Study of Factors Influencing Older Adults' Acceptance of Mobile Commerce in China

Feixiang Zhang[1] & Carolina Garcia Soto[1]

[1] College of Communication, University of Shanghai for Science and Technology, Shanghai, China

Correspondence: Feixiang Zhang, College of Communication, University of Shanghai for Science and Technology, Shanghai 200093, China.

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Abstract

This study sought to investigate the factors influencing older adults' acceptance (use) of mobile commerce in China. Research questionnaires were developed and distributed to a sample of 300 older adults via WeChat of which 251 older adults wholly answered and returned the surveys. It was established that all the factors influencing the use of mobile commerce including perceived word of mouth, perceived trust, perceived risk, perceived usefulness, perceived ease to use, and perceived value of using mobile commerce have significant positive correlation with the use of mobile commerce among the older adults in China.

Keywords: acceptance, mobile commerce, influencing factors, EWOM

1. Introduction

In the advanced technological era, shopping through internet is having high importance to boost the electronic commerce around the world wide.The Chinese e-commerce market has been proliferating since 2016, China reached a record number of 721 million internet users, which is more than half of the country's population and represents 21.1 % of the World Internet User (Internet Live Stats, 2017). China is also the largest e-commerce market in the world by value of sales, with an estimated US$899 billion in the year 2016 (Millward, 2016).

The general objective of this study is to examine the influencing factors of older adults' acceptance (use) of mobile commerce in China. Specifically, this present study attempts to address the following objectives: 1) to identify the factors that influence the acceptance of mobile commerce by older adults in China; 2) to assess the impact of the identified factors on the acceptance of mobile commerce by older adults in China.

2. Research Model and Hypothesis

The present study aimed to replicate and integrate a model to analyze the negatives and positive factors which may influence on the older adults mobile commerce acceptance. Based on the Lian & Yen, (2014), Qi, Chan and Chen (2015) and Wu and Wang (2004) model the proposed factors include: Perceived Risk, Perceived usefulness, perceived easy to use perceived value. Moreover, based on Awad & Ragowsky (2008) theory, the proposed factors include Perceived Word of mouth (WOM) and Trust. The factors Perceived Risk, Perceived usefulness, perceived easy to use and Trust (as a mediator) will positively affect older adults' intentions toward mobile commerce acceptance. In contrast, the Perceived risk, and perceived value will negatively affect the older adults mobile commerce acceptance.

2.1 Perceived Word of Mouth (WOM) and Trust

The opinion or statement is being given by the customer that can be real, former, or having potential regarding the product on the basis of making shopping through online is considered as the E-WOM (Henning Thurau et al, 2004). Trust is the important factor that can develop the relations with others. It is suggested that consumer that have the trust on the internet considered that provided information is highly effective and credible (ACNielsen, 2008) and it is indeed important for the consumers that other shopper share their experiences which is more productive for the consumer then the organization is providing information (EMarketer, 2014) and E-WOM can increase the trust of the online shoppers (Wang et al, 2009);Trust is defined as the reliance on other entities and other people and the same model has used antecedents of trust from the integrated Trust and technology acceptance model (TAM) to examine how e-commerce adoption is affected by the perceived online trust (Awad & Ragowsky, 2008). The following

hypothesis are developed:

H1a: Perceived WOM will have a positive effect on Trust

H1b: Perceived WOM will have a direct effect on Acceptance

H2: Trust will have a positive effect on Acceptance

2.2 Perceived Risk

Previous models define Perceive risk as when the user don't understand enough a new services or product online, then because the lack of understatement the users can't consider the real risks or if this risk is high or not. (Lian & Yen, (2014). Other research also defined Perceived risk (security) as the user idea of a possible loss because of the use of the new services or product online. (Wu and Wang, 2004). The concept of the potential risk of using this services and products online may prevent people from trusting them. Therefore the users may not accept the services or product. This study infers that a higher perceived risk affect the acceptance of Mobile commerce directly also that the higher the perceived risk, the less trust, the older adults can have in the electronic commerce and therefore without trust the lower the acceptance. Based on this we proposed the following hypothesis:

