

# The External Environment Influencing the Adoption of International Mobile Commerce for SMEs in Thailand

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*Abstract*— Research on the External Environment Influencing the Adoption of International Mobile Commerce for SMEs in Thailand, conducted a survey with the population of small and medium enterprises. A sample population of 400 enterprises, calculated from the Cochran formula. Questionnaires were used to collect basic data from October 2020 to September 2021. The statistics used for data analysis were descriptive statistics and multiple linear regression analysis. Results from research has shown that external environment factors relating to government sponsorship on mobile commerce and similar products on mobile commerce affects the acceptance of the sale of products through the global mobile commerce at statistically significant .05 level. The entrepreneurs in Thailand are interested to bring products to sell on the world-class online system. The government should provide support in terms of product management, choosing the right system for the product, competitors analysis as well as providing knowledge on how to use data from a world-class mobile commerce system in order to be able to use the data to analyze and formulate sales strategies appropriately.

*Keywords*— *Mobile Commerce; SMEs; Adoption e-commerce; OTOP*

## I. INTRODUCTION

Mobile e-commerce (M-Commerce) facilitates purchases and other transactions using wireless networks, which is useful for businesses to present product information and sell merchandise for targeting customers and these customers can still buy products anywhere, anytime. From the statistical data, it can be seen that M-Commerce tends to expand continuously by different businesses. They can take advantage of this phenomenon and profit from increased market share and new revenue streams. For small and medium-sized enterprises to accept and sell products via M-commerce is not a smooth and easy process to accomplish. There may be obstacles or factors that may influence and affect the acceptance of sales through M-commerce systems. Therefore, this research aims to study the external environment factors influencing the global sales acceptance of M-Commerce for small and medium enterprises in Thailand. The research also studies the general characteristics of small and medium-sized enterprises that accept selling products through M-Commerce. In order to receive

information that will be useful to small and medium enterprise to prepare for entering into M-Commerce. The result could help the government for supporting small and medium-sized enterprises to bring their products to sell on international M-commerce.

## II. LITERATURE REVIEW

Mobile commerce can be broadly defined as a business model that allows consumers to conduct commercial transactions over a wireless network on their mobile devices. It is also a new and innovative method of transacting regardless of location (Chong, 2013). M-Commerce is recognized as an additional extension of the capabilities of electronic commerce systems. It has many advantages over the electronic commerce system, especially in regards to the ability to respond to the needs of customers in different specific markets, ease of use, can be used anywhere, can provide services immediately, and can respond and serve customers in any location (Liebana-Cabanillas et al., 2017). M-Commerce has seen significant growth in today's business operations. The main reason is that consumers have more flexible and convenient access due to the speed of the Internet and the availability of newer mobile phones or tablets (Nripendra P. Rana and et al., 2019).

The innovation decision process theory is invented by Roger, E. M. It is a process by which the target person is exposed, considered, and ultimately rejected or accepted/implemented any innovation. The final stage of a person's decision-making process is whether to accept or not accept an innovation. There are five steps in the decision-making process regarding individual acceptance of innovation: awareness, interest, evaluation, trial, and adoption (Rogers, E. M. 2003).

The study in What Hinder SMEs from Adopting E-commerce? A Multiple Case Analysis (Salma Dahbi and Chihab Benmoussa, 2019), examined the factors affecting the adoption and use of e-commerce systems on mobile phones in Thailand. The sample group is small and medium-sized enterprises that are in the process of development. The results showed that the factors affecting in descending order were financial factors, technology, organizational culture, and specific characteristics of the organization.

Factors influencing the adoption of mobile commerce applications in Cameroon (Silas Formunyuy Verkijika,

2018) examines the factors influencing the use of e-commerce systems on smartphones by consumers in Cameroon. The technology adoption model in the form of UTAUTS was adopted as a key variable, emphasizing risk tolerance and system reliability tolerance. The results of the study revealed that the factors affecting consumer decision-making were social influences, terms of service, entertainment incentives, risk tolerance, and credibility acceptance. It is a factor that has a significant effect on purchasing products through the system. Consumers who have used the system are more likely to recommend people they know to use the system as well.

