



Factors Affecting Customers' Intention to Use Mobile Payment Services in the Retailing Industry

Jin Yang, Garry Wei-Han Tan, Keng-Boon Ooi, Voon-Hsien Lee
and Xiu-Ming Loh

EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.

June 6, 2021

Factors Affecting Customers' Intention to Use Mobile Payment Services in the Retailing Industry

Yang Jin¹, Garry Tan Wei Han¹, Ooi Keng Boon¹, Lee Voon Hsien², Loh Xiu Ming².

¹ UCSI University, 56000 Cheras, Malaysia

² Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia

Abstract. Recently, mobile payment services are becoming more and more popular. However, compared to other parts of the world, Malaysia's mobile payment services are still in the infancy stages. Hence, this study looks to study the variables that impact Malaysian customers' intention to adopt mobile payment services in the retailing industry. In achieving this objective, a conceptual model was developed via an integration of the Information System Success Model and Trust Transfer Theory. An online survey was conducted that yielded 359 usable responses for this study which was subsequently analyzed using PLS-SEM. The results show that customer satisfaction and trust in mobile payment have a significant relationship with the intention to adopt mobile payment services in the retailing industry. From the results of this study, there were several insights proposed to retailers, mobile payment technology companies, and mobile payment application developers. In addition, this study fills the theoretical gap of comprehending the main antecedents influencing customers' intention to adopt mobile payment services in the retailing industry via an integrated model.

Keywords: Mobile Payment, Mobile Commerce, Information System Success Model, Trust Transfer Theory.

1 Introduction

The emergence of mobile devices has brought about significant changes to the way people carry out their daily activities. Mobile devices, especially smartphones, have now become a necessity in the lives of many people (Loh et al., 2020). Given the development surrounding the use of smartphones, this has resulted in a new way of making payments known as mobile payment. More specifically, mobile payment refers to a service that enables users to initiate, authorize, and complete financial transfers using a mobile device through mobile networks or wireless communication technologies (Slade et al., 2013). In Malaysia, there are a number of mobile payment systems that consumers can choose from. Among the more popular ones include Boost, Grabpay, and Touch n' Go eWallet (Lew et al., 2020).

Mobile payment has the potential to be a competitive advantage for companies in the retailing industry. This is because mobile payment can lead to numerous benefits for both customers and merchants. On the customers side, using mobile payment in retail stores simplifies the payment process, speeds up services, and reduces the need to carry cash around (Dinh et al., 2018). For merchants, mobile payment helps in terms of automation as it can easily collect information and generate reports accordingly such as daily incomings and outgoings, average customer spending per transaction and so on in an instant. In view of the above-mentioned benefits, businesses are more inclined to enhance their business by providing mobile payment services at their stores.

Even as more and more merchants are integrating mobile payment into their business operations, it was found that only around 10% of payments made in Malaysia were through mobile means. This is a clear indication that this mobile payment is still sparingly used by Malaysians (Golingai, 2019). This is because cash still plays the dominant role as the most preferred payment method despite the Malaysian government's actions to transform the country into a cashless one (Nielsen, 2019). Hence, there is the presence of a gap in terms of comprehending the variables that affect the intention to adopt mobile payment in the retailing industry. In an attempt to fill the gap, this study utilizes a research framework that incorporates the Information System Success Model with the Trust Transfer Theory.

Thus, this study aims to determine (1) the constructs that influence the intention to adopt mobile payment in the retailing industry as well as (2) the robustness of incorporating the Information System Success Model with the Trust Transfer Theory. Overall, this study is postulated to contribute to numerous novel findings and insights. Practically, this study provides significant value to numerous stakeholders, especially mobile payment service providers. Theoretically, this study extends the knowledge on adoption intention for mobile payment in the retailing industry the perspective of a developing nation.

2 Literature Review

2.1 Information System Success Model

The Information System Success Model was developed by DeLone and McLean (1992). The model included six factors that are system quality, information quality, user satisfaction, use, individual impact, and organizational impact. However, due to the continuous progress of technology and society, the initial model gradually showed many deficiencies. Thus, DeLone and McLean (2003) then proposed an update for the model. Among the major changes in the updated model include the addition of service quality as a variable and integration of individual and organizational impact into net benefit. These changes brought about improvements to the model by making it more relevant when it comes to understanding information system success in the 21st century.

The Information System Success Model is one of the most extensive models when it comes to evaluating information system success (Tam et al., 2019). Given the comprehensiveness of the model, it has attracted the attention of many researchers in different areas of information system. These areas include mobile application (Hsiao et al., 2019), business intelligence system (Gonzales & Wareham, 2019), online learning (Aldholay et al., 2018), and many others. As mobile payment is a form of information system, this study utilizes the Information System Success Model to look into the intention to adopt.

