

Investigate the Main Factors That Influence the Consumers' Intention to Adopt Mobile Commerce an Empirical Study

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Summary

Wireless communication had attracted many researchers to write about and study it in depth. Although many empirical studies had been conducted in this field in order to collect and analyze data related to that field, but the main problem is the absent clear results in this field. This paper presents a proposed model that can be used by researcher in order to collect actual and real data about factors that predict consumer intention to adopt m-commerce. The proposed model is composed of three types of variables, the first type is independent variables, the second type is the dependent variable, and the third type is moderate variable. The dependent variable is consumers' intention to adopt m-commerce. The independent variables are trust, cost, social influence, variety of services, and perceived usefulness, ease of use, and the moderate variable is the age, gender, and education level. Data was collected from 355 respondents by using a questionnaire. The results showed that there is a significant relationship between (trust, cost, social influence, variety of services, age) and consumers' decision to m-commerce adoption. It also showed that there is no significant relationship between (ease of use, perceived usefulness, gender, education) and consumers' intention to adopt m-commerce.

Key words:

M-Commerce, Mobile Applications, Consumer Behavior, Consumer Adoption.

1. Introduction

The numbers of people who are using mobile devices have been increased because of the growth of wireless telecommunications, which led to the rapid adoption of mobile commerce (m-commerce). Many researches have defined m-commerce as an extension to the electronic commerce except that it is conducted via wireless environment using wireless devices, so m-commerce can be defined as the activities and transactions such buying, selling, transferring and transforming goods, services, information, and payment through electronic means which are conducted via wireless telecommunications [2, 3, 5].

M-commerce has specific advantages and features (value added attributes) over electronic commerce such as personalization that means the mobile device is more personalized rather than PC because only the user himself will use that device, localization which means that the user can use his wireless device anywhere, adaptability, portability, interactivity which means that the user is more interactive with the mobile device rather than PC, and

ubiquity since the user can use his mobile device anytime 24/7/365 [5, 6].

There are many mobile applications such as: m-learning, m-banking including all the banking transactions, m-payment, m-government, m-marketing, location based commerce, online shopping, advertisements, personal services and mobile entertainment such as game, music, and videos [4, 15].

This paper investigates the major factors that impact the consumer decision to m-commerce adoption. These factors are: trust, cost, social influence, variety of services, perceived ease of use, and perceived usefulness. In addition to the demographic information such as: age, gender, and education level.

This study consists of nine sections. Introduction is the first one. The second part explains the Literature review. Objectives of the study are presented in the third sector. The fourth section shows the research hypotheses. The suggested model is presented in the fifth part. Study population and Sample are explained in the sixth part. The seventh section presents the instrument validity and reliability, while the eighth part discusses the hypotheses testing and results, and finally the ninth section is the conclusion and recommendations.

2. Literature Review and Related Works

M-commerce is considered as a specialized part of e-commerce because it has the same features and characteristics of e-commerce excepting that the m-commerce transactions and activities are conducted via a wireless environment [13].

M-commerce has spread worldwide with the proliferation of wireless networks, there are also some drivers of m-commerce such: widespread of more powerful of smart phones, handset culture, mobile workforce, the service economy, improving bandwidth which was a limitation of m-commerce, and improving price per performance [13].

One of the main advantages and improvements of m-commerce is increasing the productivity of the people and increasing the quality of their life especially for mobile workers who spends more than 25 % of the time away from his primary space, also there some benefits of m-commerce such as: improving marketing and advertising channels, and saving the user time because the

user or consumer can interact with the website through the mobile without having to go far to the store [7].

Many m-commerce adoption studies have been conducted over many countries with different variety samples. Such as [3] which conducted in Malaysia and China and its results showed that Malaysian and Chinese people interested in m-commerce adoption. Another Chinese study showed that the Chinese people concerned in m-commerce perception, and they prefer mobile applications especially because of convenience which means that they can do their businesses anytime and anywhere [16]. Study [7] that conducted in Brazil shows that the Brazilians concerned in m-commerce adoption especially the adoption of m-banking, the results show that 75-80 % of Brazilians will adopt m-commerce in 2024.

