Determining the Factors Influencing Use of Mobile Marketing by Industrial Firms : An Empirical Investigation of Jordanian Industrial Firms

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Abstract

One of the most powerful aspect of marketing that facilitates marketing experiences is mobile marketing (m-marketing).The expeditious advancements in ICT (information & communication technology) and mobile technology have brought about the development of various new services and applications. This creates a substantial need to look into factors that influence use of m-marketing by industrial firms in Jordan. The present study examined three models and theories, Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA) and Unified Theory of Acceptance and Use of Technology (UTAUT). The basis of this study is a survey which was conducted across distinct groups of industries which belong to a range of industrial firms. In all, the survey questionnaires were distributed to 300 respondents to gather the pertinent data. The study found that aspects like the respondents' perceived self efficacy and facilitating conditions showed significant and positive effect on adoption of m-marketing by industrial firms. Meanwhile, the aspect perceived quality of service did not show any significant impact on the implementation of m-marketing among industrial firms in Jordan.

Keywords: **mobile marketing, technology acceptance model, theory of reasoned action, unified theory of acceptance and use of technology**

I. Introduction

Communication technology based mobile networking has brought many significant transformational changes in our lives. This is evident from the ITU (2014) report [1] which indicated that the number of mobile subscriptions had reached 7 billion at the end of 2014. This shows how mobile phones are now considered a necessity, rather than a luxury item as they were considered few years back. This phenomenon is deeply associated with the accessional progress of mobile technology over the last ten years. Within a short time span mobile technology has achieved an incredible feat. The global penetration of mobile phones increased from 5% in 1998 to 50% in 2008, while CISCO (2015) [2] had predicted that the number of mobile subscribers will increase to more than 8.9 billion by the year 2018.

Meanwhile, the global internet usage had increased by 362.3% from 2000 to 2009 [3]. The main cause of such increase is the increased use of mobile devices across the world. This is because the use of the Internet is accepted in almost all cultures around this world and the internet seems to be entrenched in every aspect of our lives. The advancement of mobile technology also entails the increase of internet access as more and more people are accessing it through mobile applications and devices.

Consequently, the accessibility of internet service through mobile devices has created a gateway for round the clock mobility services and this special feature has enticed many people into using mobile phones. In this regard, as mentioned earlier, rather than a luxury item, in recent years, mobile phones are regarded as a daily necessity. Majority of organizations have utilized mobile phones to offer their specific services, with private companies paving the way for the use of mobile services. This was then followed by the public sector. In recent years, more and more firms are offering their services through mobile devices, and this has become a common occurrence. In this light, mobile phones are significant for solving some persistent problems of modern lives, for instance, mobile technology has enabled retail and purchase in real time, regardless of

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time and location. However, in acknowledging the transformational power of mobile phones in our lives, it is also important to consider that the rate and extent of the changes brought about by mobile phones and technology may be unforeseeable due to its extensive uses across different socio-economic domains.

The extensive use of mobile phones has eventually, sparked lot of interest among researchers to study the impact of its use through different angles. The topics of interest in this field of research include the adoption of information technology (IT), the use of new technologies and the development of internet technology. Thus, various theoretical frameworks to study the adoption and diffusion of mobile technology were developed, adopted, and accepted. Researchers investigated the adoption and diffusion of IT and new technologies by the business community.

Furthermore, recent researches on the adoption and use of IT are motivated by the need to forecast the factors that lead to the effective application of IT in the context of marketing ([4], [5]). In the meantime, the use of mobile marketing (m-marketing) is still in its infancy, especially for firms which operate in developing countries as they have limited access to resources and infrastructure. Furthermore, these firms face strong competition and at times, making injudicious investments or wrong choice may be catastrophic for these firms. This creates a need for firms to have more lucid understanding about the difficulties in m-marketing, along with its prospects in expanding the business of these firms. Furthermore, firms will also benefit from knowing how mobile technologies can be adopted to perform marketing activities and processes and how they can promote more effective and efficient marketing compared to traditional marketing practices.

In the meantime, the industrial sector is one of the main contributors to the Jordanian economy. In 2008, 22.5% of the country's Gross Domestic Product (GDP) were attributed to the industrial sector. At the same time, the sector contributed to approximately 90% of the country's exports and employed 15% of the country's labour force [6]. In this light, the discovery of new approaches that can assist managers in Jordanian firms is crucial so that businesses can be effectively and efficiently managed. Therefore, this paper seeks to probe the factors that influence use of m-marketing by Jordanian firms. It is hoped that the findings of this study will contribute to the existing body of knowledge in the field of m-marketing.