2.2 Trust Transfer Theory

Trust is an important predictor of an individual's use intention and behavior. Under the Trust Transfer Theory, it is posited that when two targets are connected, the trust in the source-target can be transferred to another related target (Stewart, 2003). When the trusted target and the unknown novel target possess a high degree of similarity, it can prompt users to transfer the trust to the unknown new target. Shi and Chow (2015) stated that trust transfer is a cognitive process that can promote the establishment of new trust. People's attitudes toward familiar things will change or increase their trust towards unknown targets. In particular, this is because of the perceived connection between the familiar and new targets (Al-Htibat & Garanti, 2019).

The presence of trust transfer has been empirically supported by past studies in different areas. These studies include Chaouali and El Hedhli (2019) which looked into the trust transfer from automated teller machines and online banking to mobile banking. Another example is by Yang et al. (2015) which investigated the transference of trust from online to mobile shopping. Furthermore, given that online payment precedes mobile payment, this study applies the Trust Transfer Theory to look into the dynamics between the different payment platforms.

3 Hypotheses Development

3.1 Information Quality

Information quality refers to the ability of mobile payment to provide fast and accurate payment information which makes it convenient for customers to use in retail stores (Gonzales & Wareham, 2019). The significance of information quality as an antecedent of satisfaction has been empirically proven by a number of past studies. These include those in the areas of mobile banking (Sharma & Sharma, 2019) and mobile application (Hsiao et al., 2019). Hence, the hypothesis below was developed:

H1: Information quality has a significantly positive relationship with customer satisfaction.

3.2 System Quality

System quality refers to the correlation, ease of use, response speed, and visual appeal of the mobile payment service system (Hsiao et al., 2019). System quality has been evaluated in terms of loading speed, response time, and ease of operation (Aldholay et al., 2018). Specifically in the context of mobile payment, system quality in the form of usability and responsiveness were found to influence satisfaction (Ramadan & Aita, 2018). Thus, the hypothesis below was developed:

H2: System quality has a significantly positive relationship with customer satisfaction.

3.3 Service Quality

Service quality indicates that the system provides reliable and guaranteed services to users (Martins et al., 2019). In particular, mobile payment providers are to provide precise services, assured services, and tangible services

provided to users (Aldholay et al., 2018). A number of past studies have found service quality to be a significant determinant of satisfaction. For example, Kim et al. (2020) as well as Wang and Teo (2020) in the contexts of mobile shopping applications and mobile government services respectively. Based on the above-mentioned, the hypothesis below was developed:

H3: Service quality has a significantly positive relationship with customer satisfaction.

3.4 Customer Satisfaction

Customer satisfaction refers to the customers' overall evaluation of the use of mobile payment services in retail stores (Hossain et al., 2018). More specifically, it indicates whether a particular service meets the expectations and needs of customers. Customer satisfaction or otherwise is based on customers' sentiment which is either positive or negative respectively (Cao et al., 2018). In the setting of this study, customer satisfaction was found to significantly encourage the intention to adopt mobile payment (Ramadan & Aita, 2018; Humbani & Wiese, 2019). Therefore, the following hypothesis was developed:

H4: Customer satisfaction has a significantly positive relationship with the intention to adopt mobile payment.

3.5 Trust in Online Payment

The trust transfer theory posits that an individual's trust is transferable from a known target to an unknown one (Stewart, 2003). The applicability of this theory has been shown by past studies to be valid from an offline and online to mobile context. More specifically, Chaouali and El Hedhli (2019) found that users' trust in mobile payment are significantly determined by their trust in both automated teller machines and online banking. In the context of this study, online payment is the source while mobile payment is the unknown target. This is because online payment precedes mobile payment (Cao et al., 2018). Hence, the following hypothesis was developed:

H5: Trust in online payment has a significantly positive relationship with trust in mobile payment.

3.6 Functional Consistency

Functional consistency refers to the degree in which the source and target is similar in terms of their functions and operations (Stewart, 2003). The similarities are posited to facilitate the trust transfer between the known and unknown target. For instance, Yang et al. (2015) found that the similarities between online and mobile shopping services have a significant effect on users' trust in mobile shopping services. Particularly in this study, it refers to the similarities in the functions of online and mobile payment. This is because when comparing between both platforms, there are several similar functions that can be observed such as making payments, transferring funds, and checking balances. Thus, the hypothesis below was developed:

H6: Functional consistency has a significantly positive relationship with trust in mobile payment.

3.7 Perceived Entitativity

Perceived entitativity refers to the degree whereby a source and target object are deemed to be grouped in the same category (Gong et al., 2019). Despite the difference in context from online to mobile, as long as the service is still the same, perceived entitativity is found to be present. Subsequently, this will increase users' trust in the mobile service (Wang et al., 2013). In the case of this study, it denotes the degree in which users believe that online and mobile payment belong to the same category. Particularly, the trust transfer of users from online to mobile payment is facilitated in the event that users perceive a high entitativity between both platforms (Cao et al., 2018). Hence, the following hypothesis was developed:

H7: Perceived entitativity has a significantly positive relationship with trust in mobile payment.

