example, M-commerce helps enterprises reach clients everywhere and every time. It effectively delivers appropriate facilities to customers [8, 9]. M-commerce adoption allows companies to sell openly to customers, thus

dramatically reducing operational costs. As a result of this, m-commerce is becoming increasingly popular. Such advantages led to its widespread use [1, 10].

In hospitality sector, Small and Medium-Sized Enterprises (SMEs) play a big part in the economy [11, 12]. Hospitality SMEs success is closely linked to the individual nations' economic growth [13]. It shows that m-commerce usage in hospitality SMEs is crucial to commercial growing of the individual nations. In particular, SMEs in the Jordanian hospitality sector have been chosen because of the large number of companies and their specific problems in the sector such as fluctuating seasonal demands. SMEs are accounting for 10% of Jordanian GDP [14].

While several researches have been carried out on the e-commerce usage behavior of SMEs [15-17], our knowledge of the usage of m-commerce behavior is still limited because of its evolving nature. Nevertheless, in developing countries, there

is an absence of empirical researches focused on m-commerce use and acceptance. More importantly, the development of the Middle East is still in its beginning comparing with the Western countries [18].

This study shows that there is a lack of awareness in the literature about the factors that influence the use of M-commerce. Therefore, this study aims to establish and empirically analyze a research model of M-commerce usage from the perspective of hospitality industry, in addition to exploring driving factors for use M-commerce. Therefore, the main research question that this study will answer it, what are the key determinants that influence the use of M-commerce among hospitality industry in Jordan?.

In details, this study attends to explore the factors that could enable the use of m-commerce in the Jordanian hospitality domain. The results of this research will be useful in developing the right organizational strategies for local m-commerce businesses, especially marketing operations and the development of mobile applications that will attract the attention of many users.

The rest of the paper is organized as follows: literature review is addressed in section two. The proposed conceptual structure is set out in section three. Section four sets out the research approach that has driven our study. Results are presented in Section five. Finally, Section six offers a thorough review of the key findings and concludes the study.

## 2. LITERATURE REVIEW

Understanding of the m-commerce usage in SMEs has drawn significant interest in current literature [19]. A detailed analysis of the usage m-commerce studies by SMEs illustrations that these studies can be classified into m-commerce usage conceptualization and empirical confirmation of such conceptualization.

The conceptualization of the m-commerce usage emphases regards the development and proposed frameworks for understanding of the m-commerce usage in SMEs. For instance, [19] develop a framework of technological, organizational, and environmental for investigating the adoption of m-commerce in Vietnamese SMEs. [20] develop the conceptual model of technology readiness, perceived ubiquity, privacy concerns, perceived usefulness, and perceived ease of use.

M-commerce usage empirical validation focuses on examining and testing models for the m-

commerce usage in SMEs. Such researches use numerous theories like the UTAUT [21-23], technology acceptance model (TAM) [8, 24-26], information success model [27, 28], planned behavior theory (TPB) [29], and theory of diffusion innovation [30] for investigating m-commerce usage. Using those theories offers different viewpoints for understanding m-commerce usage in SMEs.

Adapting TAM theory assumes that perceived usefulness and perceived ease of use influence the intention of SMEs to adopt m-commerce [8, 24-26]. This theory was widely used to investigate the m-commerce usage in SMEs. [8] proposed and applied an extended TAM and found that the website system quality, service quality, and information quality, perceived usefulness, and perceived ease of use are main critical factors for m-commerce usage in SMEs. [30] integrated TAM and innovation diffusion theory, the researchers found that perceived risk, cost involved, compatibility, perceived ease of use, perceived usefulness, behavioral intention to use, and the actual usage are critical for m-commerce usage in SMEs. [31] used information system success model and found that system quality, information quality, service quality, user satisfaction, intention to use, and net benefit are critical for m-commerce success in SMEs.