Another study which used the original Technology Acceptance Model showed that the ease of use and perceived of usefulness are significant factors to adopt m-commerce [11]. Even though that Jordan is one of the developing country, but there are many people who has smart phones with internet access and they use m-commerce with it different services and applications. A survey carried out by the Ministry of Communications and Information Technology in Jordan showed that 99 % of Jordanian families have cell phones and Internet access is available in 70% of their homes. It also turns out that the most use of mobile devices such as laptops and smart phones for personal purposes by 87%, and for work purposes 26% [14]. The results also indicate that about 14 % had used e-government portal through the website for access to government services via their mobile devices [14]. The survey's results also show that the Internet service via mobile broadband is the most widely used method by 99 %, and came in second place Internet service via WiMAX by 9 %. Most of the Jordanian people use m-commerce with social media and social networking sites, and least of the use it for purchase or sale of goods and services. The results also show that Spending on the internet rose from 15.9 million JD in 2014 to 18.4 million JD in 2015 [14].

3. Objectives of the Study

The main objective of this study is investigate the main aspects that influence the consumers' decision to m-commerce adoption and to find the impact of cost, trust, social influence, variety of services, ease of use, and perceived of usefulness on consumers' decision to m-commerce adoption. It also aim to find the relationship between demographic information such as (age, gender, and education level) and consumers' intention to adopt m-commerce.

4. Research Hypotheses

According to the research model the following hypotheses were developed:

Ho1: There is no relationship between trust and consumers' decision to adopt m-commerce.

Ho2: There is no negative relationship between cost and consumers' decision to adopt m-commerce.

Ho3: There is no positive relationship between social influence and consumers' decision to adopt m-commerce.

Ho4: There is no positive relationship between variety of service and consumers' decision to adopt m-commerce.

Ho5: There is no positive relationship between perceived ease of use and consumers' decision to adopt m-commerce.

Ho6: There is no positive relationship between perceived of usefulness and consumers' decision to adopt m-commerce.

Ho7: There are no significant variations in the consumers' decision to m-commerce adoption, due to the age, gender, and education level.

Ho7-1: There are no significant variations in the consumers' decision to m-commerce adoption due to age.

Ho7-2: There are no significant variations in the consumers' decision to m-commerce adoption due to gender.

Ho7-3: There are no significant variations in the consumers' decision to m-commerce adoption due to education level.

5. Proposed Model

According to the Technology Acceptance Model (TAM), and according to some previous researches and studies [1, 3, 8, 11] the researcher has developed the suggested research model which is shown in fig. 1, that consists of three variables which are independent variables, dependent variable, and control variables (moderate variables). The independent variables are:

Trust which means that the user will trust and be confident with the mobile applications and sites, taking into the account the security risks.

Cost: it is one of the main factors to adopt the m-Commerce, since many consumers maybe will not use m-commerce if the mobile applications and services price are very expensive.

Social influence: consumers may use mobile as a current trend or because their friends or family members influence their decision to use mobiles.

Variety of services: m-commerce has numerous applications and services but it is still limited if it is compared with e-commerce.

Perceived of Use: m-commerce should be easy to use and the applications must have graphical user interfaces since

it will be used by consumers with different education levels and different age groups.
Perceived of Usefulness: m-commerce applications should be usefull and increse the consumers productivity and quality of their works.

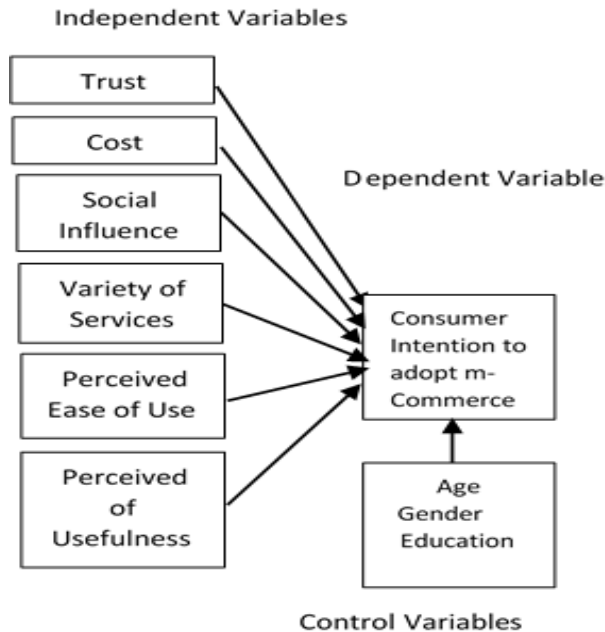


Fig. 1 Research model

6. Study population and Sample

In order to test the hypotheses, the researcher has developed a questionnaire and distributed it randomly to 400 Jordanian consumers with different ages, genders, and educational levels, the researcher collected 355 vaild questionnaires. Table 1 summarizes the result of population description.

