DETERMINATION FACTORS FOR THE READINESS OF THAI SMALL AND MEDIUM AGRICULTURAL COOPERATIVES BUSINESS TO MARKET UNDER THE ECOMMERCE SYSTEM

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ABSTRACT

This study conducted on the secondary data of the business operations and the primary data of the top management's perception on the factors that determine the readiness of the firm to market under the e-commerce marketing system from 122 small and medium agribusiness organizations in Thailand, included with the agricultural cooperatives, food, flower, and handicraft. By using multiple regression analysis and hypotheses tested, the research results identify that readiness level of the firm are based on three folds: the organizational competitiveness level, perception of management on benefit of e-commerce to the agribusiness, and competitive marketing mix strategy under the market behavior and consumer behavior. The study had also highlights probability of occurrence of the disadvantage of the e-commerce or e-business to the market place.

Key words: Agricultural cooperatives, SME, E-commerce, E-business, Internet marketing

1. INTRODUCTION

While the business that using electronic technology to run their business is increasing enormously. The emergence and adoption of internet technology as an electronic medium of communication and commerce is bringing about changes not only in how firms operate and conduct business, but in how they compete and offer greater value to all stakeholders (Kim, 2005).

E-commerce is the buying and selling of products over the internet, the initiatives are focused on the business to consumer (B2C) model. While, the e-business embraces all aspects of electronically enabling a business, the initiatives are focused on the organization's core competencies and the business to business (B2B) model. The buying and selling of goods does not have to be via the internet but will be facilitated by electronic technologies and systems within and between businesses (Kim, 2005).

Under the building blocks of business process, people and technology, managers need to be aware that all three are linked and that the task is to ensure compatibility of needs, wants and requirements across all three to create a useful business model which defines how the organization will conduct its business.

This is the same in the agricultural cooperatives in Thailand. Since the agricultural cooperatives in Thailand still had low business performance in both business volume and member participation (Petchprapunkul, 2009). How they can prepare their organization to adapt the e-commerce business approach to create their better firm performance.

2. RESEARCH OBJECTIVE

This study intends to propose three main issues. Firstly is to identify the readiness factors for Thai small and medium agricultural cooperatives business to market under the e-commerce system. Secondly is the adaptation of e-business practice in Thai agricultural cooperatives organization during the year 2003-2008. Thirdly is to propose the advantage and disadvantage of the e-business marketing to the market place.

3. LITERATURE REVIEW

Though the investor owned firms (IOFs) and the cooperatives (Co-ops) have the difference in official goal (the organizational mission and it purpose with legitimacy, it informs public and stakeholder for the existence of the organization, and it pursue the effectiveness of the firm), but they have the similar operative goal (the organizational business purposes, employee direction and motivation, and it pursue the efficiency in the organization), (Daft, 2007; Jones, 2007; Petchprapunkul, 2009). The former has an objective for profit maximization and use the "profitability" to be performance measures, but the latter has an objective on only surplus from the difference between revenue and expense and use "service ability" to be performance measures. While the IOFs is a profit organization, co-op is not a non-profit but it is a not-for-profit (NFP) organization (Petchprapunkul, 2009).

Since they have similar operative goal, the IOFs for profit, the co-op for surplus, these two kinds of firms are both need to have the appropriate competitiveness and strategies to compete with their competitors. This literature review will elaborate the significant of the dependent and independent variables that most appropriate to measures the readiness of the cooperatives organization to market their business under the e-commerce system.

3.1 Dependent variable: Readiness level for e-commerce

The readiness of any organizations who would like to adopt the e-commerce approach into their firm can be assessed from the four kinds of measurements, they are: the "current using of internet" in the firm, "pertaining their own website", "performing the internet marketing", and "establishing a long term customer based".