II. Industrial Firms in Jordan

As mentioned, the industrial sector is one of the main contributors to the Jordanian economy. In 2008, it contributed to 22.5% of Gross Domestic Product (GDP), and the sector contributed to 90% of Jordanian national exports and it currently employs approximately 15% of the country's labour force. In relation to this, mining and quarrying and manufacturing are two of the largest industries; the mining and quarrying industry, which is mainly focused on potash and phosphate accounted for 3.3% of the country's GDP in 2008, meanwhile, 19.2% of Jordanian GDP in 2008 was attributed to the manufacturing industry.

The manufacturing sector in Jordan consists of a wide range of activities. These activities are put into several groups in accordance with the national classification of industrial sectors established by the Jordanian cabinet on August 13, 2005. This classification covers all industrial enterprises. On the basis of this classification, manufacturing activities are categorized into ten sectors. These sectors are leather and garments, therapeutics and medical, chemical and cosmetics, plastic and rubber, engineering and electrical industries, furniture and wooden carpentry, construction, food processing, paper production, carton and stationeries, and mining. In addition, micro-enterprises were introduced as the eleventh sector to ensure a comprehensive representation of all the enterprises in the industries. It was estimated that there were 14,923 enterprises operating in the Jordanian industrial sector in 2008.In all, these enterprises employed almost 198,876 employees, and had total registered capital worth 2.90 billion Jordanian Dinars. In the meantime, industrial enterprises which employed 10 or more Jordanian staff members and had registered capital of more than JD 30,000 made up 13.12% of the total enterprises which operate in the Jordan industrial sector. They employed 79.29% of the total labour force and accounted for 94.42% of the reported industrial capital in 2008, while micro-enterprises formed 86.88% of the total sum of enterprises in the Jordanian industrial sector. The enterprises hired 20.71% of the total labour force in the industry and their capital made up 5.58% of the industrial registered capital in 2008 [6].

III. Research Problem

The basic problem that drives this study is the need to

find out and comprehend the distinctive factors that may affect adoption of m-marketing by Jordanian industrial firms. Meanwhile, theories related to m-marketing are still in their conception stage and have not been well established . This calls for more deeper studies that can be the benchmarks and the pioneer for the development of theories in related to m-marketing. Researchers within the field need to attain a comprehensive understanding on the distinct factors that influence the implementation of m-marketing among firms which operate in varying sectors , particularly the industrial sector.

IV. Literature Review

As the use of smart mobile phones or smartphones increases, enterprises are faced with challenges in the form of mobile marketing. As mentioned by Liao, Shao, Wang and Chen [11], mobile marketing includes offering products and services through the use of wireless technologies for business activities anytime, anywhere. Furthermore, Clarke [7] described mobile marketing as the consumer's ability to buy products anywhere through the use of wireless devices with internet access such as a smartphone. On the other hand, despite the thriving use of smartphone in online retail transactions, the number of researches which specifically focused on m-marketing in the current smartphone era is still limited [8].

For firms, the surge in mobile devices ownership and the development of mobile applications has created chances for them to use a novel platform to connect with their clients. One increasingly popular way for firms to connect with their clients is through m-marketing. This practice is defined by the Mobile Marketing Association as compilation of practices that allow firms to interactively and appropriately communicate and engage with their clients through the use mobile devices or network [9].One of the advantages of m-marketing is that the use mobile of mobile applications in devices integrates functions such as information search, phone functionality, and interactivity as the consumers conduct retail transactions or subscribe to a service. In this light, an industry study indicated that almost half of mobile users in the US conduct retail transactions through their mobile devices. Of these10% were heavy users and 40% were light users [10].This indicates that consumers are using their mobile devices for retail, hence, mobile applications act as a gateway between the prospective consumer and firms, which make them ideal auxiliary channels for mobile retail [12]. On the other hand, mobile devices have distinct features compared to desktop and laptop computers (PC), specifically the limited keyboard and screen size for display [14]. Additionally, the unique mobile devices functions such as camera, scanners, and Global Positioning System (GPS) make mobile retail a different experience as compared to internet marketing and conventional marketing.