3.8 Trust in Mobile Payment

Trust has been theorized as the belief that the other party will conduct according to the proper behavior (Shao et al., 2019). Particularly, trust in the context of mobile payment refers to the willingness of users to make payment over a mobile device and network while expecting the payment platform to perform its duties (Cao et al., 2018). Trust is essential in the setting of mobile payment as it heavily involves money. Past studies have indicated that trust is important in determining the intention to use mobile payment (Zhou, 2014; Loh et al., 2020) Hence, the hypothesis below was developed:

H8: Trust in mobile payment has a significantly positive relationship with the intention to adopt mobile payment.

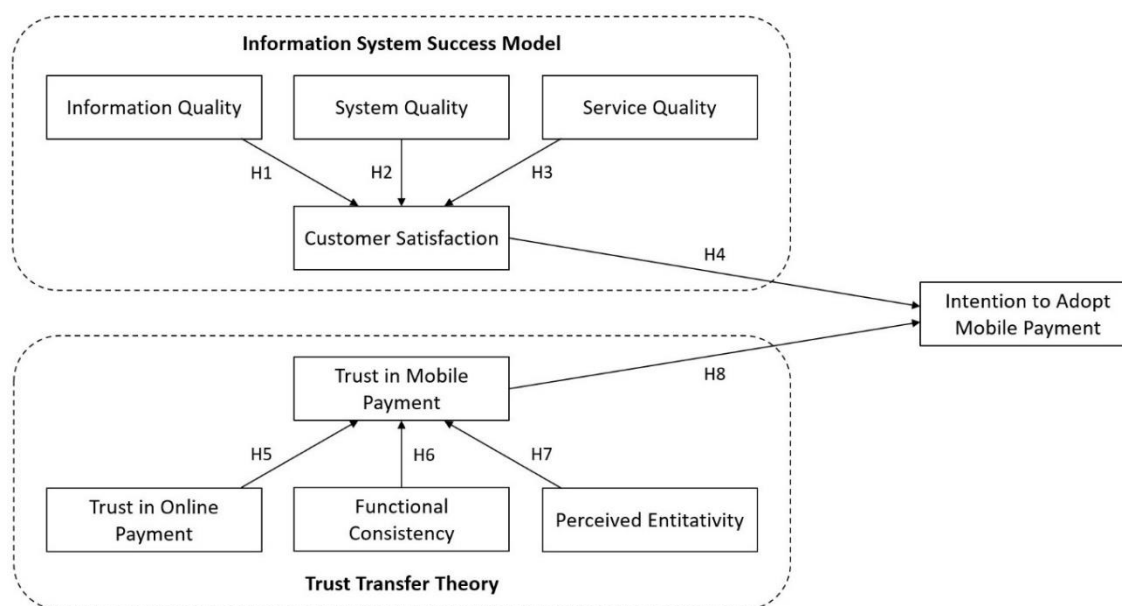


Fig. 1. Proposed Conceptual Model.

4 Methodology

Given the context of this study, the target respondents are Malaysian mobile device users who have experience in using online payment services. Besides that, non-probability sampling was used as there is no sampling frame available for this group of people. Thus, this study utilized purposive sampling as the respondents would have to fit certain requirements (Leong et al., 2020). In particular, two qualifier questions (“I have experience utilizing online payment services.” and “I have a mobile device.”) were included to filter out non-target respondents. For the minimum sample size, G*Power was utilized with a setting of 8 predictors, 15% effect size, 5% alpha level, and 80% power. The software calculated that 109 responses were sufficient.

The data collection of this study was conducted via an online survey. The survey has three sections which are (1) cover page, (2) demographic, and (3) measurement items (Foo et al., 2018; Ooi et al., 2018; Leong et al., 2019). The demographic section covered the age, gender and other personal characteristics of the respondents. The ensuing section gauged the factors of information quality (four items), system quality (four items), service quality (four items), customer satisfaction (four items), trust in online payment (four items), functional consistency (four items), perceived entitativity (four items), trust in mobile payment (three items) and intention to adopt mobile payment (four items). Overall, as shown in Appendix A, there were a total of 34 questionnaire items which were mainly adapted from Ramadan and Aita (2018), Cao et al. (2018), as well as Loh et al. (2019). All questionnaire items were measured with a 7-point Likert scale. Overall, this study collected 359 responses which were subsequently analyzed with PLS-SEM.

5 Analysis

5.1 Demographic Profile

Based on Table 1, the majority of the respondents are male (64.9%), possess a bachelor degree / professional qualification (56.8%), and uses mobile payment every day (54.9%).

Table 1. Descriptive Analysis.

