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FACTORS INFLUENCING THE INTENTION USE OF HAND-HELD DEVICES TO PROMOTE LOCAL HANDICRAFT IN MALAYSIA

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Abstract

The hand-held devices have become a necessity for the business community to communicate with each other. One of the most popular hand-held devices is the mobile phone which has the highest adoption rates of technology in the modern history. This research focuses on identifying the critical success factor of using hand-held devices to promote local handicraft in Sabah and testing these independent factors toward intention to use mobile marketing. From a total of 250 questionnaires that we distributed, only 170 (68% return rate) were returned and used for this study. Data was analysed using SmartPLS 2.0. Out of the six independent variables (i.e., compatibility, credibility, ease of use, financial, risk, self-efficacy and usefulness) tested in this research towards an intention to use mobile marketing, only four indicated a significant relationship namely compatibility, credibility, ease of use and self-efficacy.

***JEL Classification**: M20; M31; Q13.*
***Keywords**: Mobile marketing; Critical success factors; Handicraft.*

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1. Introduction

The state of Sabah has more than 56% of craftsmen in the whole country. However, the industry has not fully explored the usage of technology to promote its produce. Technology has changed the way a product or a service from a provider reaches the consumer. According to Cox and Alderson (1948, p.151), "the most acute marketing problems are precipitated by the facts of technological change". In this situation, the market analyst does not have the luxury of choice as to whether they will adopt a dynamic view, but at the very least he or she must take account of technological changes in marketing (Cox & Alderson, 1948). With the underlying notion of technology shifts, the present study focuses on identifying the influencing factors toward the intention to use mobile applications (m-application) to promote local handicraft in Sabah. This is related to mobile marketing which is described as "a new lifestyle that offers superfluity of technology that motions mobility and convenience to its users, and in some occasions, it offers better prospects to marketers in their quest to reach their customers wherever they may be" (Syuhaidi & Rosmiza, 2014). Mady (2011) further listed out 11 types of mobile marketing, which are text/SMS marketing, mobile web, bluetooth wireless proximity marketing, multimedia message service (MMS), mobile applications, pay per call (PPC), mobile banner ads, location-based marketing, voice marketing, mobile games, and quick-response barcodes (QR codes).

2. Literature review

This section will focus on eight main variables that will be tested in this research.

2.1 Compatibility

Research findings suggest that mobile commerce providers and managers should improve their compatibility with various users' requirements, past experiences, lifestyle and beliefs to fulfil customers' expectations (Wu & Wang, 2005). According to Rogers (2003, p.240), Compatibility is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and the needs of potential adopters. Nyeko et al. (2014) have been studying about SMS banking adoption in Uganda, and they found out that consumers will likely adopt SMS banking when they feel the SMS banking is compatible with their lifestyle. Therefore, the following hypothesis is proposed:

H1: Compatibility has a direct effect on behavioural intention to use mobile marketing

2.2 Credibility

Credibility refers to the public's attitude towards the source of information (Lee et al., 2011). For the handicraft industry, credibility may also play a major role in distinguishing between legitimate suppliers, intermediaries and retailers through the identification of unique mobile devices number. According to a study by Al Khasawneh and Shuhaiber (2013) in Jordan, the

higher the credibility of SMS advertising, customers' attitude towards SMS advertising will be more favourable too. Hence, credibility is important in this paper, and the following hypothesis is proposed:

H2: Perceived credibility has a direct effect on behavioural intention to use mobile marketing

2.3 Ease of use (EOU) and usefulness (U)

The technology acceptance model (TAM) portrays two particular beliefs, perceived usefulness and perceived ease of use. Davis (1989) further suggested that perceived usefulness (U) is defined as the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organisational context. In the context of SMS banking, Nyeko et al. (2014) indicated that "when perceived benefit or relative advantage (usefulness), there are higher chances that the organisation will allocate more managerial, financial and technological resources to implement the innovation (SMS banking adoption)". Perceived ease of use (EOU) refers to the degree to which the prospective users expect the target system to be free of effort. Therefore, the following hypotheses are proposed:

H3: Perceived ease of use has a direct effect on behavioural intention to use mobile marketing

H4: Perceived usefulness has a direct effect on behavioural intention to use mobile marketing

