

The Determinants and Interest on Mobile Commerce Adoption among East Coast Entrepreneurs in Malaysia

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Abstract. Mobile commerce among rural entrepreneurs is still in the infancy stage. This study investigates the determinants and interest of mobile commerce usage among east coast entrepreneurs in Malaysia regarding purchase and sale activities. A questionnaire was adopted and adapted from the Unified Theory of Acceptance and Use of Technology (UTAUT) and previous empirical studies. 400 questionnaires were distributed through online and face-to-face survey methods for the east coast entrepreneurs in Malaysia. The purposive and snowball sampling method was applied in this study. 360 samples were subsequently analysed using descriptive statistics and multiple linear regression analysis aided by SPSS 26.0. The study found that social influence was the most significant factor in mobile commerce utilisation among east coast entrepreneurs in Malaysia. About 71.1% of east coast entrepreneurs in Malaysia were interested in mobile commerce in expanding their business network at least once a month. It highlighted that the mobile commerce adoption has good attention from east coast entrepreneurs in Malaysia. The finding obtained that the east coast entrepreneurs in Malaysia were ready for implementing mobile commerce in their business activities. Hence, it added significantly to bridging the knowledge gap concerning the infancy rate of mobile commerce usage among rural entrepreneurs. This empirical study provides significant input to all stakeholders, including government, relevant stakeholders (e.g. entrepreneurs, supply chain industry, telecommunications industry, and ICT industry), and local communities to strategise further initiative mainly for society, economic and country development.

Keywords: Mobile Commerce Adoption, Determinants, Interest, Unified Theory of Acceptance and Use of Technology (UTAUT), East Coast Entrepreneurs

1 Introduction

1.1 Overview of Mobile Commerce

Malaysia Digital Economy Corporation in 2020 stated that the high rates of mobile phone users display a good start for Malaysian to be involved with mobile commerce,

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which may contribute significantly in leading Malaysia's digital economy forward. Mobile electronic commerce is one of the many subsets of electronic commerce. Mobile commerce is a pairing of mobile devices that directly uses a mobile terminal and a wireless access network with a commercial transaction and other convention activities [1]. In other words, mobile commerce can be translated as the use of cellular phones to perform commercial transactions online, comprising the purchase and sale of products.

Mobile commerce usage needs to flourish to meet the customer's demand, as the demands of the consumers for quicker access to information about product and services increasing day by day. [2] reported that the function of mobile devices is not limited to communication purposes, but it is valuable for information gathering, various commercial activities, and business and financial transaction, hence contributing to the possibility of mobile commerce utilization that grows progressively [3]. Mobile commerce corporations are one of the fastest-growing sectors at present. It has turned into an essential trade operation, which accounts for 62 percent, 37 percent, and 1 percent of users who made an online purchase via mobile phones, laptop or desktop, and other means respectively [4]. These proportions demonstrate that mobile devices are preferable than others in purchase and transaction activities. It may help consumers manage business activities, get better profitability through effective communication, reduce business-related travels, time-saving, and speed internal processes [5].

However, [6] and [7] indicated that mobile usage in business activity, especially among rural entrepreneurs in Malaysia, is still in the infancy stage due to the greater challenges they face than urban entrepreneurs. These challenges must be overcome by identifying the key determinants that encourage them to accept technology transformed. In addition, today's situation needs them to take a drastic shift from the traditional approach to full mobile commerce utilisation. This transformation is vital to facilitate them with current business trends. Otherwise, it is hard for them to survive and sustain their business. Besides, embracing the digital economy and utilising mobile commerce as part of their vital tools in running their business will ensure the sustainability of their business.

The government encourages the entrepreneurs on the mobile commerce usability in expanding the business network. For instance, the Ministry of Rural Development (MRD) has increased the entrepreneur's online presence through the e-entrepreneur programme and organised *Ekspo Inovasi Teknologi dan Keusahawanan Desa (INOTEKDESA)* Programme. In this situation, mobile commerce is one of the best platforms that need to be adopted as most Malaysian owns a smartphone. The increased wireless handheld device like a smartphone is one of the keys that drive mobile commerce adoption to perform commercial transactions online, like purchasing and selling products. In addition, [8] also agreed that the rise in smartphones' popularity unlocks a new opportunity, needing to understand the features that identify the acceptance of mobile commerce by every person, including entrepreneurs. The effort by the government demonstrated that they are always ready to give full support to each level of entrepreneur's whether urban or rural entrepreneurs.