H3a: Perceive Risk will have a negatively affect on Trust

H3b: Perceived Risk will have a direct adverse effect on Acceptance

2.3 Perceived Usefulness

This construct was used before to understand the user's acceptance of new technology the definition es virtually the same of each of the previous models in the research of mobile phone adoption by older adults the authors definition was "the extent to which a person believes that using the given technology will enhance his/her performance" (Conci, Pianesi, and Zancanaro, 2009, p.5). Again in a very similar In the research of the smartphone adoption by older adults: "The degree to which a person believes that using the particular technology would improve his/her quality of life" (Qi, Chan and Chen, 2015, p.4) and finally in the investigation of what drives Mobile commerce use in Chinese users: "The degree to which a person believes that engaging in online transactions via Mobile Commerce would enhance his or her performance."(Wu and Wang, 2004, p.5) Based on this previous research we decided to replicate this construct to understand the older adults acceptance of mobile commerce. Based on this we proposed the following hypothesis:

H4: Perceived Usefulness will have a positive effect on Acceptance

2.4 Perceived Easy to Use

Several studies pointed out how this construct influence on the user's acceptance and use of new technologies, such as in the research of what drives Mobile commerce use in Chinese users, in this model the construct have a direct effect on behavioral intention to use:"The degree to which a person believes that engaging in online transactions via Mobile Commerce would be free of effort" (Wu and Wang, 2004, p.5). In the in the proposed Smart phone Acceptance Model for Chinese Older People (SAMCOP) the construct is used to understand acceptance, and in this model, the construct Perceived ease of use is significantly positively associated with the attitude towards using behavioral intention and perceived usefulness. (Qi, Chan and Chen, 2015, p.4) "The extent to which a person believes that using technology is free of effort" (Venkatesh et al.; 2003)and finally in the research model of Mobile phone adoption by older adults, they hypothesize that the less work is to use the mobile phone, the more will make older adults willing to use it. The construct is defined as "the degree to which a person believes that using a system will be free of effort" (Conci, Pianesi, and Zancanaro, 2009, p.5) Therefore in the context of our study we replicate this construct and the following hypothesis is proposed:

H5: Perceived Ease of use will positive affect on Acceptance

2.5 Perceived Value

In previous research defined the perceived value as for how the users ponder the difference between a new product and an existing one, if the new product seems to fail in having more benefits or advantage over the old one, the user will be reluctant to accept the change (Lian & Yen, 2014). In other words that unless the innovative product provides a higher value than does the existing product, the perceived value is likely to affect older adults' acceptance of Mobile Commerce negatively and this is the reason we decided to replicate this construct. Based on this we proposed the following hypothesis:

H6: Perceived Value will negatively affect acceptance

3. Research Design and Data Collection

This study was primarily based on quantitative approach to assess the influencing factors of the older adults' acceptance of mobile commerce in China. For the purpose of this study, a descriptive research is used. Descriptive research can be used to identify and classify the elements or characteristics of our study. The questionnaire consisted of two parts: 1) demographic characteristics of the users and the information about user familiarity and basic usage of smartphones regarding usage frequency: a. "Use in urgent need." b. "Use casually" c. "Use for convenience only" d. "Use frequently." 2) the exploration of influence factors constructs (Perceived Word of mouth (WOM) and Trust. The factors Perceived Risk, Perceived usefulness, perceived easy to use and Trust (as a mediator). In total, six variables were included in this research. All measurements used a five point Likert scale varying from 1 (strongly disagree) to 5 (strongly agree).

Table 1. Items of questionnaire

Factors	Item number	Source
Demographic	6	Wu and Wang (2004)
Perceived WOM	4	Park & Lee (2009)
Perceived Trust	3	Awad & Ragowsky (2008)
Perceived Risk	3	Wu and Wang (2004) and Lian & Yen (2014)
Perceived usefulness	4	Wu and Wang (2004) and Qi, Chan and Chen, 2015)
Perceived ease to use	3	Wu and Wang (2004) and Qi, Chan and Chen, 2015)
Perceived value	2	Lian & Yen (2014)

Due to the nature of the study and a large number of the population in China, the researcher used both quota and simple random sampling techniques to select three hundreds (300) older adults aged 50years and above as the sample size of the study. A 25 self-developed questionnaires was developed as the instruments for collecting the data for the study and data was obtained from older adults through WeChat. A total of 300 older adults participated in the study with an equal number of questionnaires sent out online via WeChat. After the online survey, 251 questionnaires were returned which were well answered representing a response rate of 84% of the 300 sample size and it is in good shape for cogent analysis.