The integrating several theories are commonly used to explore the M-commerce usage in SMEs. For instance, [32] integrated TAM and task-technology fit (TTF), the researchers found that the attitude towards use, perceived ease of use, perceived usefulness, tool experience, task technology fit, tool functionality, and task requirements are main determinants of the behavioral intent of m-commerce. [19] integrated DOI with TOE model and found that there are main determinates for m-commerce namely; perceived compatibility, perceived benefits, perceived security, employees' IT knowledge, perceived cost, organizational innovativeness, organizational readiness, competitive pressures, government, and support customer pressures.

The discussion above shows that numerous frameworks for investigating the use of m-commerce in SMEs have been suggested and tested through prior study. However, the findings of these studies can not be fully extended to understand the use of m-commerce by SMEs in developing nations. This is because of (i) gap in the empirical researches for the general results, (ii) Failure to take into account the unique characteristics of SMEs when introducing m-commerce, and (iii) Lack of

empirical evidence for the use of m-commerce in SMEs in developing nations. Therefore, it is becoming crucial to develop a framework to examine m-commerce usage at SMEs in developing nations.

### 3. RESEARCH FRAMEWORK AND HYPOTHESES

There are numerous theories for examining technology usage in SMEs, including TAM, DOI, IS success model, TPB, TTF and TOE [8, 23, 27, 31-33]. An analysis of the above existing researches, it found that TAM and information success model are the main theories for examining usage of m-commerce by organizations.

The conceptual framework and research hypotheses are illustrated in figure 1, for exploring usage of m-commerce in Jordanian hospitality SMEs. The intention to adopt m-commerce, m-commerce usage, perceived ease to use, and perceived usefulness are derived from TAM model. Also, the quality of system, and service quality are derived from IS success model.

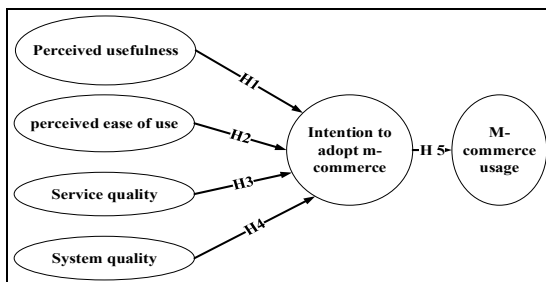


Figure 1: The Research conceptual framework

#### 3.1 Perceived usefulness

Perceived usefulness can be defined as the operational and strategic benefits that the organization will gain from m-commerce or the systems and this relates to efficiency, efficient reduction in operating costs, ease of installation and maintenance [34]. The previous studies showed that the perceived usefulness has significant impact on intention to adopt [34-36]. Therefore, the following hypothesis is proposed;

H1: Perceived usefulness has a positive effect on intention to adopt m-commerce.

#### 3.2 Perceived ease of use

Perceived ease of use tests the degree to which an user assumes that the use of a device is effortless [37]. The previous researches argued that the perceived ease of use has significant impact on intention to adopt [8, 32, 37]. Therefore, the following hypothesis is proposed;

H2: Perceived ease of use has a positive effect on intention to adopt m-commerce.

#### 3.3 Service quality

The technology's level of service quality to end-users has significantly impacted an organization's use of online services [38]. The previous researches explored the relationships between service quality and intention to adopt mobile services [28, 38]. They found that the quality of services that provided by apps will help the organizations to attracts the clients. Therefore, the following hypothesis is proposed;

H3: Service quality has a positive effect on intention to adopt m-commerce.

#### 3.4 System quality

Quality of the System refers to the technical issues related to the Information System (IS) interface and system quality that generates information output [39]. The previous researches investigated the relationships between system quality and intention to adopt the online systems [39, 40]. They found that the quality of system is the strongest predictor for adoption m-commerce. Thus, system quality will help the employees in organizations to doing its job easily and attract the clients. Therefore, the following hypothesis is proposed;

H3: System quality has a positive effect on intention to adopt m-commerce.

