



A Study on User's Intention of Using Mobile Payments

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Abstract

This research explores how users are influenced to adopt the Mobile payment. The research employs the Technology Acceptance Model (TAM) to examine factors affecting the user's attitude toward this emerging mobile technology and payment service. This study presents an extended technology acceptance model that integrates innovation diffusion theory to investigate what determine user mobile commerce acceptance, in which we explore the relationships among those following factors, namely, perceived ease of use, security, attitude toward using M-payment service and behavior intention to use M-payment.

Keywords: Perceived ease of use; Security; Attitude and Intention to use.

1. Introduction

Imagine a world where you can use your mobile phone to order and pay securely for your movie theatre tickets, for the information you need for your upcoming meeting and your last minute groceries, from the back of a taxi on the way home. And then pay for the taxi when you get there. Imagine a world where offering this service to your customers makes them more loyal, increases their mobile usage, and reduces your costs. Tomorrow, you can

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1.1 Research aim objectives

The aim of this research is to identify and analyze the factors that influence a consumers' intention, to use mobile payment. The research objectives are as follows:

1. Identify the factors that influence customers' intention to use mobile payment
2. To conduct a survey that explores users' perceptions regarding mobile payment service

Research aim understanding the attitude of users using of Mobile payment service and to identify what is perceives need for users perception and regulation. The research aimed to understand user's expectations and requirements mobile payment

2. Literature review

This chapter was reviewed existing literatures relating to mobile payments, M-commerce and investigates mobile with payment service. It also presents the theoretical background for the study and created with the literature review relating to technology acceptance model.

2.1 Mobile Commerce

Mobile commerce is a relevant field associated with mobile devices, that allow users perform transactions anywhere and at any time [7]. However, prior to M-commerce, was Electronic commerce (E-commerce) and it emerged with the development and growth of communication technologies and the internet. Therefore, according to [7], E-commerce can be described as a "selling process on the internet that involves the exchange of goods and services". In another study, [2] argued that e-commerce can be related to all electronically mediated transactions e.g. fac simile, electronic data interchange (EDI), the internet, etc. On the other hand, [6], defined various perspectives of e-commerce as; a communication point of view (whereby information delivery or payment is carried out electronically) business process point of view (involves the application of technology towards the computerization of business transactions), business point of view (has to do with delivering quality service) and the online point of view (making purchases and sales online). More so, m-commerce entails wireless e-commerce, which employs the use of a mobile device to get access to the internet and involves business to users or business to consumers. M-commerce can therefore be described as a subset of e-commerce, and due to the presence of mobile devices, mobile commerce services has a promising prospect.

2.2 Mobile payment acceptance

Changing the way consumers do something, in this case changing their payment methods and habits, can be extremely difficult. In order for consumers to change their payment behaviors the new payment method basically has to be somehow better than the existing ones. There has to be some kind of force or forces that drive consumers to change their payment methods and instruments. This chapter discusses the factors that influence the intention to use mobile payment especially from the consumers' point of view. These factors have to be taken into account in order for consumers to change their existing payment behaviors. Technology

acceptance model (TAM) has been a very significant research model explaining consumers' behavior when adopting new IT [3]. This model suggests that the two most influential factors that affect consumers to adopt new IT are perceived usefulness and perceived ease of use. Many of studies on mobile payment acceptance start with this hypotheses [8].

Many of the factors presented in this chapter are very subjective. This is then dependent on how consumers perceive the factor in question. For example the mobile payment service can be very secure and safe to use from an objective standpoint. However the objective security does not matter if the users' do not perceive it to be secure to use.

2.3 Technology acceptance model (TAM)

[1] while explaining the Theory of Reasoned Action (TRA), that TRA is a framework used to depict user behavior from a social psychology's point of view, while providing a clarification Technology acceptance research is a continuous evolving field, as innovative technology evolves every day, which has motivated information system researchers to develop a number of theoretical framework that attempts to predict the acceptance of a new technology. The technology acceptance model (TAM) which was proposed by [3], is one of such frameworks that has been used for predicting intentions to adopt new innovations. Ideally, a model that is useful not only for prediction but also explanatory is required by researchers, to enable them identify why a system is classified unacceptable, in order to develop corrective measures for that particular system to be acceptable. This research will employ the use of TAM with additional constructs relating to mobile payments, to determine factors that influence a customer's intention to use mobile payment.