Table 1: Demographic Information

| Variable | Category | Frequency | Percentage |
|-----------------|-------------------------|-----------|------------|
| Age | 15-18 | 6 | 1.7 % |
| | 19-23 | 214 | 60.3 % |
| | 24-28 | 88 | 24.8 % |
| | 29-35 | 23 | 6.5 % |
| | Above 35 | 24 | 6.7 % |
| Variable | Category | Frequency | Percentage |
| Gender | Male | 200 | 56.3 % |
| | Female | 155 | 43.7 % |
| Variable | Category | Frequency | Percentage |
| Education level | School | 6 | 1.7 % |
| | Diploma | 38 | 10.7 % |
| | Bachelor degree | 270 | 76.1 % |
| | Master degree and above | 41 | 11.5 % |

7. The Instrument Validity and Reliability

7.1 The Instrument Validity

The developed questionnaire has been distributed to five proffessors who are specialized in e-commerce in order to judge all the questions in the questionnaire.

Also the questionnaire was translated to arabic in order to ensure that all of the respondents have understood all of the questions.

7.2 The Instrument Reliability

The researcher has tested the reliability and stability of the questionnaire by using Cronbach's alpha as shown in table 2. According to [9] the reliability coefficients should be graeter than 0.60. in order to confirm that the questions used to measure the variables are reliable.

Table 2: Reliability analysis

| Variable | Cronbach's Alpha | No. of Items |
|-------------------------|------------------|--------------|
| Trust | 0.932 | 6 |
| Cost | 0.893 | 5 |
| Social influence | 0.916 | 3 |
| Variety of services | 0.872 | 3 |
| Perceived of Use | 0.856 | 5 |
| Perceived of Usefulness | 0.834 | 4 |

8. Hypotheses Testing and Results

The researcher tested the research hypotheses by using simple linear regression test for the hypotheses Ho1 – Ho6, and Hierarchal Regression analysis test for the hypothesis Ho7. The researcher also depends on the mathematical and statistical rules which are stated and proved in the followings [10, 12].

- Accept Ho1 if calculated F is less than tabulated F and reject Ho1 if calculated F greater than tabulated F.
- Accept Ho1 if F Sig. value is greater than 0.05 and reject Ho1 if Sig. F value is less than 0.05.
- Accept Ho1 if R Square Change value is 0 and reject Ho1 if R Square Change value is greater than 0.

Hypotheses 1-6:

Table 3: Test of Hypothesis Ho1-Ho6

| H no. | F calculated | F tabulated | F Sig. | Result |
|-------|--------------|-------------|--------|--------|
| Ho1 | 13.841 | 3.47 | .000 | Reject |
| Ho2 | 6.620 | 3.47 | .000 | Reject |
| Ho3 | 8.212 | 3.47 | .000 | Reject |
| Ho4 | 9.426 | 3.47 | .000 | Reject |
| Ho5 | - 1.241 | 3.47 | .198 | Accept |
| Ho6 | - 1.413 | 3.47 | .198 | Accept |

According to table 3, it was found that:

Ho1: (calculated $F=13.841$) is greater than (tabulated $F=3.47$), and also $F \text{ Sig.} = 0$ which is less than 0.05. thus Ho1 is rejected.

Ho2: the value of ($F \text{ calculated}= 6.620$) is greater than F tabulated, therefore Ho2 is rejected.

Ho3: ($F \text{ calculated} = 8.212$) is greater than F tabulated, So Ho3 is rejected.

Ho4: the value of ($F \text{ calculated}= 9.426$) is greater than F tabulated, therefore Ho4 is rejected.