Internet and mobile marketing provide a cost effective retail experience for both consumers and firms [13]. Thus, online and mobile retailers are able to sell an increasing variety of products and services through their sites and applications [15], offer lower retail prices and service rates [16]. It was also claimed that mobile and internet retail have empowered consumers and help them to choose better options for themselves. In the meantime, the use of mobile and internet marketing have established a better relationship between a brand and its consumers, even after the retail transactions are completed [17]. For instance, Court, Elzinga, Mulder, and Vetvik [18] found that 60% of facial skin care products clients had agreed to participate in a post-sale online research. However, internet and mobile retails fall short of a face to face purchasing experience in cases where consumers demand a hands-on demonstrations or fitting, a trial of the product, in-store retail ambiance or direct consultation with a salesperson [19].

On the other hand, Porter [20] claimed that a firm's values are represented by a series of activities and processes called a value chain which provide the prescribed level of value for the consumers. Through this value, firms can shape consumer expectations and build on a solid foundation that will help the firms in establishing a competitive advantage, which lead to higher profits. Meanwhile, sustainable competitive advantages built on specified, limited or unique resources and competencies which are combined into a firm's value chain prevent direct competition. In this light, the prevalence of mobile marketing can serve as a means to improve activities in the value chain of retailers which are meant to enhance communications between consumers and firms and increase service interactions. These, consequently will lead to better output value and increase the potential of higher earnings and margins. In this regard, the enhanced value of outputs was directly linked to transaction-based results indicated by the number of stores and sales traffic while brand relationship signifies consumers' awareness of the brand, consumers' associations with the brand , their

attitudes towards the brand, their purchase intentions, and brand loyalty. Findings of the aforementioned study also showed that the use of mobile marketing can prospectively improve the quality of retail services, increase the consumer's perceived value of the brand and create higher level of satisfaction due to service interactions offered by mobile marketing. These positive experiences are the stepping stones to increased brand loyalty.

The great prospects of mobile and internet marketing have led to various researches across many fields; so far, researchers have explored acceptance of technologies such as the internet in e-business environment ([21], [42]) and the acceptance of mobile marketing ([22], [23], [24]) among others by firms. Nevertheless, the extant literatures on mobile marketing has generally focused on detailing consumer experiences while researches focusing on the firms' point of view are still limited. There are few studies that had explored the antecedents and determinants of mobile technology acceptance from the standpoints of firms.

V. Research Model

The development of the Technology Acceptance Model (TAM) requires the deliberation of one of three approaches. These approaches consist of introducing the model factors, introducing additional beliefs or alternative factors, and analyzing backgrounds and arbitrators with respect to insights on usefulness and ease of access. According to Eze, Goh, Gan, Ademu, & Tella [25], there is a need to employ TAM so that we can modify and customize particular technologies to fulfill the personal demands of each customer. It was claimed that general models were inadequate in explaining the use of service channels and technologies. Furthermore, some of these conditions may need specifics of particular technologies, rather than being generally approached [26]. Therefore, the adoption of TAM requires the integration of other important aspects, rather than looking at m-marketing from a generic viewpoint. In this light, there is a need to include new variables or aspects, related to the speciality and uniqueness of the m-marketing environment into the model. Based on the above discussion, the current research focuses on modifying TAM by adding elements of self-efficacy (SE), facilitating conditions (FC), and quality of service (QoS) as the independent variables of this study. This modification of the model and the disposition of the selected variables were done to comply with the present situation of Jordanian firms, particularly due to the fact that m-marketing in the country is in infancy. In this regard, the next subsections preset the descriptions of the constructed models pertaining to the interest of this research.

VI. Technology Acceptance Model (TAM)

The technology acceptance model was proposed by Davis [32]. This model constitutes two main notions that are, 'perceived usefulness' and 'perceived ease of use '(PEOU) , as shown in Fig. 1.

A. Perceived usefulness

'Perceived usefulness' refers to the degree of an individual's dependence on the systems offered, particularly on the improvement of performance in the specific area. Meanwhile, 'perceived ease of use' is related to the individual's belief in the system offered with regard to the anticipated abolition of mental and physical stress in the specific job aspect. Consequently, TAM entails individual's belief in deciding which approach to take in relation to the system implemented. In return, this belief can assist in the development of the purpose for the consumer to use the service or product. Besides this, in general TAM is an adaptation of the theory of reasoned action (TRA) by Ajzen [47]. The TRA was developed as a more generic model compared to the specific nature of TMA. Thus, this study was conducted on the basis of two main reasons pertaining to the implications of TAM, first, the predictive power of TAM,which is easy to apply to the model as a variety of information system devices are available([33], [34], [35]).Moreover, TAM can facilitate the understanding of interlinking main constructs of the present study,

