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## Determinants of Mobile Commerce Customer Loyalty in Malaysia

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### Abstract

Asia's emerging markets are poised for explosive digital growth. With the rapid adoption of the Internet and the familiarisation of consumers with mobile devices, the mobile commerce market is set to become one of the most promising and lucrative growth markets. In Malaysia, although the mobile commerce market is relatively at its infancy stage, the mobile internet penetration is expected to grow rapidly in years to come. Numerous mobile commerce adoption studies have been investigated. However, little attention has been paid on what factors could be utilised to retain mobile commerce customers, which could in turn improve business performance. Therefore, this paper aims to bridge the gap by investigating the factors that affect mobile commerce customer loyalty in Malaysia by incorporating e-service quality models and relationship quality theories in the context of mobile commerce. Specifically, the objective of this study is to examine the relationships between e-service quality dimensions of efficiency, system availability, fulfilment and privacy, and relationship quality dimensions of satisfaction, trust and commitment with customer loyalty in mobile commerce services. Online survey method was used for data collection. Out of the 300 questionnaires distributed, 214 were completed and returned, yielding a response rate of 71.3 percent. Data were subsequently analysed using the Structural Equation Modelling (SEM) method. The research findings contributed significantly in filling up the knowledge gap regarding the determinants of customer loyalty in mobile commerce services. The study may assist mobile commerce service providers, marketers and managers in their decision making as well as improving their profitability, products and services.

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## 1. Introduction

Driven by iPhone and other smartphones which can access the Internet easily, mobile phone revolution is on its way. Mobile devices have surpassed being just a utility-based communication tool (Chong et al., 2012). Current technology has enabled downloading of mobile applications to be used as productivity tools, social-networking programs, or just simply for games. Telecommunication companies are hastily building network infrastructure that allows wider coverage and faster connection in order to foster mobile commerce development. The present development of mobile commerce or, more commonly known as m-commerce, offers more pervasive accessibility to users compared to e-commerce (Wei et al., 2009). Eventually, m-commerce migrates and enhances online transaction from wired to wireless (Schwiderski-Grosche & Knospe, 2002). Furthermore, mobile devices are smaller and more convenient to carry (Schwiderski-Grosche & Knospe, 2002). Given these conveniences, m-commerce has further evoked and enhanced e-commerce activities without the restrictions of time and place.

Researchers have adopted some broad definitions of m-commerce since its emergence, for example, Keen et al. (2001) defined m-commerce as an extension of e-commerce from wired (fixed location) to wireless (could be accessed anywhere and anytime). Some researchers have simplified m-commerce as a “wireless electronic form of e-commerce” or just an additional innovative paradigm emerged somewhere within e-commerce (Feng et al., 2006). Tiwari & Buse (2007) commented on the inappropriateness in defining m-commerce as the “transaction of monetary value” as it ignores the natural measurement of commercial or business and after-sales services. For instance, some completion of m-commerce might not be cost-oriented like free downloading software, application, or music sharing. In this study, we follow the discussion and definition of m-commerce synthesized by Wei et al. (2009). M-commerce is defined as “any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobiles access to computer-mediated networks with the help of mobile devices”.

Indeed, m-commerce has become increasingly important in today’s business environment. With the rapid adoption of the Internet and the familiarization of consumers with mobile devices, m-commerce market is set to become one of the most promising and lucrative growth markets (Kim et al., 2007). In Malaysia, although m-commerce is relatively in its infancy stage (Wei et al., 2009), the m-commerce market is expected to grow rapidly by 59.6% in 2015 (Wong, 2014). The increase of the m-commerce market size in Malaysia is driven by the high mobile phone penetration rate in the country. With government support, m-commerce in Malaysia has a very promising future and is set to be the engine of growth worldwide (Goi, 2008).