Consumers response towards mobile commerce applications: S-O-R approach (Prasanta Kr Chopdara and Janarthanan Balakrishnan, 2020) study in India on consumer behavior towards e-commerce on smartphones. For the purpose of studying the factors that result in a repeat purchase and satisfactory experience with the use of the system. The stimulus-organism-response (S-O-R) theoretical approach was applied to the data analysis. Structural equations were used to codify the results. The study found that the key factors affecting system usability and appreciability were the perception of a unique system and the benefits that consumers derive from the system. What is important to satisfying consumers is creating a memorable experience in using games such as playing games, collecting points, and redeeming rewards.

Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia (Alain Yee-Loong Chong, Felix TS Chana and Keng-Boon Ooi, 2012) examined consumer purchasing decisions via smart phones in China and Malaysia. The concept of technology adoption was introduced by TAM theory and innovation diffusion theory. Including setting the relevant variables such as system trust, total cost, social influence, service model. Demographic variables were defined as control variables, including age, education level and gender. Data were compared between the two countries, China and Malaysia. The results of the study found that Consumers in Malaysia are influenced by factors affecting the adoption and use of the system, including age, reliability, cost, social influence, and services received. In China, the factor affecting acceptance is reliability, cost, and social influence.

### III. METHODOLOGY

#### A. Purpose of the Study

To study the factors influencing the global acceptance of electronic commerce on smartphones of small and medium enterprises in Thailand.

#### B. Conceptual Framework and Hypotheses

The conceptual framework for the research is as follow:

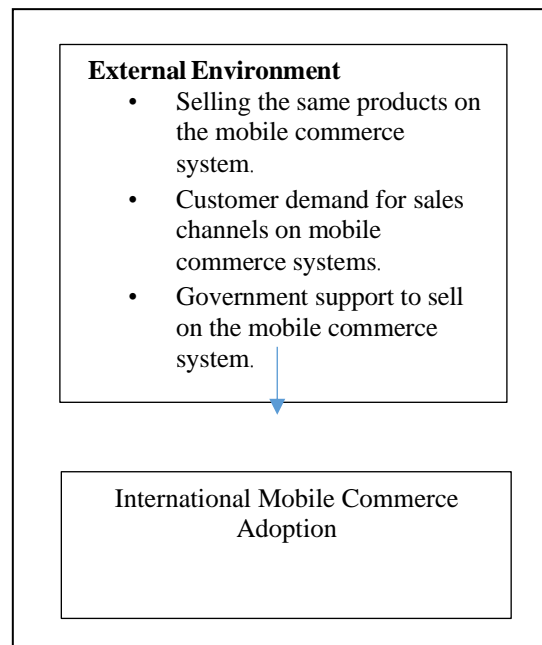


Figure 1. Research Framework.

Hypothesis: External environmental factors influence international mobile commerce adoption.

#### C. Scope of Study

The population used in the study was small and medium enterprises. The sample size was estimated at 400 organizations using the Cochran formula (Glenn D. Israel, 1992), since the exact population is unknown. The calculation formula uses 95% confidence intervals and has an error value of  $\pm 5\%$ . It can be expressed as follows:

$$n_0 = \frac{Z^2 pq}{e^2} = \frac{(1.96)^2 (.5)(.5)}{(.05)^2} = 385$$

The result of the calculation was a sample population of 385 organizations. As to prevent errors in data collection, a total of 400 questionnaires will be distributed. A quantitative method was used to obtain the data from the five parts of the questionnaire, consisting of:

- The first part of the questionnaire contains the characteristics of the organization, the investment of the business, types of products sold, length of business, number of employees, and source of products.
- The second part of the questionnaire is about external environment factors, i.e. selling the same products on mobile commerce, customer demand for sales channels on mobile commerce, and government support to sell on the mobile commerce system. Using a scale of 5 Likert Scales, starting with 1 being the least and 5 being the most.

Questionnaires were used to collect basic data from October 2020 to September 2021. The statistics used for data analysis were descriptive statistics and multiple linear regression analysis. Since the independent variable has more than one variable and only one dependent variable.

#### IV. FINDINGS

The gender analysis of small and medium-sized enterprise owners found that they were more female (67%) than male (33%). The majority of business owners' age was adolescents between the ages of 18 and 25 yrs. (63.5%), have a bachelor's degree (50%), investment is less than 50,000 baht (71.8%), types of products that are mainly sold are clothing (33.8%). Period of operation between 1 year and less than 5 years (50%), has between 1-18 co-operators (88.5%), and buying and selling with stock (58%).