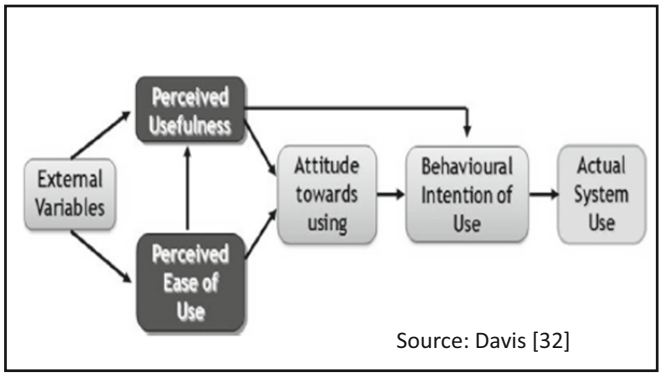

Fig. 1. TAM Model

which are 'perceived usefulness', 'perceived ease of use', 'attitudes towards use', and 'behavioral intentions of use' (BI).

In the meantime, many researchers have acknowledged that Upend PEOU constructs need to be valid in order to comprehend an individual's objective toward the acceptance of the use Information System (IS) in marketing ([36], [37]).

Conversely, one's dependence on the specificity of technological implication make up the validation of constructs; for instance, there are certain constructs in mobile technology that can help better reflection on the adoption of emerging technologies [38]. In relation to this, the following hypotheses were formulated to test TAM implication, with regards to m-marketing needs:

Hypothesis 1. The perceived usefulness of m-marketing has significant impact on the behavioural intention of using m-marketing.

Hypothesis 2. The perceived ease of use of m-marketing has significant impact on the behavioural intention of using m-marketing.

B. Quality of service (Quos)

The delivery of quality services is required of information systems. This is because Quality of service (Quos) can help generate the diversification of peoples' stance with respect to technological aspects. One of the reasons behind this is that most people are reluctant and unwilling to utilize systems because of untimely or poor response time caused by frequent disconnection. Additionally, issues regarding accessibility and privacy concerns are considered as additional constructs that need to be addressed ([39], [40]).

Lin and Lu [41] mentioned that information system must be governed in accordance with the prescribed purpose. There is a need to consider the excellence of information quality, response time, and system accessibility services. In the meantime, the rendered services need to increase the standards of marketing and maintain individuals' working environment in optimum quality, or else, it may affect the future existence of the implemented technological modifications.

In this regard, these specified variables in relation to the Quality of Service (QoS) of Information System(IS)can determine the prospect of the PU, PEOU, and BI in a constructive manner. Consequently, IS quality can be systematically distinguished through the Quality of its Services, which is comprised of response time, information accessibility, reliability, and system's security concerns. These are regarded as important attributes of service quality.

However, the previous study by Lin and Lin [42] found that the fundamental principle of retail activities relies on the offer of maintenance and repair services. This is because such service helps to acquire the clients' agreement in E-commerce transactions. Moreover, according to these research findings, the proposed model of TAM adopts the perceived QoS as crucial aspects in order to reflect on the acceptance of m-marketing. In this regard, the following hypothesis was suggested:

Hypothesis 3. The 'Perceived quality of service" (QoS) of m-marketing has significant impact on the behavioural intentions of using m-marketing.

C. Perceived self-efficacy (SE)

According to the study conducted by Compeau and Higgins [43], self-efficacy refers to one's belief on his/her ability to execute specific tasks . Thus, according to the m-marketing concept, self-efficacy is considered as one's critical analysis in the use of m-marketing . Additionally, the perceived self-efficacy and behavioral intentions were empirically verified by the underlying relationship between these two aspects ([44], [45], [46]). These underlying relationships describe the direct link between the specific aspects that are involved in the consideration process, where the performance of particular aspects affect the performance of others.

Meanwhile, as far as the integration of information technology with a firm's marketing experiences is concerned, the perceived self-efficacy is regarding the improvement of quality. Such improvements favourably influence the behavioural intention of individuals to use the system implemented. On the other hand, if the QoS of the perceived self-efficacy is not upto the standard claimed, particularly if the system's technological features or the services offered by the providers are not good, the behavioral intention is negatively impacted. Therefore, the deliberation of the underlying relationship between the aspects should be related to the implementation technology. Such relation was supported by the study of Luarn and Lin (2005), which showed the positive effects of self-efficacy with the behavioural intention to use Information System. Moreover, Hernandez, Jimenez, and Martin (2009) also corroborated a research to identify the direct and positive impacts of self-efficacy on the PEOU and PU of m-

services. The study assumed that individuals will accept m-marketing services on the basis of their abilities to use it. In this regard, the following hypotheses were devised in this research in relation to the m-marketing context:
Hypothesis 4. Perceived self-efficacy has a significant impact on 'Perceived usefulness' of m-marketing.
Hypothesis 5. Perceived self-efficacy has a significant impact on 'Perceived ease of use' of m-marketing.