#### 3.5 Intention to adopt m-commerce

The intention, which is the principal dependent variable found in the TAM-based studies, is defined as the likelihood of a person using an IS. Intention plays a crucial role in the real utilization of new technologies [41]. Even intention to adopt can be viewed as an attitude. Prior researchers found that intention to adopt new technologies play an important role in actual use [10, 19, 21, 26, 41, 42]. Therefore, the following hypothesis is proposed;

H4: Intention to adopt m-commerce has a positive effect on m-commerce usage.

#### 4. METHOD

This research used structured questionnaire containing 28 items to obtain data from Jordanian hospitality SMEs from May -July 2020.

Prior to the administration of survey the author forwarded it to 10 managers working in different Jordanian hospitality SMEs and 3 professors from Management Information System (MIS) domain in government universities to identify problems in terms of terminology, meaning and ambiguity. Their comments were used to make minor adjustments to the survey, which resulted in the final survey being distributed to 250 managers of Jordanian hospitality SMEs. After collection, the questionnaires were carefully reviewed and the invalid ones discarded.

A total of 240 questionnaires were retrieved, from which 40 lacked answers in terms of m-commerce usage, 32 had missing values in many sections and thus, 72 surveys were dropped, making the total useable questionnaires to be 168.

To measure each variable this study uses multiple items. The items in the questionnaire are set out in table 1. A Likert-type scale of five points is adopted where the value '1' denotes 'strongly disagree' and the value '5' denotes 'strongly agree.' This study employed Partial Least Squares (PLS) as the one of Structural Equation Modeling (SEM) technique. According to [43] PLS is the most suitable approaches to be used for empirical research's. The research analysis follows the two steps established by [43], which includes the measurement model and structural model assessments.

*Table 1: Research Measurements*

Construct	Items	Adapted from
Perceived usefulness	Use of m-commerce improves sound decision making.	[8, 18, 32, 36]
	M-commerce facilitates our accomplishment of tasks expeditiously.	
	Using m-commerce improves our efficiency at work.	
Perceived ease to use	I have clear and understandable M-commerce interactions.	[8, 18, 32]
	Interaction with m-commerce doesn't require a lot of mental effort.	
	An easy to use m-commerce system.	

	To accomplish tasks m-commerce is easy to operate.	
Service Quality	M-commerce delivers first class and optimum services.	[31, 44]
	M-commerce has excellent facilities to provide service.	
	M-commerce serves conveniently.	
	M-commerce provides a sturdy security system.	
System quality	Operation on m-commerce is reliable.	[31, 44]
	Response time on m-commerce is acceptable.	
	M-commerce is adaptable to the different needs of the company.	
	M-commerce makes the information easy to access.	
Intention to adopt m-commerce	In my job performance I try to embrace m-commerce as much as possible.	[45, 46]
	Overall, the use of m-commerce service is a positive aspect to me.	
	I think, overall, that m-commerce service should be used to deliver services.	
	I'd use m-commerce in my job as much as possible.	
m-commerce usage	Our company will use m-commerce to integrate business processes.	[45, 46] [47, 48]
	Our company will use m-commerce to provide optimum use of organizational data resource.	
	I will use m-commerce on a day to day basis.	

#### 5. RESULT

##### 5.1 Measurement Model Evaluation

This study follows the previous studies regarding model assessment [43], the current one conducted an Assessment of the measurement model's reliability and validity prior to analysis of structural relations. The reflective measurements satisfy the defined conditions of quality [43, 49, 50], with outer loadings (> 0.7), Reliability (cronbach's alpha) (> 0.5), AVE (>0.5), and CR (> 0.7), all of which correspond to the defined threshold values for reliability assessments (see table 2).

Regarding the discriminating validity, it was established by [51, 52] using two standards, namely

the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio (HTMT). The AVE square root of each LV was obtained in the first standard, and was found to be larger than the correlation with other LVs [43]. It is clear from Table 3 that discriminating validity was confirmed based on this standard. Also, based on second standard, [51, 52] argued that the value of HTMT ratio should be 0.85 or 0.9 or less. Based on Table 3, the total HTMT values for LVs were all lower than 0.85, Proving the tolerability of discriminating construct validity [51, 52].