However, the level of mobile commerce usability among rural entrepreneurs and the key determinant that encourage entrepreneurs to use mobile commerce needs to be

identified for the government to take the further effective initiative in helping entrepreneurs expand their businesses. Therefore, the study on analysing the key determinant that influences the use of mobile commerce and the interest level of mobile commerce adoption among east coast Malaysia's entrepreneurs must be identified. The East Coast Malaysia is selected as a study site as most rural entrepreneurs originate from these regions.

The finding of this study contributes to the new discovery in terms of the interest level of rural entrepreneurs in Malaysia towards mobile commerce adoption. It also provides the updated information as studied by [6] and [7]. At the same time, this study able to identify the key determinant of mobile commerce adoption. This output will benefit the local authorities in improving the existing plan and policy to ensure the rural entrepreneurs move forward by following the current trends incorporating the convenience and existing technology.

2 Literature Review

2.1 The Concept and the Use of Mobile Commerce in Purchase and Sale Activities

The most significant impacts of mobile commerce on business and entrepreneurship have attracted comprehensive responsiveness from various levels, including academicians, researchers, general practitioners, and policymakers [9]. Mobile-commerce is the current business technology that is changing the way organizations conduct their business, including the business to business (B2B) and business to customer (B2C) and changes stakeholder relationships [10]. The uniqueness of the mobile commerce feature has provided entrepreneurs with unprecedented flexibility and convenience in online business. Due to mobile use's popularisation supported by internet facilities, it has become a vital part of rural residents to utilize it for daily activities [11]. For entrepreneurs, it helps their business activity because the technology utilization provides residents in a rural area with a novel solution undertaking entrepreneurship transformation change [12]. They found that 18.41% increase of technology utilization will increase the entrepreneurs' online purchases and sales by 11.15% and 14.69%, respectively.

2.2 Application of Unified Technological Acceptance and Use Theory (UTAUT) in Mobile Commerce Adoption

The Unified Technological Acceptance and Use Theory (UTAUT) is the most frequent theory used to explain technology adoption, including adopting mobile commerce [8, 10, 13, 14]. It was improved by the presence of attitude and computer self-efficacy. It was used as the theoretical basis for this study since it has been widely tested and empirically validated across several fields of technology implementation [15]. Based on the previous studies, there were four main components of the UTAUT model: effort expectancy, performance expectancy, social influence, and facilitating conditions. [16] reported that the performance expectancy can be well-defined as the person trusts that using the system will enhance users' jobs. The degree to which technology adoption

will benefit the users in performing certain activities is known as effort expectancy. Whereas, the belief that existing organisational and technical infrastructures to support system implementation is named as facilitating condition. Social Influence defined as the views of a person as to whether peers and individuals of value to the person feel that he or she should participate in the action [17].

Performance expectancy will affect consumer satisfaction to continue the use of products. It was reflected as one of the core determinants of the intention towards technology adoption [18]. [3] believed that the customers would start to engage with technologies once they find them valuable. [19] acknowledged that effort expectancy is a dominant determinant in expecting the individual intention to use mobile banking. The customers will use e-banking when they recognise it has a positive impact on their jobs. [15] proved that the actual use of MOOCs for the student in higher learning education was influenced by the performance expectancy and social influence. In this case, computer self-efficacy is treated as an external factor and has a significant effect on performance expectancy.

Friends, colleagues, and family were part of social effects toward using mobile commerce [17]. It denotes the belief about whether most people favour or dislike the behaviour of users in adopting new technology. [20] analysed the effect of social links to fulfil and continue mobile social applications, hence verified the crucial impacts of social influence on technology adoption. However, [8] highlighted that performance expectancy and social influence did not significantly influence the low-income group's intention to use mobile commerce. Additionally, [21] mentioned a significantly negative relationship between performance expectancy and individual intention due to the moderating effect of perceived risk.