2.3.1 Perceived security

Reference [8] Explain "subjective (perceived) security as the degree to which a person believes that using a particular mobile payment procedure would be secure". Reference [10] Found perceived security to have a strong influence on the intention to use mobile payment. In qualitative studies perceived security and the trust towards the service provider in mobile payments and in mobile banking is typically found to be extremely important. Reference [8] Especially in banking, trust is the most important factor affecting customer satisfaction did a large study on the security issues from the consumer's perspective. This study proposes that the real security problem that should be addressed is subjective security.

2.3.2 Perceived ease-of-use

Even if consumers believe that an application or a service is useful for them they may feel that the advantages and benefits of using the application or service is overshadowed by the effort needed to use it [3]. This is why also mobile payment services should be easy-to-use. Consumers' should not be expected to put too much effort in to using a new payment instrument. Perceived ease-of-use has been found to influence significantly on the intention to use mobile payments.

2.3.3 Perceived usefulness.

People tend to use applications and services that they believe will help them somehow to perform their job better – enhance their performance to do different tasks. This is referred as perceived usefulness. Reference [3] Perceived usefulness influences extremely strongly on the intention to use mobile payments

2.3.4 Compatibility

Compatibility is the degree to which the innovation fits with the potential adopter's existing values, previous experiences and current needs [9]. In the context of WAP-enabled mobile phone, a person's lifestyle will strongly influenced his/her decision to adopt the technology. Mobile device must work well with the user's already existing computing environment like for example the possibility to synchronize the mobile device to the user's stationary computer

2.3.5 Attitude to use

According to TAM theory, the actual usage of a specified system will be determined by an individual's intention to use, which is jointly determined by an individual's attitude towards using a system [3]. The attitude is a psychological tendency expressed by evaluating a particular entity in terms of the degree of positive feelings about the technology

2.3.6 Intention to Use

The TAM further postulates that behavioral intention (BI) to use a particular technology is determined by attitude and perceived usefulness. Past studies invariably show that the latter factor has a large impact on intention, either directly or indirectly via attitude. The level of behavioral intention, in turn, determines the likelihood that actual usage (AU) will occur [1, 3]. Intention to use is a measure of the likelihood that a person will adopt the application [3]. Research on TRA and TAM has consistently found strong empirical support for these relationships: attitudes and intentions can accurately explain and predict actual behavior [5]. Several researches have proved the powerful correlation between intention to engage in a behavior and actual behavior

3. The Methodology and Model

This chapter study to test the hypothesis. The source of secondary data and primary data are included with research details. A structured questionnaire was designed to collect data from respondents. The procedures of data collections and analysis were presented. It thus provides a more comprehensive understanding of this research study.