Table 2: Assessment Of Measurement

Construct	Items	Loadings	$\alpha$	CR	AVE
Perceived Usefulness	PEUF-1	0.809	0.706	0.836	0.629
	PEUF-2	0.739			
	PEUF-3	0.830			
Perceived Ease to Use	PEEU-1	0.849	0.843	0.894	0.679
	PEEU-2	0.817			
	PEEU-3	0.805			
	PEEU-4	0.826			
Service Quality	SEQ-1	0.888	0.916	0.941	0.798
	SEQ-2	0.905			
	SEQ-3	0.873			
	SEQ-4	0.908			
System Quality	SYQ-1	0.748	0.755	0.845	0.577
	SYQ-2	0.736			
	SYQ-3	0.747			
	SYQ-4	0.805			
Intention to Adopt M-Commerce	IAMC-1	0.725	0.835	0.891	0.672
	IAMC-2	0.881			
	IAMC-3	0.804			
	IAMC-4	0.860			
M-commerce Usage	MCU-1	0.725	0.882	0.927	0.810
	MCU-2	0.881			
	MCU-3	0.804			

Table 3: Discriminant Validity Based On Fornell-Larcker And HTMT Standards

Fornell-Larcker standard						
	IAM C	PEE U	PEU F	SEQ	SYQ	MC U
IAM C	0.820					
PEEU	0.691	0.824				
PEUF	0.602	0.431	0.793			
SEQ	0.680	0.557	0.446	0.893		
SYQ	0.659	0.687	0.545	0.628	0.760	
MCU	0.539	0.505	0.369	0.518	0.542	0.900
HTMT standard						
	IAM	PEE	PEU	SEQ	SYQ	MC

	C	U	F			U
IAM C	-					
PEEU	0.822	-				
PEUF	0.776	0.558	-			
SEQ	0.777	0.632	0.557	-		
SYQ	0.757	0.762	0.744	0.756	-	
MCU	0.625	0.585	0.467	0.575	0.665	-

Note: IAMC = Intention to adopt m-commerce, SEQ = Service Quality, SYQ = System quality, PEUF= Perceived usefulness, PEEU = Perceived ease to use, MCU = Mobile commerce usage.

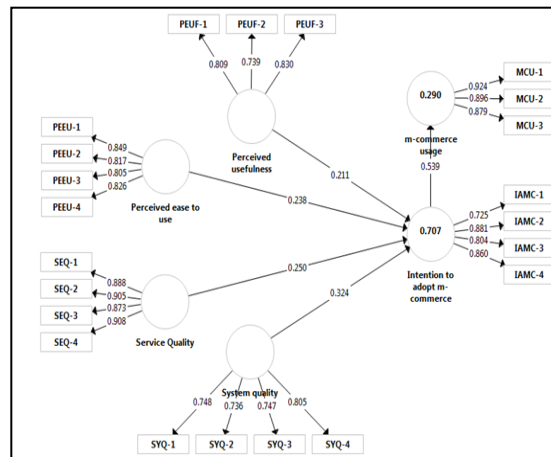


Figure 2: Evaluation Of The Measurement And Structural Models

## 5.2 Structural Model Evaluation

Evaluation of the structural model is the second stage of PLS-SEM, and this is achieved according to the measuring model specification. Assessing the model of the structural path includes evaluating its predictive validity, the coefficients of the path and their statistical significance. This study followed guidelines laid down by [43, 50] when evaluating the structural model and reporting results.

The determination coefficient (value of  $R^2$ ) was obtained for predictive accuracy and effect size ( $f^2$ ) for predictive relevance of the structural model. For m-commerce usage, the  $R^2$  value is 0.29 (see Figure 2), indicating that exogenous construct (intention to adopt m-commerce) has managed to explain 29% of the variance in m-commerce usage. Similarly, intention to adopt m-commerce had an  $R^2$  value of 0.707, which means system quality, service quality, perceived ease to use, and perceived usefulness in combination explained 70 % of the intention to adopt m-commerce. For the  $f^2$  value, based on [53]

study,  $f^2$  values less than 0.15 are weak, 0.15 are reasonable and 0.35 are robust. Therefore, for this research the  $f^2$  value was 0.40.