3.1.1 Current using of internet

The current using of internet is the present circumstance of the level of the using of the internet among the firm, has the firm had used of internet to be a part of their business operation. For example, for information search, for public relation, for email etc. this is the primary level for all the

business organizations to prepare, to attain, and to be the e-commerce business organization. Therefore, the "current using of internet" is the first measurement in the dependent variable.

3.1.2 Pertaining their owns website
The second stage is the level that the business organization had constructed and established their owned website, for business promotion, for advertising, or digital selling. Therefore, the "pertaining their own website" is the secondary level for the firm that try to be the e-commerce business player. Therefore, "pertaining their own website" is the second measurement of the dependent variable.

3.1.3 Performing the internet marketing
Any business that had used the internet to be the tools for their e-commerce or e-business and run their business under the internet tool, both selling and buying for a period was identified as a mature e-commerce or e-business organization. Therefore "performing the internet marketing" is the third measurement of the dependent variable.

3.1.4 Establishing a long term customer base
The e-commerce or e-business organization that had been conducted their business for a long time must have their own long term customer base. Therefore, "establishing a long term customer base" is the fourth important dependent variable measurement in the model.

3.2 The first independent variable: Top management perceives benefit of e-commerce

In any organizations, if the top management perceived the benefits and advantages of e-commerce or e-business, they will then formulate the policy to reach to the organizational goal. Eventually crated the business plan for their middle manager and operating plan for their functional managers. These all management function will lead the human resource in the organization to work in a consistency way to the common business targets. In order to formulate an appropriate e-commerce or e-business policy, management should has at least four steps and processes of work: the appropriate internet budget, the use of internet tools, the reduced cost of business, and change in business process.

3.2.1 Appropriate internet budget
The firm should prepare and allocate their budget for their appropriate internet usage that meets to the organizational budget. Therefore the internet budget is the first appropriate measurement to assess the perception of top management on the benefit of e-commerce or the e-readiness of the organization.

3.2.2 Used of internet tools
The firms who will involve and conduct their e-commerce or e-business should have been established and use of the internet tools for a period of time. They should have the experience of using the internet tools in their business operation, such as website for communication with their customer, for promotion and so on. The firm should have their own and enough computers, ban-width, etc., Hence, the "used of internet tools" is essence to be a measurement in the first independent variable.

3.2.3 Reduce cost of business
Since the producer can directly contact their customer or send their business information via the internet, producer can gain the benefit from dis-intermediaries, therefore, their cost of business will reduced. The e-commerce and e-business cost of doing business is lower than the traditional business pattern. Therefore the "reduce cost of business" is a measurement of the first independent variable influence on the e-commerce performance, and will be included in the research model.

3.2.4 Change in business process
After the adoption of e-commerce or e-business system into their operation, the business process of the firm will be changed and the firm has to adjust its business management process to meet to the requirement of the e-commerce pattern. Therefore, the "change in business process" should be an importance measurement to assess the e-readiness of the e-commerce and e-business system.

3.3 The second independent variable: Organizational competitiveness

Firm that pertain computer literacy and informative literacy will finally lead to the competitiveness of the firm over their competitors. This organizational competitiveness can assessed through four kinds of measurements: competitive strategy, competitive marketing program, growth in new business revenue, and increase in market share.

3.3.1 Competitive strategy
According to "The Competitive Strategy: Technique for Analyzing Industries and Competitors (Porter, 1980), Porter proposed that every kind of business firm should done an industry analysis to assess the level of rivalry in that industry. This evaluation has to make through the assessment of four kinds of measurements: they are the new entry, substitute products, bargaining power of supplier, and the last one is the bargaining power of consumer.

Porter called his model the "Five force model", in this model, the level of rivalry in the industry is the dependent variable, while the other four forces are the independent variables. This model informs manager that, in order to compete with the competitor, management of the firm has to assess the four forces that will influence to the rivalry in the industry. Then the management will be realized that how and what types of strategies they should be launched in to the market place to compete with their competitors. Therefore, the "competitive strategy" will be an important measure of the second independent variable.