D. Facilitating conditions (FC)

Facilitating conditions consist of the resources needed to access some information and to gain some benefits from the offered services. Hence, users are expected to possess the expertise, information and knowledge, as well as the capital to accept the implications of technology. In this regard, compared to e-marketing, m-marketing is still a relatively novel concept. Therefore, users need to possess some fundamental knowledge about mobile services and applications in order to use the services offered, particularly concerning how to access information by using mobile operations across platforms. Moreover, m-marketing clarifies that the cost pertaining to the use technology should be handled by the users and this adds to the cost of communication and information. This aspect distinguishes the adoption of m-marketing from other modes of technology adoption. Consequently, this may hinder the successful implementation of m-marketing because if m-marketing services incur a high cost for the users, the users will ultimately favour traditional modes of marketing regardless of the advantages of m-marketing. In the meantime, the study by Triandis [57] found that facilitating conditions involve the inclusion of service types.
Furthermore, this aspect is also concerned with the extent of its influences on individuals and how it affects the use of the prospective technology. Besides this, the workplace context in the implementation of technology requires access to support and training based on the facilitating conditions. In relation with this, numerous studies in this research area had adopted the technology acceptance model that resulted in the empirical supports on the prospective effects on the perceived usefulness or perceived ease of use by individuals ([48], [49], [50], [51]).Bearing in mind, the scope of past researches, the aspect of facilitating conditions is considered as an effective combination of the degree of acceptance of numerous innovations in information system([27], [28], [29]). This aspect is warranted by researches conducted by Hung, Kus and Chang as well as Lu, Yu and Liu which studied the acceptance level of the integration of WAP services in Taiwan. WAP refers to the Wireless Application Protocol that refers to the technical standards used to access information on mobile network. Consequently, the integration of WAP services has improved mobile networking environment particularly the interactions between data services. In this the study, the facilitating conditions were reflected as important aspects in identifying the acceptance behavior of individuals toward WAP services. On the basis of these findings, the following hypotheses were proposed:
Hypothesis 6. Facilitating conditions have a significant impact on perceived usefulness of m-marketing.
Hypothesis 7. Facilitating conditions have a significant impact on perceived ease of use of m-marketing.

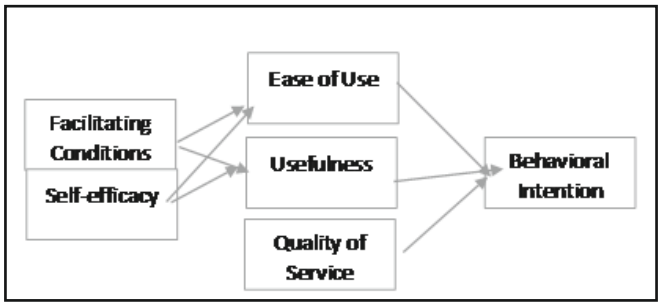

Fig. 2. Research model

Therefore, an acceptance model for m-marketing for this study was identified and is shown in Fig. 2. The model helps to construct five main aspects in evaluating technological experiences and possible behavioural intentions of firms toward the use of m-marketing. The development of this framework was based on multiple sources including the theory of reasoned action (TRA), the Unified Theory of Acceptance and Use [31], the Technology Acceptance Model (TAM) [32]. Furthermore, a range of theories on information systems, culture, economics, social psychology, and current published literature on individual's mobile service or internet acceptance ([52], [53], [54]) were also used as a base for the current research.

VII. Methodology

In this study, the quantitative approach was adopted for the collection of data. Here, the quantitative approach was also employed to allow the data obtained to be

generalized for the whole population. This is because in quantitative research, postpositive statements are generally used by researchers to develop knowledge. In determining the specific research strategy, such as the use of experiment or survey, one needs to take into account the research dimensions, observations or test specific theories. Then, the researcher needs to collect data on the encoded instrument and analyze these to produce statistical data ([55], p. 18). In this regard, there are 6 constructs that were specified in this research: facilitating conditions, perceived self efficacy, perceived quality of service, perceived ease of use, perceived usefulness, and behavioral intentions.