Characteristics	Description	Count	Percentage
Gender	Male	233	64.9
	Female	126	35.1
Age	16-20 years old	28	7.8
	21-25 years old	63	17.6

	26-30 years old	59	16.4
	31-35 years old	49	13.7
	36-40 years old	52	14.5
	41-45 years old	54	15.0
	46-50 years old	39	10.8
	51 years old and above	15	4.2
Highest Level of Education	Primary / Secondary school	29	8.1
	Diploma / Advanced diploma	80	22.3
	Bachelor degree / Professional qualification	204	56.8
	Master / PhD degree	46	12.8
Personal Income (per month)	Less than RM2,000	89	24.8
	RM2,001-RM5,000	156	43.4
	RM5,001-RM8,000	74	20.6
	RM8,001-RM10,000	30	8.4
	RM10,001 and above	10	2.8
Number of Mobile Devices Owned	1-2	175	48.8
	3-5	151	42.0
	More than 5	33	9.2
Frequency of Using Mobile Payment	Every day	197	54.9
	Every week	62	17.3
	Every month	41	11.4
	Every 3 months	38	10.6
	Every 6 months	13	3.6
	Every year	8	2.2

5.2 Measurement Model Assessment

Based on Table 2, reliability has been confirmed as all values of Cronbach's alpha for each construct are above the threshold of 0.7 (Hew et al., 2019; Ooi et al., 2020). Moreover, convergent validity is also established as all the values for average variance extracted and factor loading are greater than 0.5 and 0.7 respectively (Hew et al., 2018; Wong et al., 2020a; Hew et al, 2020).

Table 2. Factor Loading, Reliability, and Average Variance Extracted

Construct	Measurement Item	Factor Loading	Cronbach's Alpha	Variance Inflation Factor
Information Quality	IQ1	0.847	0.891	0.754
	IQ2	0.852		
	IQ3	0.897		
	IQ4	0.877		
System Quality	SYQ1	0.894	0.896	0.764
	SYQ2	0.891		
	SYQ3	0.811		
	SYQ4	0.897		
Service Quality	SEQ1	0.889	0.907	0.781
	SEQ2	0.889		
	SEQ3	0.873		
	SEQ4	0.884		
Customer Satisfaction	CS1	0.901	0.911	0.789
	CS2	0.892		
	CS3	0.895		

	CS4	0.865		
Trust in Online	TOP1	0.920	0.906	0.781
Payment	TOP2	0.860		
	TOP3	0.899		
Functional	FC1	0.894	0.912	0.790
Consistency	FC2	0.898		
	FC3	0.880		
	FC4	0.882		
Perceived Entitativity	PE1	0.883	0.901	0.772
	PE2	0.865		
	PE3	0.859		
	PE4	0.907		
Trust in Mobile	TMP1	0.894	0.836	0.751
Payment	TMP2	0.847		
	TMP3	0.859		
Intention to Adopt	IA1	0.905	0.908	0.784
	IA2	0.886		
	IA3	0.893		
	IA4	0.858		

In addition, discriminant validity was also found to be present as all values for the 2.5% and 97.5% confidence intervals are below 1 (Tan & Ooi, 2018) as shown in Table 3.

Table 3. Hetero-Trait-Mono-Trait Inference

Path	Original Sample	Mean Sample	Bias	Confidence Interval	
				2.5%	97.5%
IQ→CS	0.881	0.881	-0.001	0.812	0.937
IQ→FC	0.799	0.799	0.000	0.697	0.876
IQ→IA	0.925	0.926	0.000	0.872	0.969
SYQ→CS	0.949	0.949	0.000	0.903	0.984
SYQ→FC	0.816	0.817	0.000	0.731	0.882
SYQ→IA	0.946	0.946	0.001	0.898	0.983
SYQ→IQ	0.958	0.958	0.000	0.923	0.988
SYQ→PE	0.871	0.872	0.000	0.794	0.928
SEQ→CS	0.715	0.715	0.000	0.624	0.794
SEQ→FC	0.797	0.798	0.000	0.697	0.879
SEQ→IA	0.796	0.795	0.000	0.703	0.870
SEQ→IQ	0.872	0.873	0.001	0.784	0.940
SEQ→PE	0.782	0.783	0.000	0.676	0.868
SEQ→SYQ	0.830	0.830	0.000	0.740	0.902
TOP→CS	0.733	0.733	0.000	0.622	0.822
TOP→FC	0.858	0.858	0.000	0.787	0.914
TOP→IA	0.816	0.817	0.000	0.712	0.897
TOP→IQ	0.891	0.892	0.001	0.787	0.961
TOP→PE	0.817	0.817	0.001	0.706	0.902
TOP→SYQ	0.834	0.834	0.000	0.733	0.910
TOP→SEQ	0.904	0.904	0.001	0.785	0.984
TOP→TMP	0.922	0.923	0.001	0.811	0.993

FC→CS	0.725	0.725	0.000	0.626	0.806
PE→CS	0.792	0.792	0.000	0.701	0.859
PE→FC	0.917	0.917	0.000	0.850	0.964
PE→IA	0.934	0.935	0.000	0.885	0.976
PE→IQ	0.868	0.868	0.000	0.775	0.936
TMP→CS	0.769	0.768	0.000	0.677	0.849
TMP→FC	0.716	0.716	0.000	0.606	0.809
TMP→IA	0.796	0.796	0.000	0.705	0.866
TMP→IQ	0.920	0.921	0.001	0.855	0.974
TMP→PE	0.794	0.795	0.001	0.692	0.878
TMP→SYQ	0.813	0.814	0.000	0.727	0.889
TMP→SEQ	0.863	0.864	0.001	0.774	0.934
IA→CS	0.881	0.881	0.001	0.806	0.934
IA→FC	0.835	0.835	0.000	0.752	0.897