4. Data Analysis and Results

4.1 Socio-Economic Demographic Characteristics of Respondents

The statistics shown in Table 2 indicates the socio-economic demographic characteristics of the respondents who participated in the study.

Table 2. The Socio-Economic Demographic Characteristics of Respondents

		N	%
Gender	Male	91	36.3
	Female	160	63.7
	Total	251	100.0
Age Distribution	50-59	133	53
	60-69	79	31.5
	70-79	28	11.1

	80 and Above	11	4.4
	Total	251	100.0
Educational Background	Junior High School	59	23.5
	Senior High School	74	29.5
	First Degree	90	35.9
	Master's Degree	28	11.2
	Total	251	100.0
Monthly Income	Less than 3,000 RMB	64	25.5
	3,000-5,000 RMB	78	31.1
	5,001-8,000 RMB	65	25.9
	8,001-10,000 RMB	44	17.5
	Total	251	100.0

Out of the 251 sampled, 63.7% constitute the majority of the respondents that participated in the study and they are found to be females while 36.3% of the respondents were male. The second demographic variable of the participants examined was their age. The data portrayed that, majority of respondents (53%) were in the age bracket of 50 – 59 years. This was followed by respondents within the age bracket of 60 – 69 years with a percentage of 31.5% o. 11.1% of the respondents also indicated that they fall within the age bracket of 70 – 79 years and 4.4% also expressed that they are 80 years and above.The study further investigated the educational background of the respondents which it established that 90 respondents representing 35.9% of the total sample had their first degree education, (74) 29.5% of the respondents also expressed that they had their senior high level education, (59) 23.5% of the respondents also indicated that they had junior high education, and (28)11.2% had master's degree during the period of the study.

4.2 The Use of Mobile Commerce

The study discovered that majority of the respondents (42.2%) use their smart phones only when they find time convenient, 39.8% of them frequently use their smart phones, whereas 12.7% of the respondents indicated that they casually use their smart phones. Majority (23.9%) of the respondents were very familiar with mobile commerce transactions with 22.7% of them who were found familiar with the use of mobile commerce, whereas 23.1% of the respondents were completely unfamiliar with the use of mobile commerce. From the analysis, it is evident that most of the older adults are familiar with mobile commerce transactions in China. Table 3 presents the responses for the use of mobile commerce transactions.

Table 3. Use of Mobile Commerce

		N	%
Use Smart Phone	Use in urgent need	13	5.2
	Use casually	32	12.7
	Use for convenience only	106	42.2
	Use frequently	100	39.8
	Total	251	100.0
Familiar with mobile commerce transactions	Completely unfamiliar	58	23.1
	Familiar a little	51	20.3
	Neutral	25	10.0
	Familiar	57	22.7
	Very familiar	60	23.9
	Total	251	100.0

4.3 Factors Influencing the Use of Mobile Commerce

This analysis was done to identify the factors that influence the older adults to use mobile commerce in China. The study responses concerning the factors that influence the use of mobile commerce among the older adults are presented in Table 4.