With the growth in m-commerce, the competitions among m-commerce retailers are also growing intensively. Retaining customers has become an issue for online retailers as it is more expensive for them to attract new customers as compared to the brick-and-mortar stores (Luarn & Lin, 2003). In addition, customer loyalty is important as it would strongly impact the profits and long-term growth of a company (Reichheld & Scheffer, 2000). A little increase in customer loyalty rate can boost up a company’s profit (Eid, 2011). In short, the success of m-commerce depends on customer loyalty to m-commerce retailers (Lin & Wang, 2006). Therefore, it is necessary for m-commerce retailers to maintain long-term relationship with their customers in the m-commerce environment (Kim, 2010).

The importance of customer loyalty has been recognized in marketing literature for many years. However, the empirical validation for m-commerce customer loyalty has not been addressed extensively (Lin & Wang, 2006). Based on the review of past studies, most of the studies have examined the factors that influence the adoption of m-commerce (Lai & Lai, 2014; Chung, 2014; Zhang et al., 2012; Chong et al., 2012; Wei et al., 2009). Although examining the user behavioral intention towards the adoption of a technology is common, it is also important to understand the customer retention in m-commerce context (Chong, 2013). Therefore, this paper aims to bridge the gap by investigating the factors that influence m-commerce customer loyalty in Malaysia by integrating service quality and relationship quality constructs.

## 2. Literature review

Researchers use different theoretical foundations to study customer loyalty. These include relationship marketing theories such as Morgan and Hunt's (1994) commitment trust theory, Oliver's (1997, 1999) satisfaction and loyalty

models, and the quality-satisfaction-loyalty chain (Anderson & Mittal, 2000; Oliver, 1997). This combination of theories and orientations suggests various ways of approaching customer loyalty. In a virtual context, many researchers analysed the effect of relational variables (e.g., satisfaction, trust, commitment) on online loyalty (Toufaily et al., 2012). Although relationship marketing theories provide researchers with a good starting point in understanding online customer loyalty, researchers should develop a unique theoretical body that is specific to loyalty in the context of m-commerce and that takes into account the technological component.

In view of this, it is worth analysing the properties of the loyalty instruments with one of the well-known conceptual influence, namely that of Zeithaml et al. (1996). Zeithaml et al. (1996) offered a conceptual model of the impact of service quality on particular behaviours that signalled whether customers remain with or defect from a company (loyalty or disloyalty). Their analysis signified the crucial role of satisfaction as an antecedent of loyalty, as satisfaction is based on certain expectations for service quality that, when met, produce satisfaction and, eventually, loyalty.

In a later study, Roberts et al. (2003) adapted Zeithaml et al.'s (1996) framework to measure the quality of relationships in consumer services. While there is a widespread belief in the services literature that service quality leads to relationship quality, Roberts et al. (2003) argue that there is still much to learn about the nature of the causal relationships between these constructs in consumer services. In an effort to address this issue, they examined the interplay between these constructs in various offline service settings. Their research provides evidence in support of the chain of impact, with the effect of service quality on loyalty completely mediated by relationship quality. That is, service quality has no independent effect on customer loyalty but only works through relationship quality to impact customer loyalty.

Service quality and relationship quality has also been posited by a number of earlier scholars as significant variables in the study of customer loyalty (Crosby et al., 1990; Storbacka et al., 1994). Crosby et al. (1990) asserted that relationship quality in voluntary service relationships is the main driver of a customer's future purchase intentions. After exploring the association between service quality and relationship quality, Crosby et al. (1990) concluded that quality service encounters are necessary for the development of relationship quality and the retention of customers. Storbacka et al. (1994) referred to this as the "chain of impact" - whereby service quality affects satisfaction which, in turn, affects customer loyalty.

Although the application of customer relationship management in the offline channel has demonstrated that relationship quality provides additional explanatory power over service quality alone in the development of customer loyalty, the specific nature of the interactions between these constructs in the online services setting has yet to be empirically tested (Keating et al., 2010). In response, the present study attempts to clarify the nature of the interaction among service quality, relationship quality, and customer loyalty by examining these constructs in another context - mobile services. Roberts et al. (2003) specifically assert that "technology" and "mode of contact" are likely to impact on the consumer relationship with the firm, and that this needs to be investigated.