[10] determined that effort expectancy, computer anxiety, and commitment anticipation influenced users in adopting new technology applications, including mobile commerce. The user adoption of the mobile commerce system has a substantial effect over a longer period. The study's findings by [22] declared the effort expectancy as a predictor of consumer intentions to use ATMs with Fingerprint Authentication in Ugandan Banks. It was also supported by [23] in analysing the use of smartphones for mobile learning. Surprisingly, [24] found that effort expectancy was not significant determinants of the intention to use e-government services among China citizens.

[25] reported that facilitating conditions with high-quality infrastructures significantly influence the use of mobile apps as a platform for shopping. [8] also showed that there is a significant positive relationship between facilitating conditions and the intention to use mobile commerce and declared as the best predictor for mobile commerce adoption compared to other factors including effort expectations, performance expectancy, social influence, and perceived security. However, a previous study by [26] in Saudi Arabia remarked that the facilitating condition was not significant in forecasting students' behavioural intention of mobile learning technology acceptance.

Based on the extensive literature, the previous studies produced diverging results in significant core constructs of UTAUT due to the differences in national culture and economic development that could moderate the impact of constructs of any technology adoption [8]. It is strongly believed that the output for this study might differ from the

previous studies. Hence, the UTAUT model was adapted in mobile commerce utilisation for purchasing and sales activities to analyse the key determinant and level of interest of mobile commerce adoption among east coast entrepreneurs in Malaysia. The research hypotheses of this study are as follows:

1. Hypothesis 1 (H1): Performance expectancy is a determinant for mobile commerce adoption for sale and purchase activity among east coast entrepreneurs in Malaysia.
2. Hypothesis 2 (H2): Effort expectancy is a determinant for mobile commerce adoption for sale and purchase activity among east coast entrepreneurs in Malaysia.
3. Hypothesis 3 (H3): Social influence is a determinant for mobile commerce adoption for sale and purchase activity among east coast entrepreneurs in Malaysia.
4. Hypothesis 4 (H4): Facilitating conditions are determinants for mobile commerce adoption for sale and purchase activity among east coast entrepreneurs in Malaysia.
5. Hypothesis 5 (H5): Rural entrepreneurs in east coast Malaysia are interested in using mobile commerce for sale and purchase activity.

3 Methodology

3.1 Research Design

This study employed a quantitative approach. The primary data based on the survey questionnaires were used to gather information about the determinant and the level of interest of mobile commerce adoption. A pre-test was conducted to check the validity and reliability of the questionnaire. This study established the six sections of the questionnaire based on the previous empirical literature and the UTAUT theoretical framework. The first section provides the demographic profile of each respondent. The effort expectancy, performance expectancy, social influence, and facilitating condition information were underlined in the second, third, fourth, and fifth sections. The last section encloses questions on the level of interest towards mobile commerce adoption. It was measured by using the frequency of use in a month. Specifically, the measurement ranges from 'never use', 'minimum usage', 'moderate usage', 'high usage' and 'maximum usage'. This study used a five-point Likert scale which was measured from 'strongly disagree' to 'strongly agree' for each section except the first section.

3.2 Validity and Reliability Tests

The validity and reliability test of the questionnaires used the Content validity index and Cronbach alpha coefficient. The questionnaires were distributed to thirty respondents to check for validity and reliability. The questionnaire items were analysed using SPSS software and found that the validity and reliability to be valid with content validity above 0.7 and reliable with Cronbach alpha coefficient greater than 0.6. Hence, no updated questionnaire design is required.

3.3 Population, Sample Size and Sampling Technique

Rural entrepreneurs in East Coast Malaysia were the population for this study. The questionnaires were distributed to the rural entrepreneurs in East Coast Malaysia through face to face and an online survey. This study employed purposive and snowball sampling techniques for both surveys. The questionnaires were only given to the entrepreneurs who use mobile for business activities. The list of these groups were captured based on the suggestion by the previous respondents. The online survey was done through google form. While, the face to face survey was done at the owner premises and it took about 20 to 30 minutes per respondent to complete the questionnaire. A total of 400 questionnaires were distributed and only 360 questionnaires were returned.