3.1 Summary of Hypothesis

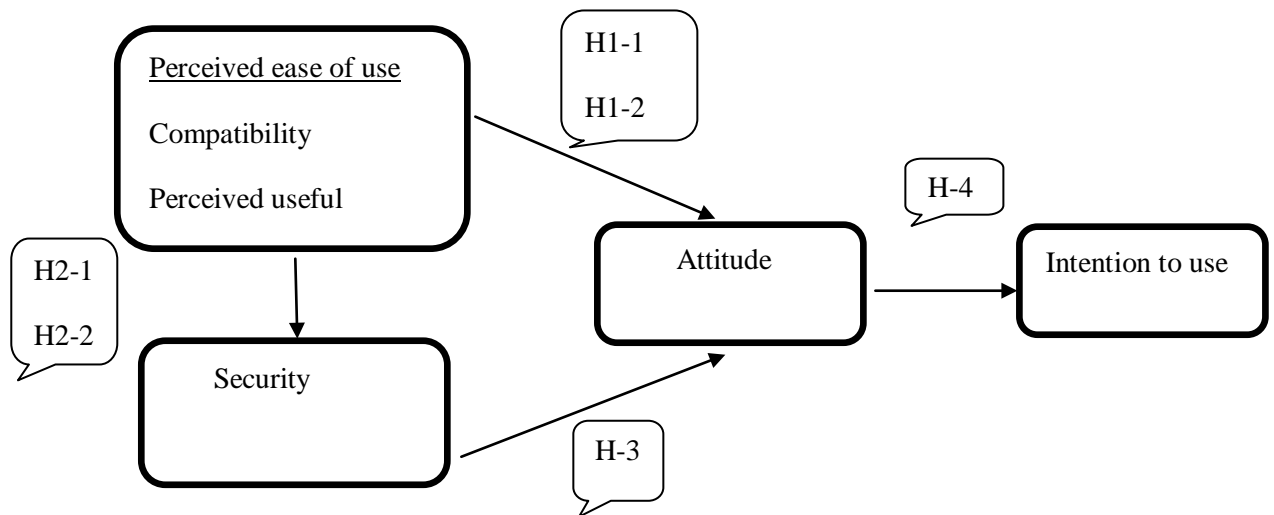
The study focusing on investigate the users intention to use Based on the previous literature review discussed, four hypotheses were developed to test the relationship. These hypotheses focused on the direct effect on user's

intention of perceptions.

The hypothesis proposed as follow:

- **H1** Perceived ease of use is positive contribution to Attitude
- H1-1 Compatibility is positive relation to Attitude
- H2-2 Perceived useful is more positive relation to Attitude
- **H2** Perceived ease of use is positive contribution to security
- H2-1 Compatibility is positive relation to security
- H2-2 Perceived useful is more positive relation to Security
- **H3** Security is positive relation to Attitude
- **H4** Attitude is positive relation to Intention to use

Research framework



4. Findings and Data Analysis

This chapter begins with analysis on demographic data of respondents and then followed by their intention to use m-payment service. It aims to further analyses the collected data from the questionnaires and construct meaningful insights. Hypotheses were tested by factor analysis, reliability test, and multiple regression analysis through SPSS 20.0.

4.1 Data Collection

Questionnaire was not unusable and incomplete responses, only 250 questionnaires were used for analysis, yielding a response rate of 100.0%. All valid data was inputted to SPSS 20.0 for statistical tests and analysis. The demographic profile, users intention were hence interpreted. Data analysis included demographic profile of respondents, descriptive statistics on key variables, reliability test, and factor analysis and regression.

4.2 Demographic Profile of Respondents

Descriptive analysis is used to analyze research result coming from characteristics and information of the sample respondents. It is more comprehensive and easier to interpret the findings in forms of graph and chart computed by SPSS 20.0 in order to represent the demographic, 5 characteristic of respondents were covered.

1. Age
2. Gender
3. Occupation
4. Marital status
5. Income

4.2.1 Age

The largest group was 26-35 years old which constituted 38% (62.4) of the respondents; the second group is 36-45 years old which 26% (24.4) of the respondents belonged to this age group. It is understandable to have the most respondents being 26-35 years old and 36-45 years old as explained previously, the respondents belong to the young generations

4.2.2 Gender

There were 53.6% (134) and 46.4 (116) of the respondents being male and female respectively. The significant gender distribution of female out numbering male can be due to the scope of distribution of the questionnaire. As the questionnaire was distributed through the internet to respondents, where the most of them belong to the existing young generations and employees, therefore a higher proportion of respondents were female

4.2.3 Education

Respondent's education in 6 categories plus other option. The majority of respondent's first big group was others option which means mostlyare (other37%), (master 32%). (Bachelor 22%) and doctorate 7%

4.2.4 Occupation

Respondent's occupation in 5 categories plus other option. The occupation of the respondents ranges from student to others of which the majority of them were others percent 34.4percent. The second most achieved occupation of the respondents was student with 25.6 percent. Tertiary employed, self-employed respondents were 21.2%, 15.2% of total respondents. Unemployed constituted 3.6 % respectively.