An analysis of the opinion level of the acceptance of sales of products through electronic commerce on smartphones regarding all 3 factors of the external environment showed the results as follows:

TABLE I. DISPLAYS THE NUMBER (FREQUENCY), PERCENTAGE, AND STANDARD DEVIATION FOR THE LEVEL OF OPINION ABOUT EXTERNAL ENVIRONMENTAL FACTORS IN SELLING THE SAME PRODUCTS ON THE MOBILE COMMERCE SYSTEM

External environmental factors (Selling the same products on the mobile commerce system)	Opinion Level					$\bar{X}$	S.D.	Interpret	Order
	Highest	High	Medium	Low	Very low				
There are products of the same type as yours for sale on the mobile commerce system.	153 (38.3)	181 (45.3)	52 (13.0)	5 (1.3)	9 (2.3)	4.16	86	High	1
The same product is sold on the mobile commerce system at a cheaper price.	26 (6.5)	81 (20.3)	95 (23.8)	63 (15.8)	16 (4.0)	3.14	04	High	2
<b>Average</b>	<b>3.65</b>					<b>High</b>			

From Table 1 shows the frequency, percentage, and standard deviation. The level of opinion about external environmental factors in selling the same products on the mobile commerce system was found that the opinion toward products of the same type as high as 4.16, at a high opinion level. The same product is sold on the mobile commerce system at a cheaper price of 3.14, at a high opinion level.

TABLE II. DISPLAYS THE NUMBER (FREQUENCY), PERCENTAGE, AND STANDARD DEVIATION FOR THE LEVEL OF OPINION OF EXTERNAL ENVIRONMENTAL FACTORS IN TERMS OF CUSTOMER DEMAND FOR SALES CHANNELS ON MOBILE COMMERCE SYSTEMS

External environmental factors (Customer demand for sales channels on mobile commerce systems)	Opinion Level					$\bar{X}$	S.D.	Interpret	Order
	Highest	High	Medium	Low	Very low				
The same product sold on the system has a satisfactory sales performance.	89 (22.3)	204 (51.0)	97 (24.3)	3 (0.8)	7 (1.8)	3.91	.804	High	1
There is a greater variety of products of the same type sold on the system.	35 (8.8)	93 (23.3)	104 (26.0)	40 (10.0)	9 (2.3)	3.37	.982	Medium	2
<b>Average</b>	<b>3.64 (More)</b>								

From Table 2 shows the frequency, percentage and standard deviation of the external environment factor opinion level. in terms of customer demand for sales channels on mobile commerce systems. It was found that the same product sold on the system had a high level of satisfactory sales (3.91), followed by a moderate variety of similar products sold on the system (3.37).

TABLE III. DISPLAYS THE NUMBER (FREQUENCY), PERCENTAGE, AND STANDARD DEVIATION. THE LEVEL OF OPINION OF EXTERNAL ENVIRONMENTAL FACTORS IN TERMS OF GOVERNMENT SUPPORT FOR SALES ON MOBILE COMMERCE SYSTEMS

External environmental factors (Government support to sell on the mobile commerce system)	Opinion Level					$\bar{X}$	S.D.	Interpret	Order
	Highest	High	Medium	Low	Very low				
The government sector has a clear promotion policy on the mobile commerce system.	35 (8.8)	118 (29.5)	188 (47.0)	43 (10.8)	16 (4.0)	3.28	.914	Medium	1
The government has organized training to educate about selling on the mobile commerce system.	17 (4.3)	67 (16.8)	152 (38.0)	42 (10.5)	3 (0.8)	3.19	.800	Medium	2
<b>Average</b>	<b>3.23 (Medium)</b>								

From Table 3, external environment factors regarding government support towards sales on mobile commerce systems. It was found that the respondents had the opinion level of the government sector has a clear promotion policy on the mobile commerce system at the moderate opinion level at 3.28, followed by the government has organized training to educate about selling on the mobile commerce system at 3.19 of moderate opinion level.