2.4 Perceived financial resources

Perceived financial resource is defined as the extent to which a person believes that he or she has the financial resources (e.g., to pay for the handset, communication time, subscription and service) needed to use m-service systems (Wang et al., 2006). Perceived financial risk sometimes called economic risk, represents the possibility of monetary loss (Jacoby & Kaplan, 1972). In Malaysia, a study has been conducted in the context of Islamic credit card, whereby Amin (2013) indicated that perceived financial cost (financial resources) can affect the consumers' behavioural intention. Therefore, the following hypothesis is proposed:

H5: Perceived financial resource has a direct effect on behavioural intention to use mobile marketing

2.5 Self-efficacy

According to Wang et al. (2006), self-efficacy is defined as the judgement of one's ability to use mobile service. They also indicated that an individual with high expertise might have a higher intention to use a system than a person with lower expertise. Self-efficacy is the extent or strength of one's belief in one's own ability to complete tasks and reach goals. Perception of success has been found to be associated with the experience of self-efficacy and lower anxiety in social situations (Kashdan & Roberts, 2004). On the other hand,

Lee et al. (2011) indicated that self-efficacy is the items can affect attitude and behaviour. Therefore, the following hypothesis is proposed:-

H6: Self-efficacy has a direct effect on behavioural intention to use mobile marketing

2.6 Perceived risk

Perceived risk can be seen as the user's subjective explanation of suffering a loss in pursuit of the desired outcome (Pavlou, 2003). Based on theoretical perspective, a higher the perceived risk will lead to a lower intention to use mobile application. This has been supported by Susanto and Goodwin (2013), which they identified that "the more an individual perceives that using an SMS-based e-government service is risky, the more unfavourable his/her attitude towards using the service". However, Wu and Wang (2005) found perceived risk to have a positive relationship towards an intention to use mobile commerce. Thus:

H7: Perceived risk has a direct negative effect on behavioural intention to use mobile marketing

3. Methodology

This research would assess the direct effect of influencing factors on behavioural intention to use mobile marketing channel. A questionnaire survey was utilised for this study. A structured self-administered questionnaire was developed using adapted questions from Wang et al. (2006) for behavioural intention (BI), perceived credibility (PC), perceived ease of use (PEU), perceived financial resources (PFR), perceived self-efficacy (PSE), perceived usefulness (PU); and Wu and Wang (2005) for compatibility (C) and perceived risk (RISK). The data collection was conducted using convenience sampling, the unit of analysis is individual, and a total of 250 questionnaires were distributed within the period of three months. 170 completed and usable questionnaires were returned. Data was analysed using SmartPLS 2.0.

4. Results

For the assessment of the measurement model for each of the studied constructs, firstly we tested the convergent validity. In order to assess convergent validity, we evaluated the factor loadings, composite reliability (CR) and average variance extracted (AVE) as suggested by Hair et al. (2014). As shown in Table 1, the loadings for all the items were ranged between 0.766 and 0.960, which exceeded the cutoff value of 0.50. The CR estimates the extent to which a set of latent construct indicators share in their measurement of a construct, while the AVE is the amount of common variance among latent construct indicators (Hair, 1998). The results in Table 1 illustrate the CR for all the studied constructs were higher than 0.7 as recommended by Hair et al. (2010) and the AVE of all the constructs exceeded 0.5 as suggested by Fornell and Larcker (1981a). The composite reliability for all the constructs was

ranged between 0.828 and 0.945 and the AVE for each of the constructs were in the range of 0.708 to 0.875.

Table 1: Results of the measurement model.

Construct	Measurement item	Loading	AVE	CR
Intention	BI1	0.928	0.852	0.920
	BI2	0.918		
Compatibility	C1	0.851	0.752	0.901
	C2	0.822		
	C3	0.925		
Perceived credibility	PC1	0.872	0.816	0.898
	PC2	0.934		
Ease of use	PEU1	0.926	0.852	0.945
	PEU2	0.932		
	PEU3	0.910		
Financial	PFR1	0.960	0.875	0.933
	PFR2	0.910		
Self-efficacy	PSE2	0.766	0.708	0.828
	PSE3	0.911		
Usefulness	PU1	0.887	0.792	0.938
	PU2	0.904		
	PU3	0.890		
	PU4	0.879		
Risk	RISK1	0.869	0.724	0.913
	RISK2	0.856		
	RISK3	0.874		
	RISK4	0.805		

Note: AVE = (summation of squared factor loadings) / (summation of squared factor loadings)*(summation of error variances). Composite reliability = (square of the summation of the factor loadings) / [(square of the summation of the factor loadings) + (square of the summation of the error variances)].