3.3.2 Competitive marketing program
According to the "Corporate strategy (Ansoff, 1965), a firm should formulate their corporate strategy to be the guideline for the manager and employees in the organization to work in a consistency way and go ahead to both the official goal and operative goal.

In the marketing concept, marketing is the devising of programs that successfully meet the forces of the market (Borden, 1964, p.428). The word "devising" means planning and decision making, and the word "program" means to set the marketing mix (product, price, place, and promotion) to fit to the target customer under the STP-marketing concept. The organization that can construct the appropriate marketing program will enhance their competitiveness. Therefore, the "competitive marketing program" is the second important measurement in the second independent variable of the model.

3.3.3 Growth in new business revenue
In related to the Competitive strategy (Porter, 1980) in section 3.3.1, Porter had also proposed the "Competitive advantage: Creating and Sustaining Superior Performance" (Porter, 1985). In this study, Porter proposed that any kind of firms should have been identified how and what level their firm had pertained the competitive advantage over the other firms.

In this study Porter called his model the "value chain". The main concept is that how the firm can generate the value to their customer. The value to customer will finally create the revenue and profit margin to the business organization. In this model the profit margin is the dependent variable, while the independent variables are two groups. The first group is the primary activities which will be supported by the supportive activities. These two groups of activities will finally create revenue and profit margin to the firm. Under this pattern this model claims that the appropriate management of the primary activities and supportive activities will create firm superior performance. The superior performance will then create the profit margin to the firm. Therefore the new way to do business will create the growth in new business revenue and finally extend the market share of the firm. Therefore, the "new business revenue" and "market share" will be the third and fourth measures of the second independent variable.

In this model, the primary activities are: inbound logistics, operations, outbound logistics, marketing and sales, and service. Primary activities will be supported by four types of supportive activities: firm infrastructure, human resource management, technology development, and procurement. These two groups of activities will enhance the new business revenue through the value chain.

3.3.4 Increase market share
As posited in section 3.3.3, the "market share" of the firm which increased from the extended in new business line or new product line will create and construct and expand the market share to the existing market and new market. Therefore the increase in market share is the fourth critical measurement of the second independent variable.

3.4 The third independent variable: Market and buyer Behavior

According to Borden (1964), he is the first academician to construct the term "marketing mix which means: product price, place, promotion. By exploring the general environment and competitive environment together with the SWOT analysis in the marketer side and the buyer behavior (Howard and Sheth, 1967) on consumer side, management of the organization will be able to construct the appropriated and competitive marketing mix strategies. These four elements of the marketing mix strategy will lead to the successful marketing management of the firm. Therefore, the "product", "price", "place" and "promotion" activities will be the four measurements in the third independent variable.

3.4.1 Product value and quality
Most of customer will look at the value of the product to their using and expect the good quality of the product. Therefore, the "product value and quality" is the first measurement of the third independent variables.

3.4.2 Pricing policy
Pricing of a firm should pertain competitiveness and relevance to the competitor and market price. Therefore the "pricing policy" is the second measurement of the third independent variable

3.4.3 Distribution channel policy
"Place" or "distribution channel" is the convenience to customer to buy such product and ask for service of a firm. E-commerce is the new pattern of business that cut off the middlemen and created the direct channel to contact with their customer. Therefore, "distribution policy" is the third measurement of the third independent variable.

3.4.4 Promotion and advertising
Under the e-commerce system, internet tool is the most efficient information and communication tools to run e-commerce or e-business. The producer can send the information about their products directly to their loyalty customer and new customer. If their product pertain high and pleasant quality to customer or buyer, the firm will successful and have higher sale volume. Therefore, the "promotion and advertising policy" is the fourth measurement in the third independent variable.

4. CONCEPTUAL MODEL

From the literature review, we can finally integrate the dependent and independent variables in to a conceptual framework. The frame work included of the three constructs of independent variables to explain the dependent construct, as posited in Figure 1.