3.4 Statistical Technique

The descriptive statistic and multiple linear regression analysis aided by SPSS version 26.0 were applied to examine the level of interest and determinant of mobile commerce adoption respectively. The independent variables comprise effort expectancy, performance expectancy, social influence and facilitating condition. Meanwhile, the frequency of mobile commerce usage is known as the dependent variable. Based on [22], descriptive statistics and linear regression are essential because they provide a simple and easy-to-understand presentation of the results. In addition, this method is suitable since this study is just a preliminary study.

4 Results and Discussions

4.1 Respondent's Profile

Table 1 summarized the respondents' profile. The majority of respondents were females (66.9%) and young entrepreneurs (64.1%), below 40 years old. Half of them were married (56.9%); hence they probably have their own families. In terms of education level, 42.5% of the respondents notably have at least a diploma certificate. A majority (88.1%) of the respondents had a monthly income of RM1,200 – RM5,000. Another notable point is that even though more than half of the respondents possess a maximum SPM certificate, only 7.2 per cent of them earned an income below RM1 200. These statistics showed that they were aware and willing to adopt the current technology trend, enhancing their household income even though they were not highly educated. Lastly, Table 1 indicated that most respondents have never attended any training during their business activity (73.9%). It was strongly believed that the number of rural entrepreneurs utilizing mobile commerce can be increased if they attend any training regarding the integration of technology, innovation and entrepreneurship. In addition, the number of mobile users keep increasing year by year and become an essential device for daily life activities [11].

Table 1. Demographic Profile of the Respondents

N=360	Frequency	Percentage (%)
Gender		
Male	119	33.1
Female	241	66.9
Age		
Below 30 years old	111	30.8
31 to 40 years old	120	33.3
41 to 50 years old	80	22.2
51 to 60 years old	44	12.2
61 years and above	5	1.4
Marital Status		
Married	205	56.9
Single	125	34.7
Divorced	30	8.3
Education Level		
Primary School	31	8.6
PMR/SRP	33	9.2
SPM	143	39.7
Diploma/STPM	114	31.7
Degree & Above	39	10.8
Monthly Income		
Below RM1,200	26	7.2
RM1,201 – RM3,000	163	45.3
RM3,001 – RM5,000	154	42.8
RM5,001 and above	17	4.7
Training		
Never	266	73.9
1 to 2 times	82	22.8
3 times and above	12	3.3

4.2 Determinant of Mobile Commerce

Next, this paper seeks to identify the determinant of mobile commerce adoption among rural entrepreneurs in East Coast Malaysia. By using multiple linear regression analysis, this study found that all four (performance expectation, effort expectation, social influence and facilitating condition) components of UTAUT have significantly influenced mobile commerce adoption. As presented in Table 2, the attributes of performance expectation ($\beta = 0.222$, $p < 0.01$), effort expectation ($\beta = 0.318$, $p < 0.01$), facilitating conditions ($\beta = 0.192$, $p < 0.01$), and social influence ($\beta = 0.241$, $p < 0.01$) were positively and significantly affecting the entrepreneurs' mobile commerce utilization at 1 percent significant level. The findings were supported by [8, 15, 22]. An R-squared

of 86.1% reveals that 86.1% of the data fit the regression model. This study demonstrated that performance expectation, effort expectation, social influence and facilitating condition were the main determinants for mobile commerce adoption among rural entrepreneurs in East Coast Malaysia. Thus, this study supported hypothesis 1,2,3 and 4.