5.3 Structural Model Assessment

Model fit is achieved as SRMR values for the saturated model (0.045) and estimated model (0.069) are less than 0.080. Based on Table 4 and Figure 2, support was shown for H1 and H2 but not for H3. This is as information quality ($\beta=0.26$, $p=0.001$) and system quality ($\beta=0.683$, $p<0.001$) have significantly positive relationships with customer satisfaction whereas service quality ($\beta=-0.062$, $p=0.195$) was discovered to be insignificant. In addition, H5 and H7 were supported while H6 was not. This is as trust in online payment ($\beta=0.72$, $p<0.001$) and PE ($\beta=0.333$, $p=0.005$) were significantly positive variables of trust in mobile payment while functional consistency ($\beta=-0.209$, $p=0.013$) was not. Additionally, H4 and H8 were supported as customer satisfaction ($\beta=0.61$, $p<0.001$) and trust in mobile payment ($\beta=0.284$, $p<0.001$) were revealed to have significantly positive relationships with the intention to adopt mobile payment. Overall, except H3 and H6, all remaining hypotheses were supported. Also, the model can account for 68.6% of the changes in the intention to adopt mobile payment.

Table 4. Hypotheses Testing

Hypothesis	Relationship	Path Coefficient	Confidence Interval		t-value	p-value	Remark
			2.5%	97.5%			
H1	IQ → CS	0.260	0.101	0.406	3.297	0.001	Supported
H2	SYQ → CS	0.683	0.543	0.818	9.826	<0.001	Supported
H3	SEQ → CS	-0.062	-0.164	0.024	1.295	0.195	Not Supported
H4	CS → IA	0.610	0.479	0.720	9.961	<0.001	Supported
H5	TOP → TMP	0.720	0.532	0.857	8.739	<0.001	Supported
H6	FC → TMP	-0.209	-0.388	-0.059	2.492	0.013	Not Supported
H7	PE → TMP	0.333	0.122	0.575	2.784	0.005	Supported
H8	TMP → IA	0.284	0.173	0.414	4.567	<0.001	Supported

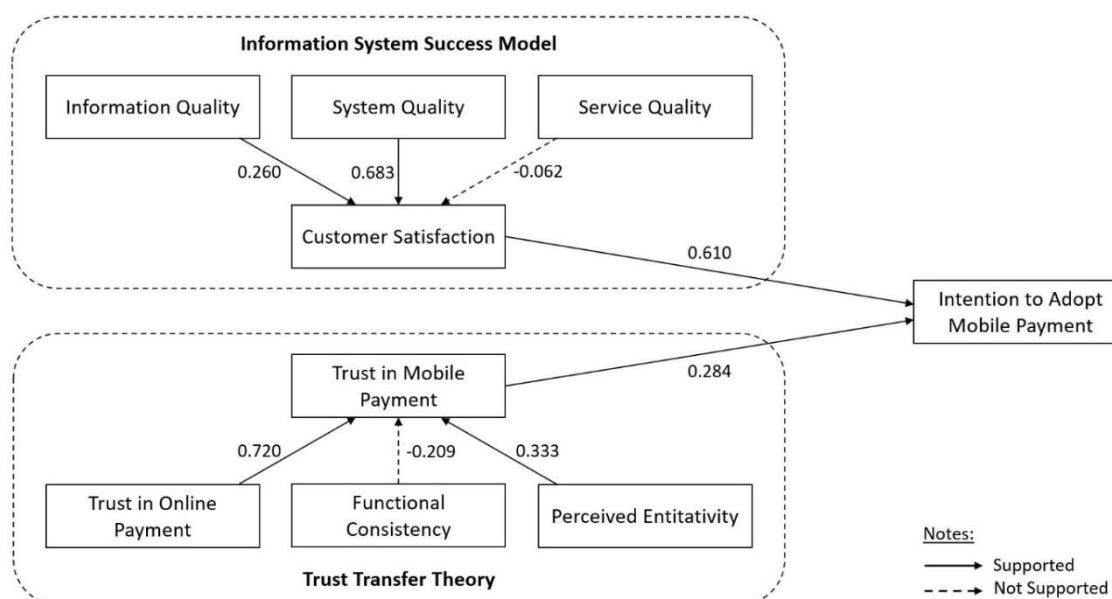


Fig. 2. Hypotheses Testing

F-square is used to assess the intensity of relationships in which values of 0.02 to 0.15 indicates a small effect, 0.15 to 0.35 specifies a medium effect, above 0.35 specifies a large effect, and less than 0.02 indicates no effect (Tan et al., 2018; Lee et al., 2020; Wong et al., 2020b). Therefore, as shown in Table 5, information quality and system quality have a small and large effect respectively whereas service quality has no effect on customer satisfaction. Furthermore, trust in online payment has a large impact on trust in mobile payment while functional consistency and perceived entitativity has small effects on trust in mobile payment. Lastly, customer satisfaction and trust in mobile payment has a large and small effect on intention to adopt mobile payment respectively.