In the conceptual model we have the "readiness levels of e-commerce or e-business in Thai small and medium agricultural cooperatives enterprise" to be the dependent variable (Y) with their four measurements: current using of internet (Y_{1-1}), pertained their own website (Y_{1-2}), performed the internet marketing (Y_{1-3}), and established a long term customer base (Y_{1-4}).

The independent variables are three kinds: firstly, the management perceived benefit of e-commerce or e-business (X_1), with its four measurements: internet budget (X_{1-1}), use of internet tools (X_{1-2}), reduced cost of business (X_{1-3}), and change in business process (X_{1-4}). Secondly, the organizational competitiveness (X_2), with its four measurements: competitive strategy (X_{2-1}), competitive marketing program (X_{2-2}), growth in new business revenue (X_{2-3}), and increase market share (X_{2-4}). Thirdly, the market and buyer behavior (X_3), with its four measurements: Product quality (X_{3-1}), pricing policy (X_{3-2}), distribution channel (X_{3-3}), and promotion and advertising (X_{3-4}).

5. ANALYSIS AND RESULT

The study had two parts: the first part is the descriptive statistics. The second part is the inferential statistics.

5.1 Descriptive statistics

In this study, the total of 1000 questionnaires had been sent to each of 250 agricultural cooperatives organizations, flower business organizations, food business organizations, and handicraft organizations. The questionnaires that had been got back from the respondents were 84 from the agricultural cooperatives business, 17 from flower business,

21 from food business, and 43 from handicraft business. The agricultural cooperatives organization had the highest respondent rate of 33.6% for the 84 number of questionnaire. From the four kinds of respondents, the agricultural cooperatives are the most significant sample in this study, as reported in Table 1.

The meaning of SME in this study is mean the business organization that had the registered equity not more than 20 millions baht of capital with the employee of not exceed than 50 persons and mostly located in Bangkok area. The sample organization had pertain the personal computer not more than 10 items.

From the first part of the questionnaire, which is general questions, the respondent reported that they use the internet for marketing function 98%, for financial and accounting 86%, for administrative work 72%, for manufacturing 46%, for advertising 46%, and for personal use aspect 44%. From the secondary data, mostly, they use their computer for the marketing function.

From the second part, the respondents were asked to evaluate the e-commerce activities in their firms based on the perception of benefit of e-commerce by the top management, the organizational competitiveness, and the knowledge of the top management of the marketing, consumer, and buyer behavior.

5.2 Inferential statistics

By using the multiple regression analysis calculated on the primary data collected from the mail survey, the results of the primary data reported that the three multiple regression equation from the enter method of regression analysis. The result give the three most appropriate model as elaborated in Table 2, Table 3, and Table 4.

5.2.1 t-test and F-test
According to the Table 2 of this study, the table reported the t-stat and F-stat in each model. From those three models, we will see that in the first model, when we run only one independent variable, the first independent variable or the perceive benefit of e-commerce by the top management had their relationship with the dependent variable. It means that the perception of benefit of e-commerce had the relationship with the readiness level of e-commerce in Thai small and medium agricultural cooperatives organization.

But, when we run two types of independent variables with the dependent variables, the study found that the first independent variable had less influencing power or affect magnitude to the dependent variable when compare to the second independent variable. When we run the whole three independent variables with their dependent variable, the third independent variable had no relationship with the dependent variable.

5.2.2 R^2 and R^2_{adj}
From Table 3, the R^2 and R^2_{adj} which are the coefficient of determination of the three models. From the R^2 value, we can see that the second model had higher R^2 value of 65.60% while the first model had only 50.80% of R^2 value. From the second model it means hat the "organizational competiveness" of the firm has relationship with the readiness level of e-commerce. But, when we add one more independent variable into the model, the market, consumer, and buyer behavior in to the statistical model, The R^2 value had not been increase any more. It is still at 65.60% as we had run only two independent variables. This means that the adding of the third independent variable into the model has not increase the reliability to the model any more. The market, consumer, and buyer behavior by the perception of the top management in this study had no relationship with the readiness level of e-commerce of the firm