The bootstrapping procedure, using 5000 re-samples, was used to produce t-values and p-values to evaluate the structural model for the path coefficients and their statistical significance as recommended by [53].

Perceived usefulness, based on the values obtained, has a significantly relationship with intention to adopt m-commerce, supporting H1 ( $\beta = 0.211$ ,  $T = 4.280$ ,  $p = 0.000$ ), as well as perceived ease to use has influence and significant impact on intention to adopt m-commerce, which supported H2 ( $\beta = 0.238$ ,  $T = 3.711$ ,  $p = 0.000$ ). Moving to H3, service quality was found to significantly impact intention to adopt m-commerce ( $\beta = 0.250$ ,  $T = 4.666$ ,  $p = 0.000$ ), supporting H3. Also, system quality was found to significantly impact intention to adopt m-commerce ( $\beta = 0.324$ ,  $T = 4.913$ ,  $p = 0.000$ ), supporting H4. Finally, H5 was supported as found that intention to adopt m-commerce has significant impact on m-commerce usage ( $\beta = 0.539$ ,  $T = 8.907$ ,  $p = 0.000$ ).

Table 4: Results Of Hypothesis Testing

Relationship	$\beta$	T	P	Decision
PEUF -> IAMC	0.211	4.280	0.000	Supported
PEEU -> IAMC	0.238	3.711	0.000	Supported
SRQ -> IAMC	0.250	4.666	0.000	Supported
SYQ -> IAMC	0.324	4.913	0.000	Supported
IAMC -> MCU	0.539	8.907	0.000	Supported

The research findings are supported by previous researches. For instance, this research found that the perceived usefulness has a significant impact on intention to adopt m-commerce, which is consistent with the previous studies [8], [54], and [42]. Similarly, perceived ease of use found to be critical factor of m-commerce adoption. Thus, this result is supported by [24], and [26].

This study also found that the quality of the system and the quality of service are among the most important factors for adopting mobile commerce, because it has a positive effect on the adoption of mobile commerce in the hospitality sector, and the results of this study are consistent with previous studies [28]. In the same way; this research found that the m-commerce adoption is a positive impact on m-commerce usage which is similar to that found in [41], and [55].

## 6. CONCLUSION

A comprehensive model was proposed that integrated the TAM and information system success model to determine the factors and level at which each of the variables affected the m-commerce adoption among Jordanian hospitality SMEs and the effects of the factors on m-commerce use. This study review of literature and applied the survey questionnaires. Based on the findings of the study, the proposed hypotheses have been validated, with the highest influence stemming from the intention to adopt Jordanian hospitality SMEs for m-commerce usage. This study concludes that the perceived usefulness, perceived ease to use, system quality and service quality are the main determinates factors for adoption and use of m-commerce in Jordanian hospitality SMEs.

The findings contribute to theory through the proposed comprehensive model that integrated TAM and information system success models. The TAM framework has generally been used in studies dedicated to technology adoption but rare studies have attempted to integrate it with the information system success model, particularly in hospitality SMEs. Another contribution is the two-pronged approach adopted, which involves a comprehensive review of the literature and the administration of the survey.

Several studies have undertaken similar examinations using individual models of the TAM and information system success models, but none of them combined and tested in developing countries on a separate technology, taking into account differences in context and culture. This effort has been made to understand the use of m-commerce technology from a local perspective.

Proceeding to the practical contributions, this study provided solid empirical research of determinates factors of m-commerce usage and the degree to which they influence m-commerce usage in Jordanian hospitality SMEs. This results has consequences for m-commerce developers, suppliers and policy makers. From a technological perspective, m-commerce suppliers should take into account the importance of system and service quality and make sure that products are well-functioning and compatible with other products of the organization.

Similar with other researches, this study has drawbacks and limitations that potential researchers should overcome. Firstly; being a locally focused sample that does not reflect the global m-commerce

usage of hospitality SMEs. Secondly; the number of factors included in this research, future studies could include more factors from different perspectives to perform a thorough review of the m-commerce usage.