4.2.5 Marital status

There were 59.6 percent (149) and 40.4 percent (101) of the respondents single and married respectively. The significant marital status distribution of single outnumbering married can be due to the scope of distribution of the questionnaire. Most of them belong and existing students and employees under 26 years old, therefore

higher proportion of respondents were single.

4.2.6 Income

Terms of income has five categories for the respondents. The highest percentage 31.6% of respondents received under US\$300 monthly income. Followed by US\$ 501-800 accounted for 26%. Tertiary, category is over US\$1001 which had 18.8% of total respondents. The least number of respondents, with 12% and 11.6%, had monthly income above US\$801-1000 and US\$301-500.

The statistics of monthly income is consistent with the education level. When most of respondents are young generation, it is expected that they are not employed or may only have part time job, which explains the low monthly income.

4.3 Descriptive statistics

Table 1: Mean and Standard Deviation

	N	Minimum	maximum	mean	Std Deviation
Perceived ease of use	250	1.00	5.00	4.2440	.79350
Compatibility	250	1.00	5.00	3.9093	.69147
Perceives useful	250	1.00	5.00	3.8480	.77616
Security	250	1.33	6.67	5.1933	.94350
Attitude	250	1.00	5.00	4.2973	.80607
Intention to use	250	2.67	5.00	3.6640	.65518

The above table shows the mean and standard deviation among variables. A broad picture on the variable score all variables scored higher than neutral point of *3* in all table. The higher score indicates that respondents have more positive ratings towards all the intention of using mobile payment.

4.4 Factor analysis

All factors loading are relatively higher than 0.05. Eigenvalue greater than one rule the Eigenvalue of constructs considered acceptable. The percent of total variance explained by factor upon cumulative proportion. More over the Kaiser Meyer Olkini in measure sampling adequacy that exceeds predetermined threshold for factor analysis. Bartlett’s test of Sphercity was significant $p < 0.01$

4.5 Reliability test

All six independent variables Security, Perceived Compatibility, Perceived ease of use, Perceived usefulness, Attitude and Intention to use have reached a value of Cronbach alpha above 0.70 which means a good estimate of internal consistency reliability. The independent variable and dependent variable have proven a high reliability. Since the Cronbach alpha value intention to use 0.904, it has reached a highly acceptable value.

Table 2: Factor loading

Variable	Questionnaire items	Factor loading	Eigen value	Cumulative proportion	KMO	Chi Square	P-value
1 Security	Security 1	0.900	2.069	68.968	0.628	226.563	0.000
	Security 2	0.795					
	Security 3	0.792					
2 Perceived ease of use	PEU 1	0.714	4.746	68.178	0.860	1266.814	0.000
	PEU2	0.770					
	PEU3	0.674					
	COMPA1	0.789					
	COMAP 2	0.847					
	COMPA 3	0.830					
	PU1	0.815					
	PU2	0.824					
	PU3	0.837					
3 Attitude	ATT1	0.870	2.958	73.941	0.790	540.040	0.000
	ATT2	0.850					
	ATT3	0.856					
	ATT4	0.864					
4 Intention to use	ITU1	0.901	2.516	83.853	0.747	480.269	0.000
	ITU2	0.916					
	ITU3	0.930					

Table 3: Summary of Reliability test

Dimension	Cronbach alpha	Cronbach alpha based on Standardized items	N of items
Security	.764	.764	3
Perceived ease of use	.598	.609	3
• Compatibility	.885	.885	3
• Perceived useful	.854	.856	3
Attitude	.881	.882	4
Intention to use	.902	.904	3

4.6 Regression Analysis

4.6.1 Regression analysis on Perceived ease of use

Multiple regression analysis was employed to examine the relationship between independent variables: The six variables in perception of attitude and intention to use through this analysis, computation on the degree of correlation between the independent and dependent variables were conducted. The summary result of multiple regression analysis is shown below