In addition, a pilot study was conducted to predict the sampling size and improve the instruments. During the pilot study, the total numbers of respondents were 45, but only 34 responses were considered valid for analysis. Meanwhile in the final study, the number of respondents was 365 out but only 308 responses were valid. Additionally, 8 questionnaires were discarded due to missing data. Thus, the final sample size was 300. Furthermore, to analyze the results, the study used structural equation modelling (SEM) which was integrated with descriptive statistical analysis and correlations tests. The analysis was conducted by using two softwares,SPSS-22 and AMOS-22.

The survey questionnaires were administered to the sample to document the perspectives, outlook or behaviour of a large group of people or population [55]. This study developed and distributed close-ended questionnaires to collect the data for research. The questionnaires comprised of two parts; Part A contains questions of the demography of the samples while Part B contains questions pertaining the 6 constructs developed through the theoretical framework. All the questions of Part B were measured on the basis of an interval scale, which were adapted from prior literature. Table I provides the summary of all the constructs and their details.

TABLE I. CONSTRUCTS AND ITEMS

Variables	Dimensions/items	Source
Perceived self-efficacy (SE)	3	[56]
Facilitating Conditions (FC)	4	[53]
Perceived Ease of Use (PEU)	3	[53], [56]
Perceived Usefulness (PU)	3	[53], [32]
Perceived Quality of Service (PQS)	5	[56]
Behavioral Intention (BI)	3	[50], [31]

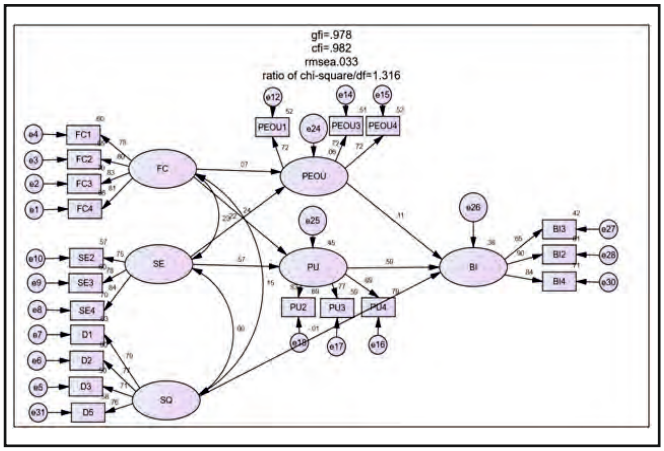

Fig. 3. The AMOS output showing regression (SEM) coefficient between the constructs

VIII. Results and Discussions

A. Validity and Reliability

To assess the convergent validity, a measurement model was designed. Table II presents a summary of validity and reliability aspects in the study and this model was prepared for multi-dimensional constructs (FC, SE, SQ, PEoU, PU, and BI), consequently, items with loading of less than 0.50 were deleted [58]. Meanwhile, convergent validity was established through standardized estimates (standard regression weight [SRW] > 0.5) and extracted average variance (AVE > 0.05). Furthermore, to test the internal consistency, Cronbach's alpha was utilized to determine the reliability of the construct (Cronbach, 1951). In the present study, the alpha values obtained for all constructs were greater than 0.80 while the composite reliability for all constructs were above 0.80, in exception for the variable 'perceived ease of use'. However, the composite reliability was still considered to be at an acceptable stage and could be used for further analysis. In all, Cronbach's alpha and composite construct reliability had indicated that the scales were quite reliable.

B. Model Fit

SEM-AMOS software version 22 was used to verify and check whether the prospective model fits the data. For the model fitness, Hair [58] recommended three type of fitness, absolute fit, increment fit, and parsimonious fit. These three fitness tests possess their own indices, but in this study, an index was taken from each test to validate the model proposed. On the other hand, to obtain the

TABLE II. VALIDITY AND RELIABILITY OF SCALES

Scales	Standard Estimates	Average Extracted	variance	Cronbach's alpha	Composite Reliability
Facilitating Conditions					
FC1	0.65				
FC2	0.88	0.67		0.87	0.88
FC3	0.81				
FC4	0.91				
Perceived Self Efficacy					
SE2	0.75	0.62		0.83	0.83
SE3	0.78				
SE4	0.84				
Perceived Quality of Service					
D1	0.79				
D2	0.71	0.57		0.90	0.84
D3	0.77				
D4	0.76				
Perceived Ease of Use					
PEOU1	0.72				
PEOU3	0.72	0.51		0.80	0.76
PEOU4	0.72				
Perceived Usefulness					
Pu2	0.83	0.69		0.89	0.87
PU3	0.77				
PU4	0.89				
Behavioral Intentions					
BI2	0.9	0.64		0.84	0.84
BI3	0.65				
BI4	0.84				