Table 5. Effect Size (f^2)

Construct	IQ	SYQ	SEQ	CS	TOP	FC	PE	TMP	IA
Information Quality				0.060					
System Quality				0.483					
Service Quality				0.006					
Customer Satisfaction									0.652
Trust in Online Payment								0.584	
Functional Consistency								0.033	
Perceived Entitativity								0.097	
Trust in Mobile Payment									0.141

Based on Table 6, the Q^2 values for customer satisfaction, trust in mobile payment and intention to adopt exceed 0 which indicates that the structural model has predictive relevance.

Table 6. Predictive Relevance (Q^2)

Construct	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Information Quality	1436	1436	
System Quality	1436	1436	
Service Quality	1436	1436	
Customer Satisfaction	1436	592.829	0.587
Trust in Online Payment	1436	1436	
Functional Consistency	1436	1436	

Perceived Entitativity	1436	1436	
Trust in Mobile Payment	1077	544.719	0.494
Intention to Adopt	1436	678.616	0.527

6 Discussion

For the antecedents of customer satisfaction, the results were mixed. More specifically, information quality and system quality were found to be significant facilitators of customer satisfaction. These findings show that users value mobile payment systems that brings about convenience and ease to them when making payments as well as provide additional information such as automated payment record. However, service quality was revealed to have an insignificant relationship with customer service. This could be attributed to the expectations that mobile payment should be of high quality which serves as a pre-requisite for consumers to use the service. Furthermore, there were varying results for the factors related to trust in mobile payment. Particularly, trust in online payment and perceived entitativity have positive effects whereas functional consistency has a negative impact on trust in mobile payment respectively. These results show that even though users believe that online and mobile payment are related, they also believe that they are functionally different. This is the case as mobile payment does not only have many similar functions with online payment, but mobile payment also has several additional functions such as the scanning of QR codes and others. Finally, customer satisfaction and trust in mobile payment are key determinants for the intention to adopt mobile payment in the retailing industry. In view that mobile payment is a financial service, users place emphasis on trust and satisfaction when deciding on its use.

Based on the findings, there are several implications that mobile payment service providers can look into to better encourage the public to adopt mobile payment. Firstly, mobile payment service providers should always ensure that the information provided on their services are accurate and timely. Moreover, mobile service system developers need to make sure that the mobile payment system is reliable, easy to use, and responsive. Besides, mobile payment service providers should also monitor the feedback given by users and take prompt actions to address any grievances that were brought up. Additionally, financial service providers that have both online and mobile versions of their services should provide equal emphasis on the development and user experience on both platforms as trust transference is present. Also, mobile payment service providers need to build trust with their users. This can be carried out by strengthening the reputation and security of the mobile payment services.

For theoretical implications, this study has successfully extended the literature of mobile payment in several ways. Firstly, this study emphasizes on the application of mobile payment in the retailing industry which has been relatively understudied. This is because past studies tend to focus on the general application of mobile payment (Loh et al., 2019; Loh et al., 2020). Next, this study provides further empirical evidences for trust transference between similar services. Moreover, this study reveals that the integration of Information System Success Model and Trust Transfer Theory is robust when it comes to the intention to adopt mobile payment.

There are several limitations in this study which were identified. Firstly, this study is not able to analyze the changes between different periods of time due to the cross-sectional nature (Lew et al., 2020). Therefore, future studies should conduct a longitudinal study as consumer behavior on mobile payment is constantly changing. Hence, future studies should obtain data from multiple countries to overcome this limitation. Furthermore, the findings of this study may not accurately reflect the situation in other countries. This is because this study was conducted purely in Malaysia and there are diverse differences present in other countries (Yan et al., 2020).

References

- Al-Htibat, A., Garanti, Z.: Impact of interactive eReferral on tourists behavioral intentions. *Marketing Intelligence & Planning*, 37(5), 527-541 (2019).
- Aldholay, A., Isaac, O., Abdullah, Z., Abdulsalam, R., Al-Shibami, A. H.: An extension of Delone and McLean IS success model with self-efficacy. *The International Journal of Information and Learning Technology*, 35(4), 285-304 (2018).
- Cao, X., Yu, L., Liu, Z., Gong, M., Adeel, L.: Understanding mobile payment users' continuance intention: A trust transfer perspective. *Internet Research*, 28(2), 456-476 (2018).
- Chaouali, W., El Hedhli, K.: Toward a contagion-based model of mobile banking adoption. *International Journal of Bank Marketing*, 37(1), 69-96 (2019).
- DeLone, W. H., McLean, E. R.: Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-95 (1992).