Table 4: Model summary of Regression model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.631 ^a	.399	.396	.73314	.399	164.385	1	248	.000
2	.642 ^b	.412	.408	.72610	.014	5.833	1	247	.016
A. Predictors: (constant), compatibility									
B. Predictors: (constant), compatibility, perceived useful									
C. Dependent variable: attitude									

Table 4-4 shows the reports the model summary, with the calculated value of R²=0.399 confirming that the three main factors, namely Compatibility, and perceived useful reaching significant level explain 40% of the variation in the level perceived ease of use attributes of the sample. This means that two variables together explain about 40% of the variance. It indicates a modest fit of regression model.

Table 5: ANOVA test on Perceived ease of use

Anova ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	88.357	1	88.357	164.385	.000 ^b
	Residual	133.299	248	.537		
	Total	221.656	249			
2	Regression	91.432	2	45.716	86.711	.000 ^c
	Residual	130.224	247	.527		
	Total	221.656	249			
A. Dependent variable: attitude						
B. Predictors: (constant), compatibility						
C. Predictors: (constant), compatibility, perceived useful						

This section shows the P value (sig for significance) of the predictor’s effect on criterion variable. P values less than .05 are generally considered statistically significant from table F-test suggest the casual relationship between the two perceptions of perceived ease of use and attitude was significant, with a significant level.

Table 6: Coefficient on perceives ease of use

coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.240	.235		9.534	.000	1.777	2.703
	Compatibility	.767	.060	.631	12.821	.000	.650	.885
2	(Constant)	1.875	.278		6.755	.000	1.328	2.421
	Compatibility	.683	.069	.562	9.929	.000	.548	.819
	Perceived useful	.163	.067	.137	2.415	.016	.030	.295
A. Dependent variable: attitude								

The table 4-6 shows the result of the ordinary least squares multiple linear regression analysis indicating unstandardized coefficient (B) standard, errors, standardized regression coefficient (beta) and T statistic

The P values of all two variables are less than the alpha values of 0.05. Therefore the research concludes that all the two variables are positively related to attitude. All the hypotheses (H1-1), (H1-2) proposed previously supported.

4.6.2 Regression analysis on Security

Table 7: Model summary table of multiple regression model

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.339 ^a	.115	.108	.61891	.115	16.020	2	247	.000
a. Predictors: (Constant), Perceived useful, compatibility									
b. Dependent Variable: security									

In this table shows that the R squared is 11.5. This means that two variables together explain about 11.5% of the variance. It indicates a modest fit of regression model.

Table 8: ANOVA test on Security

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.273	2	6.136	16.020	.000 ^b
	Residual	94.614	247	.383		
	Total	106.887	249			
a. Dependent Variable: security						
b. Predictors: (Constant), Perceived useful, compatibility						

This section shows the P value (sig fir significance) of the predictors on effect on criterion variable. P values less than .05 are generally considered statistically significant. From the table F-suggest the casual relationship between the two perceptions perceived ease of use and security was significant, with a significant level of 0.000 achieved (Howell, 1992).

From the table 4-9 the P value of T-test for each regression coefficient compatibility is 0.000 respectively, the P values of this independent variable is less than the alpha value 0.005. Therefore the research concludes that independent variable is positively related to security it means H2-1 is supported. Perceived useful is 0.282 which is higher than 0.05. This predictor was not proved with significant it is concluded that significant linear relationship does not exist between independent predictor and dependent outcome. Therefore H2-2 has rejected.

Table 9: Coefficient on Security

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.445	.237		10.333	.000	1.979	2.910
	Compatibility	.249	.059	.295	4.241	.000	.133	.364
	Perceived useful	.062	.057	.075	1.078	.282	-.051	.175

a. Dependent Variable: security

4.6.3 Regression analysis on Attitude

Table 10: Model summary table of multiple regression model

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig.	F Change
1	.324 ^a	.105	.101	.89456	.105	28.989	1	248	.000	

a. Predictors: (Constant), security

b. Dependent Variable: attitude

The table 4-10 reports the model summary, with the calculated value of R²=0.105 confirming that factors named security reaching level explain 11% of the variation in the level. It indicates a modest fit of regression model.