TABLE IV. SHOW MEAN AND STANDARD DEVIATION. SUMMARY OF EXTERNAL ENVIRONMENTAL FACTORS OPINION LEVELS

The level of opinion of external environmental factors	$\bar{X}$	Interpretation	Order
Selling the same products on the mobile commerce system	3.65	High	1
Customer demand for sales channels on mobile commerce systems	3.64	High	2
Government support to sell on the mobile commerce system	3.23	Medium	3
<b>Average</b>	<b>3.51</b>	<b>High</b>	

From Table 4 summarizes the level of opinions about external environmental factors. Overall, it was found that the average score was at 3.51, which was in a high level. The respondents who answered the questionnaire were of the opinion that selling the same product on the mobile commerce system was high level of opinion (3.65), followed by customer demand for sales channels on mobile commerce systems, as the second highest with an average of 3.64, and third with a medium mean (3.23), which is the government's support towards sales on mobile commerce systems.

**Hypothesis testing:** External environmental factors influence global mobile commerce acceptance.

H<sub>0</sub>: Environmental factors affect the global acceptance of sales through mobile commerce.

H<sub>1</sub>: External environmental factors do not affect the acceptance of global mobile commerce sales.

TABLE V. STEPWISE MULTIPLE REGRESSION ANALYSIS RESULTS OF EXTERNAL ENVIRONMENTAL FACTORS HAS RESULTED IN THE GLOBAL ACCEPTANCE OF SELLING PRODUCTS VIA MOBILE COMMERCE.

Independent variable	b	Beta	t-value	p-value
Selling the same products on the mobile commerce system	.278	.356	5282	.000*
Customer demand for sales channels on mobile commerce systems		-.059	-6.667	.506
Government support to sell on the mobile commerce system	-.093	-1.333	-1.974	.049*
Constant	3.675		21.011	.000*
R = .307 R <sup>2</sup> = .094 F = 14.440 p-value < .05				

\* Significant correlation level at the level .05 (p < .05)

As Table 5 shows, the study of external environmental factors affects the global acceptance of product sales through mobile commerce. It was found that environmental factors regarding government support for sales on mobile commerce systems has the most effect on the acceptance of the sale of products through the mobile commerce level with the forecast regression coefficient (Beta) equal to -1.333. Followed by the environmental factor for selling the same products on the mobile commerce system affects the acceptance of the sale of products through the global mobile commerce with a forecast regression coefficient (Beta) of .356, statistically significant level at 0.01. The external environmental factors regarding customer demand for mobile commerce channels does not affect the acceptance of the sale of products through the global mobile commerce.

Therefore, there is only selling the same product on mobile commerce and government sponsoring to sell on mobile commerce can explain the variability in the acceptance of merchandising through global mobile commerce. The dependent variable is influenced by the independent variable by 9 percent ( $R^2 = .094$ ). The regression equation can be generated as follows.

Y (Global Merchandising Acceptance via Mobile Commerce) = 3.675 + (-1.333) (Government Sponsorship on Mobile Commerce) + 0.356 (Sales of the same product on mobile commerce).

From the above equation, it can be seen that if the government's support for sales on the mobile commerce system is increased by 1 unit, while other factors are stable, the acceptance of the sale of products via mobile commerce world class will increase to 1.333 units. If the same type of product sales on mobile commerce is increased by 1 unit while other factors are stable, the global acceptance of selling products via mobile commerce will increase to 0.356 units.

Significant means the independent variable affects the dependent variable, which means external environment factors relating to government sponsorship on mobile commerce and similar products on mobile commerce affects the acceptance of the sale of products through the global mobile commerce at statistically significant .05 level.

## V. Conclusion/Recommendation

Analysis of external environmental factors influences global mobile commerce acceptance by using Multiple Linear Regression Analysis, it was found that external environmental factors concerning government support and selling similar products affects the acceptance of the sale of products through the international mobile commerce.

It was statistically significant at .05 level by external environmental factors regarding customer demand for sales channels on mobile commerce does not affect the acceptance of the sale of products through the international mobile commerce.

Therefore, the government should support the sale of products through the international mobile commerce system especially with small corporations or a group that sells OTOP products due to lack of knowledge and expertise in using this type of system. They may focus on comparing products of the same type in the system to optimize advertising, competitiveness, and to set reasonable prices.

Results from research on external factors influencing the global acceptance of electronic commerce on smart phones for small and medium enterprises in Thailand has shown that entrepreneurs in Thailand are interested to bring products to sell on the world-class online system. The government should provide support in terms of product management, choosing the right system for the product, competitors analysis as well as providing knowledge on how to use data from a world-class mobile commerce system in order to be able to use the data to analyze and formulate sales strategies appropriately.

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