#### REFERENCES:

- [1] Verkijika, S.F., *Factors influencing the adoption of mobile commerce applications in Cameroon*. Telematics and Informatics, 2018. **35**(6): p. 1665-1674.
- [2] Sarkar, S., S. Chauhan, and A. Khare, *A meta-analysis of antecedents and consequences of trust in mobile commerce*. International Journal of Information Management, 2020. **50**: p. 286-301.
- [3] Chopdar, P.K. and J. Balakrishnan, *Consumers response towards mobile commerce applications: S-O-R approach*. International Journal of Information Management, 2020. **53**: p. 102106.
- [4] Liébana-Cabanillas, F., V. Marinković, and Z. Kalinić, *A SEM-neural network approach for predicting antecedents of m-commerce acceptance*. International Journal of Information Management, 2017. **37**(2): p. 14-24.
- [5] Rana, N.P., et al., *Exploring barriers of m-commerce adoption in SMEs in the UK: Developing a framework using ISM*. International Journal of Information Management, 2019. **44**: p. 141-153.
- [6] Blaise, R., M. Halloran, and M. Muchnick, *Mobile Commerce Competitive Advantage: A Quantitative Study of Variables that Predict M-Commerce Purchase Intentions*. Journal of Internet Commerce, 2018. **17**(2): p. 96-114.
- [7] Chhonker Mayanka, S., et al., *m-commerce technology adoption: Thematic and citation analysis of scholarly research during (2008-2017)*. The Bottom Line, 2018. **31**(3/4): p. 208-233.
- [8] Chi, T., *Understanding Chinese consumer adoption of apparel mobile commerce: An extended TAM approach*. Journal of Retailing and Consumer Services, 2018. **44**: p. 274-284.
- [9] Cui, Y., et al., *Understanding consumer intentions toward cross-border m-commerce usage: A psychological distance and commitment-trust perspective*. Electronic Commerce Research and Applications, 2020. **39**: p. 100920.
- [10] Sun, J. and T. Chi, *Investigating the adoption of apparel m-commerce in the US market*. International Journal of Clothing Science and Technology, 2019. **31**(4): p. 544-563.
- [11] Tibay, V., et al., *Business resilience: A study of Auckland hospitality sector*. Procedia Engineering, 2018. **212**: p. 1217-1224.
- [12] Khalique, M., et al., *Intellectual capital in tourism SMEs in Azad Jammu and Kashmir, Pakistan*. Journal of Intellectual Capital, 2020. **21**(3): p. 333-355.
- [13] Peters, M., A. Kallmuenzer, and D. Buhalis, *Hospitality entrepreneurs managing quality of life and business growth*. Current Issues in Tourism, 2019. **22**(16): p. 2014-2033.
- [14] JEGP, *TECHNICAL GUIDE FOR PRE-SELECTION OF PUBLIC INVESTMENT PROJECTS*. 2018. **2018**: p. 2022.
- [15] Awiagah, R., J. Kang, and J.I. Lim, *Factors affecting e-commerce adoption among SMEs in Ghana*. Information Development, 2015. **32**(4): p. 815-836.
- [16] Kabanda, S. and I. Brown, *A structuration analysis of Small and Medium Enterprise (SME) adoption of E-Commerce: The case of Tanzania*. Telematics and Informatics, 2017. **34**(4): p. 118-132.
- [17] Alrousan, M.K. and E. Jones, *A conceptual model of factors affecting e-commerce adoption by SME owner/managers in Jordan*. International Journal of Business Information Systems, 2016. **21**(3): p. 269-308.
- [18] Alqatan, S., et al., *An empirical study on factors affecting the acceptance of M-commerce application among small and medium-sized tourism enterprises by integrating TTF with TAM*. International Journal of Business Information Systems, 2019. **31**(1): p. 106-135.
- [19] Chau, N.T., H. Deng, and R. Tay, *Critical determinants for mobile commerce adoption in Vietnamese small and medium-sized enterprises*. Journal of Marketing Management, 2020. **36**(5-6): p. 456-487.
- [20] Roy, S. and Y.L.R. Moorthi, *Technology readiness, perceived ubiquity and M-commerce adoption: The moderating role of privacy*. Journal of Research in Interactive Marketing, 2017. **11**(3): p. 268-295.
- [21] Tarhini, A., et al., *An analysis of the factors affecting mobile commerce adoption in developing countries: Towards an integrated model*. Review of International Business and Strategy, 2019. **29**(3): p. 157-179.
- [22] Chopdar, P.K., et al., *Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of*