Table11: ANOVA test on Attitude

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.198	1	23.198	28.989	.000 ^b
	Residual	198.457	248	.800		
	Total	221.656	249			

a. Dependent Variable: attitude

b. Predictors: (Constant), security

This section shows P value (sig for significance) of the predictor’s effect on criterion variable. P values less than

.05 are generally considered statistically significant from F-test suggest the casual relationship between the security and attitude was significant, with a significant level.

Table 12: Coefficient on Attitude

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	Constant	3.486	.322		10.826	.000	2.852	4.121
	security	.466	.087	.324	5.384	.000	.295	.636
a. Dependent Variable: attitude								

The P values this independent variable is less than the alpha 0.005. Therefore the research concludes that independent variable is positively related to attitude

4.6.4 Regression analysis on Intention to use

Table13: Model summary table of multiple regression model

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. Change	F
1	.456 ^a	.208	.204	.71896	.208	64.997	1	248	.000	
a. Predictors: (Constant), attitude										
b. Dependent Variable: Intention to use										

Table 4-13 reports the model summary with the calculated value of R²=0.208 confirming that main factor attitude reaching significant level explain 20.8% of the variation in the level of attitude if the sample. This means this variable can be explain about 20.8 % of the variance. It indicates a modest fit of regression model.

This section shows the P value (sig for significance) of the predictor’s effect on the criterion variable P values less than .05 is generally considered statistically significant from table F-suggest the casual relationship between the perception of attitude and intention to use was significant, with a significant level.

The P-values this independent variable is less than the alpha 0.005. Therefore the research concludes that independent variable is positively related to intention to use.

Table 14: ANOVA test on intention to use

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.597	1	33.597	64.997	.000 ^b
	Residual	128.190	248	.517		
	Total	161.787	249			
a. Dependent Variable: Intention to use						
b. Predictors: (Constant), attitude						

Table15: Coefficient on intention to use

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.275	.255		8.928	.000	1.773	2.777
	Attitude	.389	.048	.456	8.062	.000	.294	.484
a. Dependent Variable: Intention to use								

Table 16: Findings of Summaries H1, H2.H3 and H4

H1.Perceived ease of has positive contribution to Attitude	Supported
• H1-1: compatibility has more positive relation to Attitude	Supported(Sig 0.000)
• H1-2: Perceived useful has positive relation to Attitude	Supported(sig 0.016)
H2 Perceived ease of use has positive contribution to Security	Supported
• H2-1: Compatibility has more positive relation to Security	Supported (Sig 0.000)
• H2-2: Perceived useful is negative relation to Security	Rejected (Sig 0.282)
H3 Security has positive relation to Attitude	Supported (Sig 0.000)
H4 Attitude has more positive relation to Intention to use	Supported (Sig 0.000)

5. Conclusions and discussions

The purpose of this article has been to explore factors that influence the intention of users to effect mobile payment. For this purpose a simple model based on technology acceptance model was developed and measured. The research results significantly verified the hypothesis between perceived usefulness, and perceived ease of use, security and compatibility to Attitude and Intention to use M-payment. First, this study successfully applied the TAM. Consistent with previous studies, security and perceived ease of use were found to be significant antecedents of the attitude to use mobile payment service. Therefore, the managers should design the M-payment interface.

5.1 Factors that influences customers intent to useful

This study found a significant direct relationship between security and intention to use M-payment. The results of our research also entail important practical implications. By identifying the major driver for M-payment adoption, our results can help managers to prioritize their M-commerce initiatives and to allocate resources accordingly. For instance, potential adopters of M-payment service are highly sensitive to the issues of security. The major security-based concerns may include privacy protection, accuracy to declaration, and unauthorized access and so on. Such results imply that M-payment providers need to protect users' privacy and account for such factors in developing their marketing strategy.