- Delone, W. H., McLean, E. R.: The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9-30 (2003).
- Dinh, V. S., Nguyen, H. V., Nguyen, T.N.: Cash or cashless? Promoting consumers' adoption of mobile payments in an emerging economy. *Strategic Direction*, 34(1), 1-4 (2018).
- Foo, P. Y., Lee, V. H., Tan, G. W. H., Ooi, K. B.: A gateway to realising sustainability performance via green supply chain management practices: A PLS-ANN approach. *Expert Systems with Applications*, 107, 1-14 (2018).
- Golingai, P.: Going cashless at a snail's pace (2019). <https://www.thestar.com.my/opinion/columnists/one-mans-meat/2019/01/26/going-cashless-at-a-snails-pace-malaysians-through-force-of-habit-are-still-very-reliant-on-cash-why>
- Gonzales, R., Wareham, J.: Analysing the impact of a business intelligence system and new conceptualizations of system use. *Journal of Economics, Finance and Administrative Science*, 24(48), 345-368 (2019).
- Hew, J. J., Leong, L. Y., Tan, G. W. H., Lee, V. H., Ooi, K. B.: Mobile social tourism shopping: A dual-stage analysis of a multi-mediation model. *Tourism Management*, 66, 121-139 (2018).
- Hew, J. J., Leong, L. Y., Tan, G. W. H., Ooi, K. B., Lee, V. H.: The age of mobile social commerce: An Artificial Neural Network analysis on its resistances. *Technological Forecasting and Social Change*, 144, 311-324 (2019)
- Hew, J. J., Wong, L. W., Tan, G. W. H., Ooi, K. B., Lin, B.: The blockchain-based Halal traceability systems: a hype or reality? *Supply Chain Management: An International Journal* (2020).
- Hossain, M. A., Hossain, M. S., Jahan, N.: Predicting continuance usage intention of mobile payment: an experimental study of Bangladeshi customers. *Asian Economic and Financial Review*, 8(4), 487-498 (2018).
- Hsiao, K. L., Lin, K. Y., Wang, Y. T., Lee, C. H., Zhang, Z. M.: Continued use intention of lifestyle mobile applications: the Starbucks app in Taiwan. *The Electronic Library*, 37(5), 893-913 (2019).
- Humbani, M., Wiese, M.: An integrated framework for the adoption and continuance intention to use mobile payment apps. *International Journal of Bank Marketing*, 37(2), 646-664 (2019).
- Kim, Y., Wang, Q., Roh, T.: Do information and service quality affect perceived privacy protection, satisfaction, and loyalty? Evidence from a Chinese O2O-based mobile shopping application. *Telematics and Informatics*, 56 (2020).
- Lee, V. H., Hew, J. J., Leong, L. Y., Tan, G. W. H., Ooi, K. B.: Wearable payment: A deep learning-based dual-stage SEM-ANN analysis. *Expert Systems with Applications*, (2020).
- Leong, L. Y., Hew, T. S., Ooi, K. B., Tan, G. W. H.: Predicting actual spending in online group buying—An artificial neural network approach. *Electronic Commerce Research and Applications*, 38 (2019).
- Leong, L. Y., Hew, T. S., Ooi, K. B., Wei, J.: Predicting mobile wallet resistance: A two-staged structural equation modeling-artificial neural network approach. *International Journal of Information Management*, 51 (2020).
- Lew, S., Tan, G. W. H., Loh, X. M., Hew, J. J., Ooi, K. B.: The disruptive mobile wallet in the hospitality industry: An extended mobile technology acceptance model. *Technology in Society*, 63 (2020).
- Loh, X. M., Lee, V. H., Tan, G. W. H., Hew, J. J., Ooi, K. B.: Towards a cashless society: The imminent role of wearable technology. *Journal of Computer Information Systems* (2019).
- Loh, X. M., Lee, V. H., Tan, G. W. H., Ooi, K. B., Dwivedi, Y. K.: Switching from cash to mobile payment: What's the hold-up? *Internet Research* (2020).
- Martins, J., Branco, F., Gonçalves, R., Au-Yong-Oliveira, M., Oliveira, T., Naranjo-Zolotov, M., Cruz-Jesus, F.: Assessing the success behind the use of education management information systems in higher education. *Telematics and Informatics*, 38, 182-193 (2019).
- Nielsen.: Cash or cashless? Malaysia's shifting payment landscape (2019). <https://www.nielsen.com/my/en/insights/article/2019/cash-or-cashless-malaysias-shifting-payment-landscape/>
- Ooi, K. B., Foo, F. E., Tan, G. W. H., Hew, J. J., Leong, L. Y.: Taxi within a grab? A gender-invariant model of mobile taxi adoption. *Industrial Management & Data Systems* (2020).
- Ooi, K. B., Lee, V. H., Tan, G. W. H., Hew, T. S., Hew, J. J.: Cloud computing in manufacturing: The next industrial revolution in Malaysia? *Expert Systems with Applications*, 93, 376-394 (2018).
- Ramadan, R., Aita, J.: A model of mobile payment usage among Arab consumers. *International Journal of Bank Marketing*, 36(7), 1213-1234 (2018).
- Shao, Z., Zhang, L., Li, X., Guo, Y.: Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender. *Electronic Commerce Research and Applications*, 33 (2019).
- Sharma, S. K., Sharma, M.: Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation. *International Journal of Information Management*, 44, 65-75 (2019).
- Shi, S., Chow, W. S.: Trust development and transfer in social commerce: prior experience as moderator. *Industrial Management & Data Systems*, 115(7), 1182-1203 (2015).
- Slade, E. L., Williams, M. D., Dwivedi, Y. K.: Mobile payment adoption: Classification and review of the extant literature. *The Marketing Review*, 13(2), 167-190 (2013).
- Stewart, K. J.: Trust transfer on the world wide web. *Organization Science*, 14(1), 5-17 (2003).
- Tam, C., Loureiro, A., Oliveira, T.: The individual performance outcome behind e-commerce. *Internet Research*, 30(2), 439-462 (2019).
- Tan, G. W. H., Ooi, K. B. Gender and age: Do they really moderate mobile tourism shopping behavior? *Telematics and Informatics*, 35(6), 1617-1642 (2018).
- Tan, G. W. H., Lee, V. H., Hew, J. J., Ooi, K. B., Wong, L. W.: The interactive mobile social media advertising: An imminent approach to advertise tourism products and services? *Telematics and Informatics*, 35(8), 2270-2288 (2018).