- Acceptance and Use of Technology*. Computers in Human Behavior, 2018. **86**: p. 109-128.
- [23] Abrahão, R.d.S., S.N. Moriguchi, and D.F. Andrade, *Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT)*. RAI Revista de Administração e Inovação, 2016. **13**(3): p. 221-230.
- [24] Pipitwanichakarn, T. and N. Wongtada, *Leveraging the technology acceptance model for mobile commerce adoption under distinct stages of adoption*. Asia Pacific Journal of Marketing Logistics, 2019.
- [25] Shukla, A. and S.K. Sharma, *Evaluating Consumers' Adoption of Mobile Technology for Grocery Shopping: An Application of Technology Acceptance Model*. Vision, 2018. **22**(2): p. 185-198.
- [26] Fan, C.-w. *Applied the Technology Acceptance Model to Survey the Mobile-Learning Adoption Behavior in Science Museum*. 2020. Cham: Springer International Publishing.
- [27] Chen, L.Y., *Determinants of m-shopping quality on customer satisfaction and purchase intentions: the IS success model perspective*. World Review of Entrepreneurship, Management and Sustainable Development, 2013. **9**(4): p. 543-558.
- [28] Wang, C. and T.S.H. Teo, *Online service quality and perceived value in mobile government success: An empirical study of mobile police in China*. International Journal of Information Management, 2020. **52**: p. 102076.
- [29] Khoi Nguyen, H., H. Tuu Ho, and O. Olsen Svein, *The role of perceived values in explaining Vietnamese consumers' attitude and intention to adopt mobile commerce*. Asia Pacific Journal of Marketing and Logistics, 2018. **30**(4): p. 1112-1134.
- [30] Sujatha, R. and J. Sekkizhar, *Determinants of M-Commerce Adoption in India Using Technology Acceptance Model Infused with Innovation Diffusion Theory*. Journal of Management Research, 2019. **19**(3): p. 193-204.
- [31] Bahaddad, A.A., *Evaluating M-commerce systems success: Measurement and validation of the DeLone and McLean model of IS success in Arabic society (GCC Case Study)*. Journal of Business Theory Practice, 2017. **5**(3): p. 156.
- [32] Shih, Y.-Y. and C.-Y. Chen, *The study of behavioral intention for mobile commerce: via integrated model of TAM and TTF*. Quality & Quantity, 2013. **47**(2): p. 1009-1020.
- [33] Chau, N.T. and H. Deng, *Critical Determinants for Mobile Commerce Adoption in Vietnamese SMEs: A Conceptual Framework*. Procedia Computer Science, 2018. **138**: p. 433-440.
- [34] Sharma, E., *Developing ICT adoption model based on the perceived awareness and perceived usefulness of technology among telecom users*. International Journal of Technology Enhanced Learning, 2019. **12**(1): p. 99-114.
- [35] Caffaro, F., et al., *Drivers of farmers' intention to adopt technological innovations in Italy: The role of information sources, perceived usefulness, and perceived ease of use*. Journal of Rural Studies, 2020. **76**: p. 264-271.
- [36] Ventre, I. and D. Kolbe, *The Impact of Perceived Usefulness of Online Reviews, Trust and Perceived Risk on Online Purchase Intention in Emerging Markets: A Mexican Perspective*. Journal of International Consumer Marketing, 2020. **32**(4): p. 287-299.
- [37] Huang, F., T. Teo, and R. Scherer, *Investigating the antecedents of university students' perceived ease of using the Internet for learning*. Interactive Learning Environments, 2020: p. 1-17.
- [38] Rita, P., T. Oliveira, and A. Farisa, *The impact of e-service quality and customer satisfaction on customer behavior in online shopping*. Heliyon, 2019. **5**(10): p. e02690.
- [39] Alzahrani, A.I., et al., *Modelling digital library success using the DeLone and McLean information system success model*. Journal of Librarianship and Information Science, 2017. **51**(2): p. 291-306.
- [40] Shin, N., et al., *The moderation effects of mobile technology advancement and system barrier on m-commerce channel preference behavior*. Information Systems and e-Business Management, 2018. **16**(1): p. 125-154.
- [41] Ntsafack Dongmo, F.W., J.R. Kala Kamdjoug, and S. Fosso Wamba, *Mobile Commerce Adoption in a Developing Country: Driving Factors in the Case of Cameroon*, in *ICT for an Inclusive World: Industry 4.0-Towards the Smart Enterprise*, Y. Baghdadi, A. Harfouche, and M. Musso, Editors. 2020, Springer International Publishing: Cham. p. 275-288.
- [42] McLean, G., et al., *Examining consumer attitudes towards retailers' m-commerce mobile applications – An initial adoption vs. continuous use perspective*. Journal of Business Research, 2020. **106**: p. 139-157.