5.2 To conduct a survey that explores user's perceptions regarding mobile payment service

Perceived Attitude was also found to be significant antecedents of intention to use M-payment. Measures of perceived ease of use was developed and tested. These measures not only represent specific instruments that can be used to assess perceived knowledge and financial resources, but can also be used by researchers and practitioners to determine which areas represent potential leverage points to increase intention to use M-payment. The significant impacts for Attitude on intention to use Mobile payment indicate that customer' attitude towards to use should be seriously considered in promoting them to use M- commerce. Such relationships are also consistent with numerous studies in information system usage.

"Provides the most influential source of efficacy information because it can be based on authentic mastery experiences". When people feel they are capable of using Mobile payment, they will tend to prefer and even enjoy behaviors if they feel they can successfully master. Furthermore, training customer how to use M-payment would make them aware of the valuable information and advantages exit in the process of using M-payment and show them how to access that information quickly and efficiently

The last but the least important finding is the insignificant effect of PU on Attitude M- commerce. Once use perceived the usefulness, they have a positive attitude toward using the M-payment; however it does not mean that they will have the intention to use this service.

6. Recommendation and suggestion

6.1 Limitations

Even though this research has drawn intellectually and practically meaningful implications, results of this study must be interpreted in the context of its limitations. One of the limitations of the study is firstly that the scope of this study was limited by its population frame; this study is in the areas of sampling and non-response bias. In this study, the questionnaires were randomly delivered to habitants, who were using mobile application. Probably lacking the diversity that can be expected from a comparable sample chosen from across an entire country.

6.2 Suggestion and Further studies

Although our findings strongly support the proposed model, there is still room for improvement and further investigation. Our study should be replicated in different contexts for further validation and exploration of possible moderating effects. Also the current research focuses on B2C M-payment that may involve different factors from those of B2B M-payment. In the B2B M-payment context, organizational theories may be necessary to be incorporated to understand adoption behavior. Future research should also follow a longitudinal approach and investigate the relationship perceives useful and actual behavior. Moreover, as we explained above, the users might refer to the others' opinions; therefore, the further research might study on the Further research can use different methodologies, such as focus groups and interviews to examine the applicability of the research model adopted in this study. Furthermore, in future, we can try to put "perceived cost" like a main factors for decisions of customers in using M-payment services.

References

- [1] Ajzen, I. And Fishbein M (1975) *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- [2] Chaffey Dave *E-business and E-commerce management* 3rd edition Prentice Hall: Financial Times Press, UK (2006) pp, 663.
- [3] Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS Quarterly*, Vol. 13, No. 3.
- [4] Dahlberg, T., Mallat, N., Ondrus, J. &Zmijewska, A. (2008). Past, present and Future of Mobile Payments Research: A Literature Review, *Electronic Commerce Research and Application*, Volume 7, Iss 2, pp. 165-181.
- [5] Heijden02,(2002) June, Heijden, H. vans der., "Factors affecting the successful introduction of mobile payments systems," *Proceeding of the Fifteenth International Bled Electronic CommerceConference*, Bled, Slovenia.

- [6] Kalakota and Whinstone, a (1997). *Electronic commerce: A managers guide* London.
- [7] Schwiderski-Grosche, S. and H. Knospe (2002): *Secure Mobile Commerce*. In C.J. Mitchell (editor), *Security for Mobility*, Special issue of the IEE Electronics and Communication Engineering Journal, Volume 14, Number 5, pp. 228-238.
- [8] Pousttchi, K., Schurig, M. (2004), *Assessment of today's mobile banking applications from the view of customer requirements*, Proceedings of the 37th Hawaii International Conference on System Sciences, Big Island, Hawaii.
- [9] Rogers, E. (1983). *Diffusion of Innovations*. The Free Press, London.
- [10] Schierz, P. G., Schilke, O., &Wirtz, B. W. (2010). *Understanding consumer acceptance of mobile payment services: An empirical analysis*. *Electronic Commerce Research and Applications*, 9(3), 209-216. doi: DOI: 10.1016/j.elerap.2009.07.005.