5.2.3 Hypotheses tested
In this study the three hypotheses were stated and tested on its beta coefficient of the multiple regression analysis, as elaborated in Table 4. The study found that all of the three independent variables are significantly tested, but only the first and the second independent variable have the relationship with the readiness level of e-commerce in Thai small and medium agricultural cooperatives. The first independent variable: management perceived benefit of e-commerce has less effect on the e-readiness level. The second independent variable: the organizational competiveness of the firms has the highest relationship with the e-readiness level. The third independent variable has no any effect on the e-readiness level of Thai Agricultural cooperatives.

6. CONCLUSION

From the result of the study, it implied that the Thai small and medium agricultural cooperative businesses have their readiness and sufficient of the e-readiness for doing the e-commerce or e-business from the relationship between the second independent variable (the organizational competiveness) and the dependent variable (readiness level), and the management of the agricultural cooperatives had perceived the benefit of e-commerce or e-business from the relationship between the first independent variable (the management perceived benefit of e-commerce) and the dependent variable (readiness level). But, the management of the agricultural cooperatives business had low level of knowledge and understanding of the market behavior and buyer behavior under the marketing context, because the third independent variable (management knowledge of market and buyer behavior) had no relationship with the dependent variable (readiness level).

It implied that to enhance for the better firm performance of the agricultural cooperatives organizations, the policy maker and the board member of the cooperative should provide the knowledge to their board members, their cooperative mangers by any ways of training and human resource development for the advancement and competitive level of Thai small and medium agricultural cooperatives business under today changing and competitive market place

7. DICUSSION

According to the results, it can be concluded that the management of the agricultural cooperatives organization in Thailand, mostly perceived the benefit of e-commerce, and most of the agricultural cooperatives organizations pertain the competitiveness of the firm, but the top management has less marketing, consumer, and buyer behavior knowledge.

In practical, the Cooperative Promotion Department reported that from 2003-2008, and till this year, there are still less usage of the internet transaction or e-commerce

(between the co-ops and its members), or e-business (among the agricultural cooperative firms). Even in the Cooperative Promotion Department themselves, they are only use the internet for the registration and membership record.

8. IMPLICATION/SUGGESTION

8.1 The disadvantage of the e-commerce

Though there are lots of advantages from the e-commerce to both the business firm and the consumer. In the same time, their also pertain lots of disadvantages to the business organization. These disadvantages are three folds:

8.1.1 The over consumption
Under the economics aspect, the internet technology can send the marketer's information about their marketing planning and marketing program to their customer, their consumer and their buyer without the border. For example, the internet promotion about the market product and service, this will encourage the over consumption. Hence, the e-commerce not only do better and quicker business but also too much business.

8.1.2 The loose of the middlemen
In the supply chain, there are producer, distributor, wholesaler, retailer, and so on. Under the e-commerce system, it is middlemen elimination or less middle trader. We can say that under the e-commerce, the middle trader were move out and replace by the manufacturer themselves. It is likely to be under the monopolistic competition and duopoly.

8.1.3 Monopoly power
If the one dominant firm from the e-commerce business system had develop him self strongly year by year, it might be ultimately, the firm will reach to the monopoly power.

9. LIMITATION

There are three limitations in this study: the first is the sampling frame of this study, though most of the respondents are the cooperatives organizations, but it is also composed of the flower, food, and handicraft business. Therefore, the inferential statistics values not only come from the agricultural cooperatives but it also come from the other three kind of business.

Secondly is the timing of this research conducted is over five year ago, though the justification of the use of the results is still can be apply, but the practitioner should be aware about the changing environment of e-commerce and e-business.

Thirdly, the e-readiness factors of the cooperatives business are quite slower than the e-readiness factors in the investor owned firms (CPD, 2004).