Ho5: ($F \text{ calculated} = - 1.241$) is less than F tabulated, and $F \text{ Sig.}$ is greater than 0, hence Ho5 is accepted.

Ho6: ($F \text{ calculated} = - 1.413$) is less than F tabulated, and $F \text{ Sig.}$ is greater than 0, thus Ho6 is accepted.

Hypothesis 7:

Ho7: There are no significant variations in the consumers' decision to m-commerce adoption, due to the age, gender, and education level.

Ha7: There are significant variations in the consumers' decision to m-commerce adoption, due to the age, gender, and education level.

In order to examine the main hypothesis Ho7, there are three sub hypotheses which are:

Ho7-1: There are no significant variations in the consumers' decision to m-commerce adoption due to age.

Ha7-1: There are significant variations in the consumers' decision to m-commerce adoption due to age.

Table 4: Test of Hypothesis Ho7-1

| R | R Square | R Square Change | Result of Ho7-1 |
|-------|----------|-----------------|-----------------|
| 0.241 | .058 | 0.005 | Reject |

Referred to table 4, the researcher found that $R = 0.241$, $R^2 = 0.058$ and $R \text{ Square Change} = 0.005$. According to the rule it indicates there are significant variations in the consumers' decision to m-commerce adoption due to age. Which means the older users and consumers in Jordan are more expected to m-commerce adoption rather than the younger ones.

Ho7-2: There are no significant variations in the consumers' decision to m-commerce adoption due to gender.

Ha7-2: There are significant variations in the consumers' decision to m-commerce adoption due to gender.

Table 5: Test of Hypothesis Ho7-2

| R | R Square | R Square Change | Result of Ho7-2 |
|-------|----------|-----------------|-----------------|
| 0.392 | 0.218 | 0.000 | Accept |

Table 5 shows that $R \text{ Square Change} = 0.000$, thus Ho7-2 is accepted, that means There are no significant variations in the consumers' decision to m-commerce adoption due to gender.

Ho7-3: There are no significant variations in the consumers' decision to m-commerce adoption due to education level.

Ha7-3: There are significant variations in the consumers' decision to m-commerce adoption due to education level.

Table 6: Test of Hypothesis Ho7-3

| R | R Square | R Square Change | Result of Ho7-3 |
|-------|----------|-----------------|-----------------|
| 0.624 | 0.315 | 0.000 | Accept |

Referred to table 6, it was found that the value of $R \text{ Square Change} = 0.000$, so Ho7-3 is accepted, which means There are no significant variations in the consumers' decision to m-commerce adoption due to education level.

9. Conclusion and Recommendations

9.1 Conclusion

This paper examine the main factors that may affect the consumers' intention to adopt m-commerce in a developing country among Jordanian consumers. The results show that there is a significant relationship between (trust, cost, social influence, variety of services) and consumers' decision to adopt m-commerce. The results also show that there is no significant relationship between the factors (perceived ease of use, and perceived of usefulness) and the Jordanian consumers decision to m-commerce adoption.

The study results indicate that the demographic information has a little impact to predict the adoption of m-commerce, since only the age factor has an effect on consumer decision to m-commerce adoption, but there were no significant variations in the consumers' intention to adopt m-commerce due to the gender and educational level factors.

9.2 Recommendations

According to the study results the researcher suggests the following recommendation:

- Mobile application development companies must take into consideration the security and privacy of their mobile application because trust is one of the main important factors that affect the adoption of m-commerce.
- Internet service and mobile application price should be reasonable and not expensive, because the Jordanian consumers will not adopt m-commerce if the cost of that adoption is very expensive.
- The Jordanian consumer are influenced by their friends, media such as TV, and the recent trend to adopt m-commerce, thus there must many advertisements and offers of mobile applications and services.

- The Jordanian consumer would like to use m-commerce if there is a variety of mobile services and applications, such as mobile banking, location based services, mobile learning, and games. So the mobile corporations should diverse in their services and applications to attract users.
- Although the belief that young people are the most widely used for technology and mobile applications, but the results of the study show that older people would like to adopt m-commerce more than the younger one, maybe because they can spend more money on the mobile services and applications. Therefore mobile companies should pay attention their applications and services to all different age groups.

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