Table 4. Factors influencing the use of Mobile Commerce

measurement items		95% Confidence Interval	
	Mean	Lower	Upper
Perceived word of mouth			
• I will refer to other people's opinion about mobile commerce before I use it.	3.37	3.27	3.48
• Other people opinion about mobile commerce will crucially affect my acceptance decision.	3.33	3.24	3.44
• I think other people opinion about mobile commerce is trustworthy.	3.31	3.22	3.41
• I think other people opinion about mobile commerce are mostly positive.	3.29	3.19	3.39
Perceived trust			
• Based on my experience with the mobile commerce in the past, I know it is trustworthy.	3.40	3.30	3.49
• Based on my experience with the mobile commerce in the past, I know it provides good service.	3.55	3.45	3.65
• Based on my experience with the mobile commerce in the past, I know it is predictable.	0.33	3.24	3.44
Perceived risk			
• I think mobile commerce has potential risk	0.67	3.57	3.77
• I fear that while I am using mobile commerce, something could go wrong	0.65	3.55	3.76
• I fear that while I am using Mobile commerce my private information may be stolen by other people.	0.86	3.76	3.96
Perceived usefulness			
• Mobile commerce would improve the way I perform my online transactions.	0.61	3.51	3.71
• Mobile commerce would facilitate buying things online for me.	0.71	3.61	3.82
• Mobile commerce is useful for my daily life.	0.46	3.35	3.57
• Mobile commerce would make my life more convenient	0.68	3.57	3.78
Perceived ease to use			
• I think learning to use mobile commerce is easy	0.24	3.13	3.37
• I found mobile commerce easy to use	0.29	3.18	3.41
• You can be proficient at using mobile commerce	3.15	3.03	3.28
Perceived value			
• Mobile commerce is economical.	3.36	3.25	3.47
• Mobile commerce increases my ability to control payment details and product information on my own.	0.55	3.44	3.65

Scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

As to whether the older adults will refer to other people's opinion about mobile commerce before they use it, most of the respondents (M=3.37) averred that they will refer to other people's opinion before they consider using mobile commerce. This result was found to be significant at 5% level of significance. This means that other people's opinion will positively affect the decision of older adults in using mobile commerce.

In addition, the study identified perceived trust of using mobile commerce as another factor that influence the use of mobile commerce among older adults in China. It was found that a good past experience of the older adults with mobile commerce enhances its trustworthiness, hence leading to the tendency of using the mobile commerce (M=3.40). The study further discovered that when most older adults suppose that they will be offered good services based on their past good experience with mobile commerce, the use of mobile commerce will be increased (M= 3.55). These results were realized to be significant at 5% level of significance.

Considering the perceived risk, which is a factor that determines the use of mobile commerce. The study indicated that majority of the older adults strongly disagreed with the assertion that mobile commerce has potential risk which affects their decision of using mobile commerce (M = 0.67), and as such their private information may not be stolen by other people should something goes whiles using mobile commerce (M = 0.86). It was again found significant at 5% level of significance.

With respect to the perceived usefulness of using mobile commerce, the study found that using mobile commerce makes the lives of older adults more convenient, and also it helps to facilitate online business transactions; of which the older adults find it very useful for their daily lives.

The study delved into finding out whether there is some easiness in using mobile commerce. It was found that older adults find it easy to learn and use mobile commerce, and it was significant at 5% level of significance. In the course of the study, majority of the older adults indicated that every older adult can be proficient at using mobile commerce.

Finally, the study identified that the use of mobile commerce is economically valuable and also increases the ability of the older adults to control their payment details and product information on their own enhance the use of mobile commerce in China.

4.4 The Impacts of the Identified Factors on the Use (Acceptance) of Mobile Commerce

Table 5 explains the impact of determinants of the use of mobile commerce. The results indicate that there is a strong and positive relationship ($r = 0.927$; $P < 0.01$) between the use of mobile commerce and the perceived word of mouth. The relationship is also significantly positive indicating that as people attend to prefer other people's opinions about mobile commerce before they use it, it will also increase the use of mobile commerce. As people are inclined to adhere to advice and opinion of their friends and relatives about mobile commerce, their tendency to accept and use mobile commerce also heightens. Hence, the perceived word of mouth by friends and families positively impacts on the use of mobile commerce.

Also, the results displayed in Table 5 portray a positive relationship ($r = 0.921$) between the use of mobile commerce and the perceived trust, and the relationship is noted to be significant at ($P < 0.01$). This implies that a past good experience with mobile commerce, which enhances its trustworthiness, will improve the acceptance and usage of mobile commerce. Again, when people suppose that based on their past good experience with mobile commerce, they will be offered good services, the use of mobile commerce will be increased.