10. FUTURE RESEARCH

Since we know that the lack of knowledge and perception of the marketing, consumer, and buyer behavior of the top management of the cooperatives is most critical. Therefore the research to know how to encourage and enhance the efficiency of the manger to conduct the e-commerce is important more than the other e-readiness factors which should be study and find the resolution as the first alternative to improve the performance of the cooperative firms.

REFERENCE

Ansoft, I.H. (1965), *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion,* New York, McGraw Hill

Borden, N.H. (1964), *The Concept of Marketing Mix,* Advertising Research, Vol.24, pp.2-7

CPD (2004), *Business of Agricultural Cooperative in Thailand,* Bangkok: The Cooperative Promotion Department.

Daft, R. L. (2007), *Understanding the Theory and Design of Organizations* (International student 0-324-42271-7 ed.): Thomson.

Galor, Z. (2003), Dividing the Results in a Cooperative and the Participation of Members. www.coopfalor.com

Howard, J. A., & Sheth, J. N. (1967), *A Theory of Buyer Behavior:* American Marketing Association.

Jones, G. R. (2007), *Organizational Theory, Design, and Change* (5 ed. Vol. -). New Jersey: Pearson Prentice Hall.

Kim, B. (2005), *E Issues for Agribusiness-The What, Why, How*: The University of Queensland

Petchprapunkul, C. (2009), *The Performance of Agricultural Marketing Cooperatives in Thailand.* DBA Dissertation, University of South Australia, Adelaide.

Porter, M. E. (1980), *Competitive Strategy: Technique for Analyzing Industries and Competitors*: The Free Press.

Porter, M. E. (1985), *Competitive Advantage: Creating and Sustaining Superior Performance* The Free Press.

Appendix

Table 1: Classification of type of respondent

Type of business	population	Sample size	No. of respondents	%	Usable	%
Agricultural cooperatives	-	250	84	33.6		
Flower	-	250	17	6.8		
Food	-	250	21	8.4		
Handicraft	-	250	43	17.2		
	Over 30000	1000	165	16.5	122	12.2

Table 2: t-stat and F-stat values (at .05 significant level)

		t-stat	Sig.	F-stat	Sig.
Model 1: $Y = \beta_0 + \beta_1 X_1 + \varepsilon_1$	(Constant)	-.907	.366		
	X_1	11.138	.000	124.060	.000

Model 2: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon_I$	(Constant)	-.861	.391		
	X_1	1.623	.107		
	X_2	7.147	.000	113.452	.000
Model 3: $Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon_I$	(Constant)	-.255	.799		
	X_1	1.649	.102		
	X_2	6.880	.000		
	X_3	-.395	.693	75.151	.000

Table 3: Comparing three multiple regression models

Three Multiple Regression Models	Multiple of Correlation	Coefficient of Determination (R^2)	$R^2_{adj.}$	Standard Error of estimation
1:$Y=\beta_0+\beta_1X_1+\varepsilon_I$	.713	$R^2 = 0.508$ (50.80%)	$R^2_{adj.} = 0.51$	3.1320
2:$Y=\beta_0+\beta_1X_1+\beta_2X_2+\varepsilon_I$	.805	$R^2 = 0.656$ (65.60%)	$R^2_{adj.} = 0.65$	2.6308
3:$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon_I$	.467	$R^2 = 0.656$ (65.60%)	$R^2_{adj.} = 0.65$	2.6402

Table 4: Beta value

		Beta	Sig.
Model 1: $Y = \beta_0 + \beta_1X_1 + \varepsilon_I$	(Constant)		
	X_1	.713	.000
Model 2: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon_I$	(Constant)		
	X_1	.154	-
	X_2	.678	.000
Model 3: $Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\varepsilon_I$	(Constant)		
	X_1	.158	-
	X_2	.691	.000
	X_3	-.027	-

Figure 1:
Determination factors for the Readiness of Thai Small and Medium Agricultural Cooperatives Business to Market under the E-commerce System