Service quality, a key concept in service management, has evolved from the traditional context to an e-commerce context. In an electronic setting, service quality is defined as the consumers' overall judgment of the excellence and the quality of electronic service offerings in the virtual market place (Santos, 2003). In addition, Gummerus et al. (2004) defined service quality as the consumer's evaluation of process and outcome quality of the interaction with a service provider's electronic channels. This definition refers to electronic channels, in general, and includes a broad range of online services. There are numerous academic researches on the measurement of service quality in electronic setting. For example, Zeithaml et al.'s (2000) e-SQ model, which divides electronic service quality into 11 dimensions, covers a broad range of quality aspects. The dimensions include ease of navigation, site aesthetics, efficiency, flexibility, access, responsiveness, reliability, customisation/personalisation, security/privacy, assurance/trust and price knowledge. Subsequently, Zeithaml et al. (2002) summarized their previous work into five main dimensions - information availability and content, ease of use, privacy/security, graphic style and fulfilment/reliability. In relation to Zeithaml's (2000, 2002) studies, seven e-SQ dimensions were developed by Parasuraman et al. (2005) to measure perceived consumer electronic service quality. The dimensions consist of four dimensions of E-S-QUAL (efficiency, system availability, fulfilment, and privacy) and three dimensions of E-RecS-QUAL (responsiveness, compensation, and contact). In this research, we adopted the E-S-QUAL dimensions (efficiency, system availability, fulfilment, and privacy) to determine the quality of m-commerce services. The E-S-

QUAL model has been proven effective in capturing the core e-service quality since it has been to a certain extent successfully replicated and applied in many countries and in a variety of e-service setting (Yaya et al., 2012).

On the other hand, relationship quality is an important concept emerging from relationship marketing studies (Athanasopoulou, 2009). According to Gummesson (2002), the quality of relationship is important as a measurement of a successful business relationship. High relationship quality is important in situations where customers face uncertainties, intangibility and lack of familiarity (Crosby et al., 1990). Relationship quality is defined as an overall assessment of the strength of a relationship and the extent to which it meets the needs and expectations of the parties based on a history of successful or unsuccessful encounters or events (Smith, 1998). It is conceptualized as combined or multidimensional construct capturing the different but related components of relationship (Palmatier et al., 2006). Numerous relationship quality dimensions have been proposed. However, the dimensions of satisfaction, trust and commitment were the most common variables researched in relationship marketing studies (Dwyer et al., 1987; Anderson & Narus, 1990; Morgan & Hunt, 1994). These dimensions were also relevant in an e-commerce context (Rafiq et al., 2012; Walsh et al., 2010). Therefore, this research proposed that these common variables of satisfaction, trust and commitment to be adopted in the context of m-commerce.

Customer loyalty, as discusses earlier, is an important outcome of customer relationship management. Traditionally, it has been defined as a strong commitment to re-purchase a product or service consistently in future even when there are some marketing efforts to cause switching behaviour (Oliver, 1999). As e-commerce becomes important in the current business environment, it is also crucial for businesses to define loyalty in an online environment. Based on review of past online loyalty definitions, we adopted Pearson's (1996) definition for its generality and broadness. Therefore, m-commerce customer loyalty is defined as the mindset of consumers with favourable attitudes toward the m-commerce service provider, who are committed to repurchase as well as recommend to others their product/services.

Based on the above, we proposed the following research model (Figure 1) for our study. This model combines the E-S-QUAL model of service quality with the three dimensions of relationship quality to investigate the factors that affect m-commerce customer loyalty. The following hypotheses have then been developed:

- H1: There is a positive significant relationship between efficiency and satisfaction in m-commerce.  
 H2: There is a positive significant relationship between system availability and satisfaction in m-commerce.  
 H3: There is a positive significant relationship between fulfilment and satisfaction in m-commerce.  
 H4: There is a positive significant relationship between privacy and satisfaction in m-commerce.  
 H5: There is a positive significant relationship between satisfaction and trust in m-commerce.  
 H6: There is a positive significant relationship between satisfaction and commitment in m-commerce.  
 H7: There is a positive significant relationship between trust and commitment in m-commerce.  
 H8: There is a positive significant relationship between satisfaction and loyalty in m-commerce.  
 H9: There is a positive significant relationship between trust and loyalty in m-commerce.  
 H10: There is a positive significant relationship between commitment and loyalty in m-commerce.