The results determine that social influence was the most influential factor affecting mobile commerce usage among rural entrepreneurs. The finding reveals that peoples' experience influenced mobile commerce adoption among entrepreneurs in using it. Family, friends and IT experts are the potential groups that inspire rural entrepreneurs to use mobile commerce. In addition, [22] believed that word of mouth by reference groups play a crucial role in influencing rural entrepreneurs to use mobile commerce. Effort expectation was the second most substantial factor that encouraged rural entrepreneurs to use mobile commerce. The finding reveals that entrepreneurs can easily learn mobile commerce since most (64.2%) are young entrepreneurs (age below 40). The youth are more aware of innovations as they may have experience of various technologies and have good fundamental knowledge in applying them [2]. Performance expectation was also a factor of mobile commerce utilization. This result shows that rural entrepreneurs in East Coast Malaysia's mobile-commerce are optimistic and expect their success. The rural entrepreneurs believe using mobile commerce is useful and helpful because it may improve identity assurance and security of their money while carrying out business transactions. These results were supported by [10] and [22]. Instead of having a direct relationship between effort and performance expectation and mobile commerce usage, [27] believed that personal innovativeness would mediate the relationship between effort expectancy and performance expectancy and behavioural intentions to adopt mobile commerce.

The least influential factor was facilitating condition. This study referred to facilitating condition as the existing facilities including hardware and software materials, skill and knowledge and human resources. Compared with other factors, these facilities do not strongly help entrepreneurs engage with mobile commerce application. The reason is the mobile commerce is still new types of e-commerce which is the users were not familiar well with their interface and facilities offered. Thus, it seems necessary to provide essential technology resources, information and continuous support to encourage rural entrepreneurs to use mobile commerce [22].

Table 2. Determinants of Mobile Commerce Adoption (MCA)

Hypothesis Path	Std. Beta	t-value	R ²
H1: Performance expectancy → MCA	0.222	8.482***	0.861
H2: Effort expectancy → MCA	0.318	9.694***	
H3: Facilitating condition → MCA	0.192	6.647***	
H4: Social Influence → MCA	0.241	9.884***	

Note: ***p<0.01, **p<0.05, *p<0.1

4.3 Level of Interest on Mobile Commerce

This study posed a simple question to the respondents to gauge their interest in whether they were interested in using mobile commerce to expand their business network. By using the descriptive statistical analysis, the results were very encouraging as shown in Table 3, where 71.1 per cent of rural entrepreneurs indicated that they had used mobile commerce at least once a month. Most of them were from a group below than 41 years old. The youngster group interested to integrate technology into entrepreneurship activity. They accepted the technology changes and were willing to move forward in ensuring that they are not left behind in business activities. They were also interested in integrating the technology components in their business activity by fully utilising the existing technology for income generation. The finding also revealed that the rural entrepreneurs responded positively and were ready for mobile commerce adoption. It showed a good start for the entrepreneurs because Insider Intelligence forecasts that mobile commerce will inch closer to become consumers' preferred channel for online shopping within the next five years. Hence, it was believed that mobile commerce continues to evolve more popular. Thus, this study supported hypothesis 5.

Table 3. Mobile Commerce Adoption by Rural Entrepreneurs

Mobile commerce Utilization per month	Frequency	Percentage(%)
Never Use (0)	104	28.9
Minimum (1-2)	32	8.9
Moderate (3-5)	75	20.8
High (6-10)	117	32.5
Maximum (11 and above)	32	8.9

5 Conclusion and Recommendation

This study concluded that performance expectancy, effort expectancy, social influence and facilitating condition were determinants of mobile commerce adoption for sale and purchase activity among rural entrepreneurs in East Coast Malaysia. This study also concluded that 71.1% of rural entrepreneurs in East Coast Malaysia were interested in using mobile commerce in expanding their business network. It highlighted that they were ready to implement mobile commerce in their business. Hence, supports the government agenda and believes this kind of technology transformation adoption is significant for their business growth. This valuable finding is vital for the government to strategize further initiatives to boost rural entrepreneurs' business growth.

6 Limitations and Future Study

This study found that 28.9 percent of rural entrepreneurs were not involved with mobile commerce, and it was believed that the percentage might be more than that due to the number of samples collected were just 400. The finding will be more informative if

future research could involve more sample size and extend the current study on identifying the barriers that the rural entrepreneurs face in engaging with mobile commerce in their business. Other than that, subsequent research should implement the structural equation modelling method since the current approach has certain limitations.

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