After the convergent validity, we continued to evaluate the discriminant validity of the model. Discriminant validity was performed by examining the square root of AVE for each construct which must be greater than the correlation with each other construct (Fornell and Larcker, 1981b). Table 2 represents the square root of AVE and the correlations between the constructs. It shows that the square root of AVE is greater than the correlation with other constructs. With regard to cross loadings, Hair et al. (2014) suggested that the loadings should be higher than the cross loadings by at least 0.1 to indicate adequate discriminant validity. As shown in Table 3 the loadings of all construct fulfil this criterion. Overall, the measurement model in this study demonstrated satisfactory with the evidence of adequate reliability, convergent validity and discriminant validity.

Table 2: Discriminant validity of constructs.

	Constructs	1	2	3	4	5	6	7	8
1	Compatibility	**0.867**							
2	Credibility	0.396	**0.903**						
3	Ease of Use	0.501	0.509	**0.923**					
4	Financial	0.558	0.553	0.568	**0.935**				
5	Intention	0.505	0.471	0.529	0.558	**0.923**			
6	Risk	0.476	0.334	0.501	0.474	0.415	**0.851**		
7	Self-efficacy	0.228	0.240	0.295	0.294	0.492	0.293	**0.842**	
8	Usefulness	0.540	0.546	0.733	0.541	0.618	0.513	0.450	**0.890**

Table 3: Cross loading.

	COMP	CRED	EOU	FIN	INT	RSK	SE	USE
BI1	0.520	0.427	0.529	0.507	**0.928**	0.425	0.457	0.597
BI2	0.409	0.442	0.445	0.524	**0.918**	0.338	0.452	0.543
C1	**0.851**	0.345	0.376	0.490	0.439	0.402	0.187	0.450
C2	**0.822**	0.335	0.445	0.405	0.374	0.391	0.186	0.434
C3	**0.925**	0.353	0.483	0.544	0.491	0.445	0.219	0.516
PC1	0.330	**0.872**	0.370	0.492	0.352	0.318	0.181	0.367
PC2	0.381	**0.934**	0.528	0.509	0.482	0.293	0.245	0.590
PEU1	0.477	0.497	**0.926**	0.563	0.496	0.468	0.299	0.707
PEU2	0.498	0.446	**0.932**	0.530	0.500	0.488	0.283	0.666
PEU3	0.408	0.466	**0.910**	0.476	0.467	0.429	0.235	0.656
PFR1	0.549	0.554	0.532	**0.960**	0.603	0.449	0.290	0.509
PFR2	0.488	0.468	0.535	**0.910**	0.409	0.440	0.257	0.508
PSE2	0.130	0.114	0.155	0.254	0.314	0.241	**0.766**	0.283
PSE3	0.237	0.263	0.315	0.250	0.489	0.256	**0.911**	0.450
PU1	0.507	0.449	0.589	0.507	0.562	0.455	0.455	**0.887**
PU2	0.457	0.478	0.709	0.474	0.513	0.454	0.365	**0.904**
PU3	0.497	0.493	0.633	0.451	0.528	0.434	0.364	**0.890**
PU4	0.460	0.522	0.681	0.492	0.590	0.479	0.413	**0.879**
RISK1	0.442	0.357	0.494	0.521	0.486	**0.869**	0.258	0.515
RISK2	0.401	0.300	0.451	0.387	0.268	**0.856**	0.206	0.417
RISK3	0.410	0.232	0.363	0.324	0.329	**0.874**	0.298	0.415
RISK4	0.333	0.187	0.353	0.288	0.197	**0.805**	0.217	0.325

Note: COMP = Compatibility; CRED = Credibility; EOU = Ease of use; FIN = Financial; INT = Intention; RSK = Risk; SE = Self-efficacy; USE = Usefulness.