And a direct significant relationship ($r = 0.894$; $P > 0.01$) is observed between the use of mobile commerce and perceived risk of using mobile commerce. This is quite interesting because as it is observed empirically, there is always a strong negative relationship between the two variables, but this study proves otherwise. This result confirms the findings in Table 5 which suggest that most respondents strongly disagree that their private information may be stolen by other people as they use the mobile commerce in transacting businesses.

Moreover, a highly significant and positive relationship ($r = 0.901$; $P < 0.01$) exists between the perceived usefulness of mobile commerce and the use of mobile commerce. This implies that as people find the use of mobile commerce more convenient, as it helps to facilitate online business transactions, there will be a corresponding marginal improvement in the use of mobile commerce.

Last but not the least, the relationship between the use of mobile commerce and the perceived ease to use mobile commerce applications was found be positive and highly significant ($r = 0.965$, $P > 0.01$). This implies that the ease with which use or learn to use mobile commerce accounts for the corresponding increase in the use of mobile commerce in China.

Finally, the study found that there exists a strong positive relationship between the use of mobile commerce and the perceived value derived from using commerce ($r = 0.937$). The relationship further found to be significant ($P > 0.01$). By implication, the fact that the people find the use of mobile commerce to be economical, and also increases their ability to control their payment details and product information on their own enhance the use of mobile commerce in China.

Table 5. Correlation matrix establishing the relationship between identified factors and the acceptable (use) of mobile commerce

Variables	1	2	3	4	5	6	7
1. Use of mobile commerce	1						
2. Perceived word of mouth	0.927**	1					
3. Perceived trust	0.921**	0.975**	1				
4. Perceived risk	0.894**	0.875**	0.910**	1			
5. Perceived usefulness	0.901**	0.905**	0.942**	0.980**	1		
6. Perceived ease to use	0.965**	0.949**	0.939**	0.903**	0.917**	1	
7. Perceived value	0.937**	0.942**	0.965**	0.925**	0.954**	0.948**	1

Note: **Correlation is significant at the 0.01 level

5. Discussion and Suggestion

5.1 Discussion

5.1.1 Acceptance/Use of Mobile Commerce

The study discovered that most respondents use smart phones when they find time convenient with a significant section of the older adults who frequently use smart phones. The results further indicated that most of the older adults are familiar with mobile commerce transactions, even though a small portion of the respondents indicated they were completely unfamiliar with the use of mobile commerce.

5.1.2 Factors Influencing the Use of Mobile Commerce

The study revealed that the factors that influence the use of mobile commerce include perceived word of mouth, perceived trust, perceived risk, perceived usefulness, perceived ease to use, and perceived value of using mobile commerce among the older adults in China.

5.1.3 Impact of the Identified Factors on the Use of Mobile Commerce

It was evident in the research findings that all the factors that influence the use of mobile commerce were positively correlated with the use of mobile commerce among the older adults. It was established that perceived word of mouth, perceived trust, perceived risk, perceived usefulness, perceived ease to use, and perceived value of using mobile commerce have significant positive correlation with the use of mobile commerce.

5.2 Suggestion

This study investigated the factors influencing older adults' acceptance (use) of mobile commerce in China. The following major contributions and findings of this research are considered:

(1) The results indicated that most of the older adults of this study are familiar with mobile commerce transactions: this could show an indication that the common belief that older adults don't understand or don't use online shopping isn't true.

(2) The study discovered that most respondents use smart phones when they find the time convenient with a significant section of the older adults who frequently use smart phones.

(3) Gender distribution of the study revealed more females than males with the dominant age of the respondents was between the ages of 50-59 years. The effects of gender difference are not significant in this study but can be taken into consideration for future research.

(4) The investigation revealed that the factors that influence the use of mobile commerce include perceived word of mouth, perceived trust, perceived risk, perceived usefulness, perceived ease to use, and perceived value of using mobile commerce among the older adults in China.

(5) Finally, perceived risk of using mobile commerce is observed empirically that perceived risk has a robust negative relationship with acceptance, but our findings prove otherwise. Therefore we consider pertinent for future research to go further to investigate focus on this direction and to find the factors that influenced these results, and then a better understanding of this factors can be used to reduce the perceived risk of the users.

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