TABLE III : MODEL FITNESS MEASUREMENTS

Absolute fit			Incremental fit			Parsimonious fit		
Fitness index	**Critical value**	**Test value**	**Fitness index**	**Critical value**	**Test value**	**Fitness index**	**Critical value**	**Test value**
RMSEA	<0.10	0.02	CFI	>0.95	0.989	ChiSq/df	<5	1.17

absolute fit index, the value of root mean square error of approximation (RMSEA) was tested, and to determine the increment fit purpose, the value of comparative fit index (CFI) was tested, while to the test the parsimonious fit, the value of chi-sq/df was measured, and the results are shown in Table III. All these statistical indices suggested that the proposed model fits the data in this study.

C. Hypotheses Testing

As mentioned, Structural equation modeling (SEM) was used to validate the various proposed relations. SEM is a multivariate technique that tries to explain the link between multiple variables (Kaplan, 2000). In the present study, the relationships between the dependent and independent variables, which are based on the conceptual framework, were assessed.

Hypothesis 1. "The Perceived Usefulness" of m-marketing has significant impact on behavioral intention of using m-marketing.

In order to test the existence of significant relationship between these two variables, the SEM technique was employed and the result are given in Table IV. The result

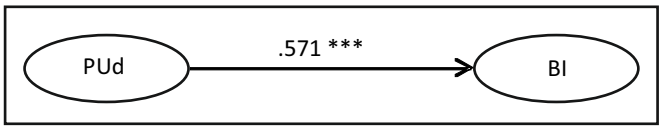

Fig. 4. The relationship between Perceived Usefulness and behavioural intention of using m-marketing

indicates that perceived usefulness has a significant impact on behavioural intention with the p-value (critical value <.05) = .000. The intercepts .571 explains the change in behavioural intentions of the industrial firms for mobile marketing.

Hypothesis 2. "The Perceived Ease of Use" of m-marketing has significant impact on behavioral intention of using m-marketing.

To validate the existence of any significant relationship between these two variables, SEM techniques were employed and the results obtained are given in Table IV. The result indicates that perceived ease of use has no significant impact on behavioral intention with the p-value (critical value <.05) = 0.77. Hence, it indicates that the perceived ease of use has no change on the behavioral intentions of industrial firms to use mobile marketing.

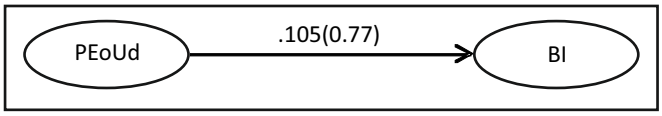

Fig. 5. The relationship between Perceived Ease of Use and behavioral intention of using m-marketing.

Hypothesis 3. Perceived quality of service of m-marketing has significant impact on behavioral intention of using m-marketing.

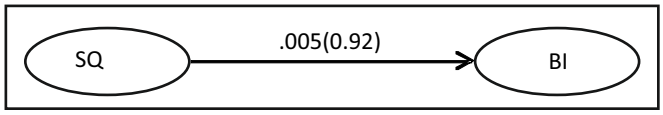

Fig. 6. The relationship between Perceived quality of service of Use and behavioural intention of using m-marketing.

In order to examine the existence of significant relationship between these two variables, SEM techniques were employed and the results obtained are given in Table IV . The result shows that perceived quality of service has no significant impact on behavioural intention with the p-value (critical value <.05) = .92. This shows that there is no the change due to perceived quality of service in behavioural intentions of the industrial firms for the use of mobile marketing.

Hypothesis 4. Perceived self-efficacy has a significant impact on perceived usefulness of m-marketing.

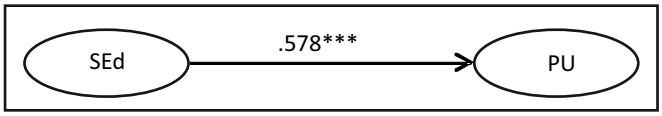

Fig. 7. The relationship between Perceived self-efficacy and perceived usefulness of m-marketing.

In order to examine if any significant relationship exists between these two variables, SEM techniques were employed and the results obtained are given in Table IV. The result indicates that perceived self-efficacy has a significant impact on perceived usefulness with the p-value (critical value <.05) = .000. The intercepts .578 explains the change in the perceived usefulness of the use of mobile marketing by industrial firms.

Hypothesis 5. Perceived self-efficacy has a significant impact on perceived ease of use of m-marketing.