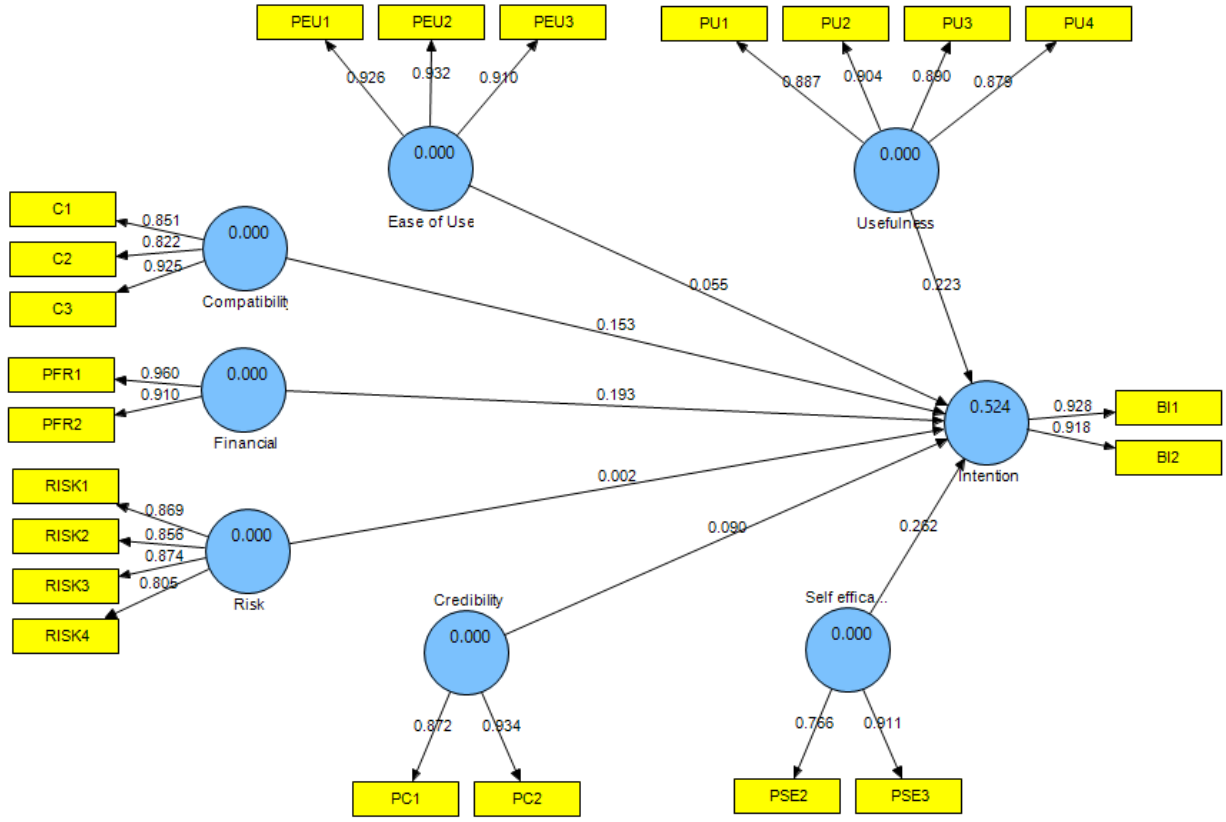

Figure 1: Results of the path analysis.

4.1 Structural model estimation

To assess the structural model and to test the hypothesised relationships of the studied constructs, we ran 500 subsamples in the bootstrap procedure. The path coefficients and t-value results will determine the significance of the hypothesised relationships. Table 4 and Figure 1 illustrated the results for the structural model relationships and the significance of hypotheses testing. The results indicate that the R^2 value is 0.524 suggesting that 52.4% of the variances in behavioural intention can be explained by the exogenous variables. Based on Figure 1 and Table 4, four out of seven hypotheses were supported. Compatibility (ß = 0.153, t-value = 1.942, p< 0.05), perceived financial (ß = 0.193, t-value = 2.140, p< 0.05), self-efficacy (ß = 0.262, t-value = 3.067, p< 0.01) and perceived usefulness (ß = 0.223, t-value = 1.653, p< 0.05) were positively influenced behavioural intention towards mobile application. Thus, H1, H4, H5 and H6 were supported; whereas H2, H3 and H7 were not supported.

Table 4: Hypothesis testing

Hypothesis	Relationship	Std. beta	SE	*t*-value	Decision
H1	Compatibility -> Intention	0.153	0.079	1.942*	Supported
H2	Credibility -> Intention	0.090	0.100	0.898	Not Supported
H3	Ease of Use -> Intention	0.055	0.108	0.506	Not Supported

Table 4 (*continued*).