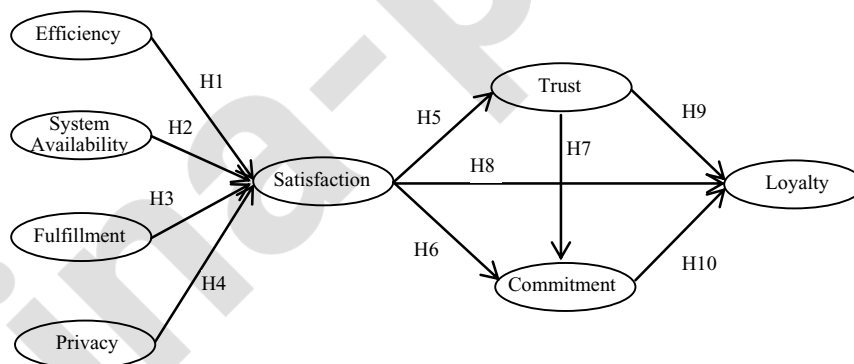


Fig. 1. Proposed research model

### 3. Methodology

The Online survey method was used for data collection. The target respondents for this study were individuals in Malaysia who have used m-commerce services. This research used a convenient sampling technique. A sample size of 300 online questionnaires was e-mailed to friends, family members and colleagues of the researchers. Non-respondents were sent a reminder e-mail one week after the first e-mail. The respondents hail from the different states of Malaysia, with different age groups and levels of education. Therefore, the results from this research study can be generalized to represent Malaysian in general. Out of the 300 questionnaires distributed, 214 were completed and returned, yielding a response rate of 71.3 percent.

A pre-test was performed which involved 20 lecturers who are familiar in marketing and information system areas to access the survey's items sequences and contextual relevance. Feedbacks were collected and solicited to improve the overall design and understanding of the items in the questionnaires.

In order to ensure content validity of the measurements, the items were adapted from prior researches (Luarn & Lin, 2005). A total of 40 survey items for 8 dimensions in the questionnaire came from prior empirical studies, and were modified to fit the context of mobile commerce. Responses to the statements were measured by a five-point Likert scale: "1" denoted as strongly disagree, "2" denoted as disagree, "3" denoted as neutral, "4" as agree, and "5" as strongly agree.

Data were subsequently analyzed using the Structural Equation Modelling (SEM) method. SEM is particularly useful in this research because it can estimate "a series of separate, but interdependent, multiple regression equations simultaneously" in a specified structural model (Hair et al., 2010). Therefore, SEM is the most suitable analysis to estimate the strength of the relationships between the constructs identified.

### 4. Findings and discussion

The reliability of the independent variables and dependent variable were tested using Cronbach's alpha measurement. Table 1 below displays the reliability coefficients ranged from 0.897 to 0.920. According the Hair et al. (2010), the reliability coefficient of variables are acceptable if the Cronbach's alpha is greater than 0.70. In this study, the reliability coefficient of all the variables are within the acceptable range as they are above 0.70, which concurs with the suggestion made by Nunnally (1978).

Table 1. Scale reliabilities.

| Variables           | Reliability<br>(Cronbach's $\alpha$ ) |
|---------------------|---------------------------------------|
| Efficiency          | 0.920                                 |
| System availability | 0.906                                 |
| Fulfilment          | 0.897                                 |
| Privacy             | 0.910                                 |
| Satisfaction        | 0.900                                 |
| Trust               | 0.898                                 |
| Commitment          | 0.907                                 |
| Loyalty             | 0.901                                 |

As shown in Table 2, the fit indices of the structural model met all the requirements for a good fit. The normed chi-square (1.465) of the model is less than 3.00, CFI (0.951) is more than 0.90, NFI (0.901) is more than 0.90 and RMSEA (0.047) is less than 0.07. Since fit indices of the model showed a good fit with the data collected, hence the model is accepted and is deemed to be a fit model (Byrne, 2010).