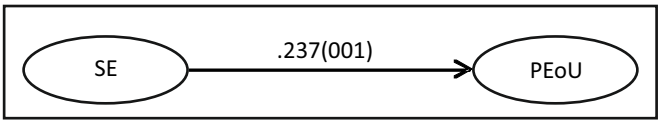

Fig. 8. The relationship between Perceived self-efficacy and perceived ease of use of m-marketing.

To examine the existence of any significant relationship between these two variables, SEM techniques were employed and the results obtained are given in Table IV. The result indicates that perceived self-efficacy has a significant effect on perceived Ease of Use with the p-value (critical value <.05) = .001. The intercepts .237 explains the change in the perceived ease of use on the use of mobile marketing by industrial firms.

Hypothesis 6. Facilitating conditions have a significant impact on perceived usefulness of m-marketing.

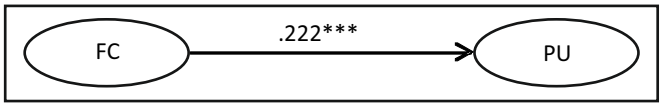

Fig. 9. The relationship between Facilitating conditions and perceived usefulness of m-marketing.

TABLE IV. HYPOTHESIS TESTING SUMMARY

			Estimate	S.E.	C.R.	P	Results
PEOU	<---	FC	.044	.053	.626	.531	Rejected
PEOU	<---	SE	.237	.059	3.288	.001	Not rejected
PU	<---	SE	.578	.045	9.267	***	Not rejected
PU	<---	FC	.222	.038	4.001	***	Not rejected
BI	<---	SQ	.005	.124	.096	.924	Rejected
BI	<---	PEOU	.105	.099	1.767	.077	Rejected
BI	<---	PU	.571	.135	7.988	***	Not rejected

To validate the existence of any significant relationship between these two variables, SEM techniques were employed and the results obtained are given in Table IV. The result indicates that the aspect of facilitating conditions has a significant impact on the perceived usefulness with the p-value (critical value <.05) = .000. The intercepts .222 explains the change in perceived usefulness on the use of mobile marketing by industrial firms.

Hypothesis 7. Facilitating Conditions have a significant impact on "Perceived Ease of Use" of m-marketing.

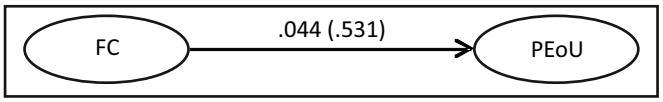

Fig. 10. The relationship between Facilitating conditions and Perceived Ease of Use of m-marketing.

To determine the existence of significant relationship between these two variables, SEM techniques were employed and the results obtained are given in Table IV. The result indicates that facilitating condition has no significant impact on perceived ease of use with the p-value (critical value <.05) = .531. Hence, it shows that there is no change due to facilitating conditions in perceived ease of use among the industrial firms in the use of mobile marketing.

IX. Conclusion

The study was based on the issues in the implementation of m-marketing by industrial firms, and had suggested the use of TAM model based framework which was then empirically tested. Realistically, one academic research study like this will not be sufficient to cover all the relevant aspects of m-marketing technology and the users' acceptance on its implementation. Hence, there are still many domain open for further research. Generally, the research findings support the research model and provide support for most of the hypotheses. As a result, the present study found that the perceived self-efficacy (SE) and facilitating conditions (FC) have a significant positive impact on m-marketing adoption by industrial firms, but the perceived quality of service (PQS) has no significant impact on the adoption of m-marketing by industrial firms.

Consequently, the results will help comprehend the factors that influence' intentions of industrial firms to use mobile-marketing. In addition, this study contributes to the existing literature in mobile marketing by identifying the factors that influence the intentions of industrial firms to use mobile-marketing. The results also show the significant predictors of industrial firms use of mobile marketing which included self-efficacy and facilitating conditions. However, the quality of services was proved to be not a significant predictor. These contributions can be further enhanced by considering the theoretical and methodological implications of these results. At the theoretical level, future studies can seek to discover other potential factors that affect the intention of industrial firms to use m-marketing. Meanwhile, future researches can use other statistical techniques to analyze the relationships between predictors and offer qualitative explanations for mobile marketing implementation at the methodological level. Furthermore, this study also presents several crucial suggestions for the development and promotion of mobile marketing development and promotion, hence, it will be helpful for mobile marketing developers to perceive the implementation of mobile marketing as a simple technical process and ensure that the systems used are compatible with the existing infrastructure of industrial firms.

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