Hypothesis	Relationship	Std. beta	SE	*t*-value	Decision
H4	Usefulness -> Intention	0.223	0.135	1.653*	Supported
H5	Financial -> Intention	0.193	0.090	2.140*	Supported
H6	Self-efficacy -> Intention	0.262	0.085	3.067**	Supported
H7	Risk -> Intention	0.002	0.066	0.023	Not Supported

Notes: **p < 0.01(2.33); *p < 0.05(1.645)

5. Conclusion and recommendation

Based on the above results, we can conclude that only four of the eight independent factors have a direct influence on intention to use mobile application. These four factors are compatibility, usefulness, financial and self-efficacy. The most important determinants for behavioural intention to use mobile application is self-efficacy. Our study suggests that the mobile service providers must take into consideration about handicraft operators' self-efficacy if they want the handicraft industry to adopt mobile service as their main business platform. This is supported by Wang et al. (2006). This result indicated that an individual's intention to use mobile application would be affected by his or her perceptions related to the strength of one's belief in one's own ability and knowledge about the mobile application. The results also pointed that usefulness is a determinant factor for behavioural intention to use the mobile application, but ease-of-use was not a significant determinant factor for behavioural intention to use. However, Wu and Wang (2005) reported differently in their study indicating the effect of perceived ease-of-use may subside over time. For this study, we need to look at the situation differently based on the exposure the respondents are receiving in relation to mobile services and the context of using the mobile application to support their business. Hence, the ease-of-use factor may be tackled through the daily usage of mobile phones, and it becomes a routine rather than a learning process for the user. The final significant result in this study is perceived financial resources. A perceived financial resource is a crucial factor because when respondents want to use their mobile phones for business transaction one of the final element is securing the business is the financial transaction. Increase awareness about the safety and security of online transaction may help business owners to be more confident in promoting businesses through hand-held devices.

6. Limitation and future research

First, it is worth noting that the effect of credibility on intention to use m-application is marginally significant. Therefore future research should test the relationships between the independent variables as the mediator and moderator. Second, one of the major limitations of this study is the sample size. Future research should cover more states in order to have a more general picture of the study. Finally, future research should incorporate more variables (e.g. actual usage behaviour and perceived enjoyment) in a view to understanding consumers' intention to use m-applications.

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Appendix.

Construct	Item	Measurement
Intention	BI1	Assuming that I have access to the mobile application services, I intend to use them.
(Wang et al., 2006)	BI2	I intend to increase my use of mobile application services in the future.
Compatibility	COM1	Using mobile application is compatible with most aspects of my online transactions.
(Wu & Wang, 2005)	COM2	Using mobile application fits my lifestyle.
	COM3	Using mobile application fits well with the way I like to engage in online transactions.
Perceived credibility	PC1	Using mobile application would not divulge my personal information.
(Wang et al., 2006)	PC2	I would find mobile application secure in conducting my transaction.
Ease of use	PEU1	Learning to use mobile application is easy to me.
	PEU2	It would be easy for me to become skilful at using mobile application.
(Wang et al., 2006)	PEU3	Using mobile application would make it easier for me to engage in the online transaction.
Perceived financial resources	PFR1	Financial resources (e.g., to pay for communication time, subscription, and service) are not a barrier for me in using mobile application services.
(Wang et al., 2006)	PFR2	I have enough financial resources (e.g., to pay for communication time, subscription, and service) for using mobile application services.
Self-efficacy (Wang et al., 2006)	PSE2	I could conduct my transactions using the mobile application system if I had seen someone else using it before trying it myself.
	PSE3	I could conduct my transactions using the mobile application system if someone showed me how to do it first.
Usefulness	PU1	Using mobile application would improve my performance in conducting transactions.
(Wang et al., 2006)	PU2	Using mobile application would make it easier for me to conduct transactions.
	PU3	I would find the mobile application useful in conducting my transactions.
	PU4	Using mobile application would make it easier for me to engage in online transactions.
Perceived risk	RISK1	I think using the mobile application in monetary transactions has potential risk.
(Wu & Wang, 2005)	RISK2	I think using the mobile application in product purchases has potential risk.
	RISK3	I think using the mobile application in merchandise services has potential risk.
	RISK4	I think using mobile application puts my privacy at risk.