Table 2. Fit indices for structural model.

| Fit Indices                       | Values of Fit Indices for Proposed Model | Desired Values for Good Fit |
|-----------------------------------|--|-----------------------------|
| Relative $\chi^2$ ( $\chi^2/df$ ) | 528.911/361=1.465                        | $\leq 3.00$                 |
| CFI                               | 0.951                                    | $\geq 0.90$                 |
| NFI                               | 0.901                                    | $\geq 0.90$                 |
| RMSEA                             | 0.047                                    | $< 0.07$                    |



Subsequently, hypotheses 1 to 10 were examined to investigate the relationships between the constructs of the hypothesized model. The strength of the relationships among the constructs was represented by the respective standardized path coefficient ( $\beta$ ). Following Cohen's (1988) recommendations, standardized path coefficient with absolute values of less than 0.10 may indicate "small" effect; values of around 0.30 a "medium" effect; and "large" effects may be suggested by coefficients with absolute value of 0.50 or more. The results shown in Table 3 provide support for all the ten hypotheses. Efficiency, system availability, fulfilment and privacy have a positive significant relationship with satisfaction (H1  $\beta = 0.54$ ,  $p < 0.001$ ; H2  $\beta = 0.16$ ,  $p < 0.05$ ; H3  $\beta = 0.15$ ,  $p < 0.05$ ; H4  $\beta = 0.17$ ,  $p = 0.001$ ). Satisfaction has a positive significant relationship with trust, commitment and loyalty (H5  $\beta = 0.86$ ,  $p < 0.001$ ; H6  $\beta = 0.53$ ,  $p < 0.001$ ; H8  $\beta = 0.36$ ,  $p < 0.05$ ). Trust has a positive significant relationship with commitment (H7  $\beta = 0.33$ ,  $p < 0.01$ ). Trust and commitment have a positive significant relationship with loyalty (H9  $\beta = 0.26$ ,  $p < 0.05$ ; H10  $\beta = 0.36$ ,  $p < 0.001$ ).

Table 3. Results of hypotheses testing.

| Path  | $\beta$ | P    |
|---|---------|------|
| H1 Efficiency $\rightarrow$ Satisfaction          | .544    | ***  |
| H2 System availability $\rightarrow$ Satisfaction | .165    | .033 |
| H3 Fulfilment $\rightarrow$ Satisfaction          | .146    | .044 |
| H4 Privacy $\rightarrow$ Satisfaction             | .170    | .001 |
| H5 Satisfaction $\rightarrow$ Trust               | .863    | ***  |
| H6 Satisfaction $\rightarrow$ Commitment          | .528    | ***  |
| H7 Trust $\rightarrow$ Commitment                 | .327    | .003 |
| H8 Satisfaction $\rightarrow$ Loyalty             | .355    | .011 |
| H9 Trust $\rightarrow$ Loyalty                    | .260    | .016 |
| H10 Commitment $\rightarrow$ Loyalty              | .360    | ***  |

Note: \*\*\*  $p < 0.001$

As expected, the E-S-QUAL dimensions of efficiency, system availability, fulfilment, and privacy are found to have significant relationship with satisfaction. Interestingly, efficiency has the strongest effect on satisfaction than the other factors do ( $\beta = 0.544$ ). Previous research indicated that efficiency is not a strong influencing factor for satisfaction (Zafar et al., 2011). However, in an m-commerce context, the way customers perceive mobile phones as a tool to connect efficiently will affect customer satisfaction (Cho, 2009). Therefore, it is important for m-commerce retailers to focus on the ease and speed of accessing and using the mobile website. Subsequently, privacy ranked second in influencing satisfaction. Our findings are consistent with Wolfinbarger & Gilly (2003) and Szymanski & Hise (2000) studies, which proved that privacy is an important factor that has significant relationship with satisfaction. In an m-commerce context, customers evaluate privacy based on what they see on the mobile website. Therefore, m-commerce retailers should make their privacy and security policies visible and clear to customers on the mobile website.