- Wang, C., Teo, T. S.: Online service quality and perceived value in mobile government success: An empirical study of mobile police in China. *International Journal of Information Management*, 52 (2020).
- Wang, N., Shen, X. L., Sun, Y.: Transition of electronic word-of-mouth services from web to mobile context: A trust transfer perspective. *Decision Support Systems*, 54(3), 1394-1403 (2013).
- Wong, L. W., Tan, G. W. H., Hew, J. J., Ooi, K. B., Leong, L. Y.: Mobile social media marketing: a new marketing channel among digital natives in higher education? *Journal of Marketing for Higher Education* (2020a).
- Wong, L. W., Tan, G. W. H., Lee, V. H., Ooi, K. B., Sohal, A.: Unearthing the determinants of Blockchain adoption in supply chain management. *International Journal of Production Research*, 58(7), 2100-2123 (2020b).
- Yan, L. Y., Tan, G. W. H., Loh, X. M., Hew, J. J., Ooi, K. B.: QR code and mobile payment: The disruptive forces in retail. *Journal of Retailing and Consumer Services*, 58 (2020).
- Yang, S., Chen, Y., Wei, J.: Understanding consumers' web-mobile shopping extension behavior: A trust transfer perspective. *Journal of Computer Information Systems*, 55(2), 78-87 (2015).
- Zhou, T.: Understanding the determinants of mobile payment continuance usage. *Industrial Management & Data Systems*, 114(6), 936-948 (2014).

Appendix A (Questionnaire Items)

Construct	Measurement Item
Information	IQ1: The information provided by the mobile payment program is timely.
Quality	IQ2: The information provided by the mobile payment program is accurate.
	IQ3: The information provided by the mobile payment program is relevant.
	IQ4: The information provided by the mobile payment program is useful.
System Quality	SYQ1: It's easy and convenient to make payments using mobile payment applications.
	SYQ2: The mobile payment application responds quickly.
	SYQ3: The visual design of the mobile payment application looks great.
	SYQ4: The mobile payment application can help me complete payment quickly.
Service Quality	SEQ1: Services provided by mobile payment is reliable.
	SEQ2: Services provided by mobile payment is guaranteed.
	SEQ3: The customer service center can effectively solve my problem.
	SEQ4: When I encounter difficulties, the customer service center can provide a quick response.
Customer	CS1: Mobile payment services meet my needs.
Satisfaction	CS2: Mobile payment services meet my expectations.
	CS3: Mobile payment services are useful during payment.
	CS4: Mobile payment services are good for me.
Trust in Online Payment	TOP1: I think it is safe to use online payment services.
	TOP2: The use of online payment services is within my ability/control.
	TOP3: The use of online payment services is guaranteed.
Functional	FC1: I think the functions of online payment services and mobile payment services are the same.
Consistency	FC2: I think online payment services and mobile payment services have similar operating procedures.
	FC3: I use online payment services and mobile payment services for the same purpose.
	FC4: I think mobile payment applications have all the functions of online payment applications.
Perceived Entitativity	PE1: I think mobile payment services and online payment services are in the same category.
	PE2: I think there is not much difference between mobile payment services and online payment services.
	PE3: I think mobile payment services and online payment services are related.
	PE4: I think mobile payment services and online payment services are very similar.
Trust in Mobile Payment	TMP1: Using mobile payment is safe for me.
	TMP2: Using mobile payment will not cause financial loss or personal information leakage.
	TMP3: Mobile payment service providers will strengthen security measures.
Intention to Adopt	IA1: I plan to use mobile payment services in retail stores.
	IA2: If I have the opportunity, I will use mobile payment services to make payment in retail stores.
	IA3: I am willing to use mobile payment services in retail stores.
	IA4: I will not refuse to use mobile payment services in retail stores.