- [43] Hair Jr, J.F., et al., *A primer on partial least squares structural equation modeling (PLS-SEM)*. 2016: Sage publications.
- [44] Akram, U., et al., *Feeling hungry? let's order through mobile! examining the fast food mobile commerce in China*. Journal of Retailing and Consumer Services, 2020. **56**: p. 102142.
- [45] Rajan, C.A. and R. Baral, *Adoption of ERP system: An empirical study of factors influencing the usage of ERP and its impact on end user*. IIMB Management Review, 2015. **27**(2): p. 105-117.
- [46] Gangwar, H., H. Date, and R. Ramaswamy, *Understanding determinants of cloud computing adoption using an integrated TAM-TOE model*. Journal of Enterprise Information Management, 2015.
- [47] Lin, H.-F., *An investigation into the effects of IS quality and top management support on ERP system usage*. Total Quality Management & Business Excellence, 2010. **21**(3): p. 335-349.
- [48] Delone, W.H. and E.R. McLean, *The DeLone and McLean model of information systems success: a ten-year update*. Journal of management information systems, 2003. **19**(4): p. 9-30.
- [49] Chin, W.W., *The partial least squares approach to structural equation modeling*. Modern methods for business research, 1998. **295**(2): p. 295-336.
- [50] Hair, J.F., C.M. Ringle, and M. Sarstedt, *PLS-SEM: Indeed a silver bullet*. Journal of Marketing theory Practice, 2011. **19**(2): p. 139-152.
- [51] Henseler, J., C.M. Ringle, and M. Sarstedt, *A new criterion for assessing discriminant validity in variance-based structural equation modeling*. Journal of the academy of marketing science, 2015. **43**(1): p. 115-135.
- [52] Henseler, J., C.M. Ringle, and R.R. Sinkovics, *The use of partial least squares path modeling in international marketing*, in *New challenges to international marketing*. 2009, Emerald Group Publishing Limited. p. 277-319.
- [53] Obeid, M., Z. Salleh, and M.N.M. Nor, *The mediating effect of job satisfaction on the relationship between personality traits and premature sign-off*. Academy of Accounting Financial Studies Journal, 2017.
- [54] Kalinic, Z. and V. Marinkovic, *Determinants of users' intention to adopt m-commerce: an empirical analysis*. Information Systems and e-Business Management, 2016. **14**(2): p. 367-387.
- [55] Hossain, S.F.A., et al., *Ubiquitous Role of Social Networking in Driving M-Commerce: Evaluating the Use of Mobile Phones for Online Shopping and Payment in the Context of Trust*. SAGE Open, 2020. **10**(3): p. 2158244020939536.