Satisfaction, trust and commitment are found to have a significant relationship with loyalty. The results are consistent with Lin & Wang (2006), Wang & Liao (2007) and Choi et al. (2008) m-commerce studies, where customer loyalty was found to be directly and indirectly influenced by satisfaction. Therefore, m-commerce retailers should build their customer loyalty through providing satisfying m-commerce services. In relation to trust, most of the researchers agreed that trusting beliefs affect loyalty directly (Kim & Benbasat, 2003). In m-commerce context, Lin & Wang (2006) found that trust would lead to customer loyalty. Customers would not use the m-commerce services if they find that the service provided is not trustworthy (Chong, 2013). Therefore, m-commerce retailers should increase their customers' level of trust to build customer loyalty.

Interestingly, commitment has a stronger effect on customer loyalty ( $\beta = 0.360$ ) than satisfaction ( $\beta = 0.355$ ) and trust ( $\beta = 0.260$ ). Commitment is one of the main driving forces to retain customers (Gustafsson et al., 2005). Garbarino & Johnson (1999) found that commitment is expressively related to future intention. In the same way, commitment was used to predict the continuity of the relationship (Palmatier et al., 2006). In an online shopping context, Park & Kim (2003) established that customer commitment would lead to repurchase behaviour. Many previous studies in m-commerce have focused on relationship between satisfaction, trust and loyalty (Lin & Wang, 2006; Choi et al., 2008). However, although commitment is an important component of relationship quality, to the best of our knowledge, there has been no research done on the relationship between commitment and loyalty in m-commerce context. Therefore, it can be somewhat meaningful to identify the relationship between commitment and loyalty in m-commerce context.

Our findings also revealed that satisfaction has a stronger effect on trust ( $\beta = 0.863$ ) than commitment ( $\beta = 0.528$ ). Trust has a stronger effect on commitment ( $\beta = 0.327$ ) than loyalty ( $\beta = 0.260$ ). Commitment has a stronger effect on loyalty ( $\beta = 0.360$ ) than trust ( $\beta = 0.260$ ) does. This implies that customer satisfaction provides a starting point and it is supported by customer's desire to have a personal relationship with the service provider. When customers are satisfied with the m-commerce services, the levels of trust and commitment are higher. The higher the levels of trust and commitment, the more loyal are the customers. Thus, m-commerce retailers should focus on increasing customer satisfaction by improving service quality. This would lead to increased trust and commitment, and finally building customer loyalty.

There are several limitations in this research study. First, this research was conducted in Malaysia. The results may not be generalized and may be inapplicable to other countries. Since the usage of mobile technology varies across countries with different perceptions, researchers may want to further research on multi-countries to gain better generalizations in future studies. Also, the role of culture could be investigated to add further depth to the research. Second, as with previous customer loyalty studies, the factors selected may not cover all the reasons that could influence m-commerce customer loyalty in Malaysia. Future studies can consider other factors such as perceived value and enjoyment. Third, our study only looks at the relationship between service quality and satisfaction. Future research efforts could develop and test possible relationship between service quality and trust; relationship between service quality and commitment; and relationship between service quality and loyalty.

## 5. Conclusion

In conclusion, the findings of this study revealed that efficiency, system availability, fulfillment, privacy, satisfaction, trust and commitment are the factors that influence m-commerce customer loyalty in Malaysia, directly or indirectly. Interestingly, efficiency has the strongest influence on satisfaction, which in turn affects customer loyalty. Also, commitment has a stronger influence on customer loyalty than satisfaction and trust. This study contributes to customer loyalty research stream by integrating service quality and relationship quality constructs in the context of m-commerce. In addition, this research provides valuable knowledge and information to m-commerce retailers and service providers to build m-commerce customer loyalty in Malaysia.

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