# The Influencing Factors and the Approach to Enhance the Standard of E-Commerce for Small and Medium Enterprises in Bangkok

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*Abstract*—The objectives of this research paper were to study the influencing factors that contributed to the success of electronic commerce (e-commerce) and to study the approach to enhance the standard of e-commerce for small and medium enterprises (SME). The research paper focused the study on only sole proprietorship SMEs in Bangkok, Thailand. The factors contributed to the success of SME included business management, learning in the organization, business collaboration, and the quality of website. A quantitative and qualitative mixed research methodology was used. In terms of quantitative method, a questionnaire was used to collect data from 251 sole proprietorships. The System Equation Model (SEM) was utilized as the tool for data analysis. In terms of qualitative method, an in-depth interview, a dialogue with experts in the field of e-commerce for SMEs, and content analysis were used.

By using the adjusted causal relationship structure model, it was revealed that the factors affecting the success of e-commerce for SMEs were found to be congruent with the empirical data. The hypothesis testing indicated that business management influenced the learning in the organization, the learning in the organization influenced business collaboration and the quality of the website, and these factors, in turn, influenced the success of SMEs. Moreover, the approach to enhance the standard of SMEs revealed that the majority of respondents wanted to enhance the standard of SMEs to a high level in the category of safety of e-commerce system, basic structure of e-commerce, development of staff potentials, assistance of budget and tax reduction, and law improvement regarding the e-commerce respectively.

*Keywords*—Electronic Commerce, Influencing Factors, Small and Medium Enterprises.

## I. INTRODUCTION

NOWADAYS small and medium enterprises must face with severe competition. Therefore, there is a need to enhance the effectiveness of all aspects of the organization to be able to compete with both domestic and international competitors. One of the most important strategies is to implement information technology and communication to be tool in to increase the overall effectiveness of the organization [1], [2], [3], [4], [5]. This strategy concurs with the Thai public policy which encourages Thai business to use technology and knowledge to enhance their level of competition. This is a shift from a low cost advantage to a knowledge based advantage.

The process of doing modern business involved the information technology and communication technology. This

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is because information technology is one of the success factors that can be applied into every facet of business transaction especially electronic transaction or e-commerce. The positive consequences of e-commerce are ubiquitous such as to be able to process business transactions at any time, reduce time and expenses of processing business transactions, increase the effectiveness of business, increase the sales and customer bases, and be able to compete with the global market head-on.

The era of e-commerce has changed the global business and economic view. The growth of fast internet has provided a new channel of marketing and selling. As a consequence, the way of doing business has become more automatic, effective; and thereby increasing the opportunities for SME to compete in the global trade directly [3], [4], [5], [6]. Therefore, the new form of trade has gained popularity in a short time. In the beginning of e-commerce, there were problems such as a lack of confidence in safety, a lack of understanding of the system, a lack of security in payment online, a lack of support from commercial banks, limitation in technology, and a lack of proper legal system. Much research in the past pointed out that the factors influencing the success of e-commerce were both external factors such as the full support of the government [7], [8], [9], [10], [11] and internal factors such as leadership [5], [9], [12], skills and knowledge of personal [5], [7], [13], [14], [15], organization structure and strategies [5], [9], [11], [16] [17], technology management [7], [9], [11], [17], [16], good relationship with customers [15], [17], [18], business collaboration [17], [19], [20], [21], and quality and reliability of website [3], [6], [22], [23], [24], [25].

The success of e-commerce would benefit small and medium enterprises enormously. The implementation of e-commerce is also the main strategy of Thai Information Technology and Communication Plan for 2009 – 2013 which aimed to stimulate the Thai economy and create a knowledge base society. The findings of this paper will help to understand the influences of factors that contribute to many facets of e-commerce success and the approach to enhance the standard of e-commerce for small and medium enterprises in Thailand. Moreover, the paper suggests policies to help develop and support the e-commerce for SMEs to the international level.

The purposes of this research paper were to:

1) To study the factors that contributed to the success of e-commerce in the SMEs in Bangkok such as business management, learning in the organization, business collaboration, and quality of the website.

2) To study the influences of the factors that contributed to the success of e-commerce in the SMEs in Bangkok.

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3) To study the approach to enhance the standard of e-commerce in the SMEs in Bangkok.

## II. Research Methodology

This paper utilized a mixed research method of quantitative and qualitative approach. For the quantitative approach, a questionnaire was tested for content validity by using Item-Objective Congruence (IOC) and was tested for its reliability by using Cronbach Alpha. Then, data were collected from small and medium enterprises which used e-commerce and registered with Department of Business and Commerce Development, Commercial Ministry. The sampling was conducted by using systematic random sampling from 251 respondents from a total of 376 samples in the population. This is about 66.75 percent. For the qualitative approach, in-depth interviews, dialogues with experts in the field of e-commerce, and content analysis were utilized. The research framework for the causes of the factors that contributed to the success of e-commerce implemented was the structural Equation Model (SEM), Measurement Model, and Structure Model allowed the researcher to study both latent variables and observation variables [26].

The scope of variables studies are as follows;

1) Business management (MANAGE) is a latent variable which is composed of characteristics of organizing (MORG), management and leadership (MLEAD), management and information and technology (MIT).

2) Learning in the organization is a latent variable which is composed of employee learning (LEMP) and Learning in organization (LORG).

3) Business collaboration (COLAB) is a latent variable which is composed of the observable variables such as customer cooperation (CCRM) and collaboration in the organization (CERP) and Collaboration with seller (CSCM)

4) The quality of website (WEBQUAL) is a latent variable which is composed of observed variables such as the quality content of website (WEBQUAL), the quality of Website's design (WDESI), the easiness of using website (WEASY), the benefits of using website (WUSE), and the trust ability of website (WTRUST)

5) The success of e-commerce (SUCCESS) is a latent variable which is composed of the observed variables such as the financial success (SFIN), and the none-financial success (SNFIN).

## III. Results

The majority of the 251 respondents had an average of 3.47 years of operating in e-commerce business. The average number of employees for each organization was 2.63 persons. The form of e-commerce business was business to customer (B2C). The products and services were tangible products. The characteristic of business was a website business and with no store location. Business orders were done online and payment was offline. Shipment of product was offline. The business had developed the system of e-commerce with system development by its own staff.

### A. The Results of Structural Equation Model Analysis

The Structural Equation Model of the factors that contributed to the success of e-commerce model had assumptions that were consistent with the empirical data at a good level. The adjusted causal relationship structure model of factors contributing to the success of e-commerce for SMEs was found to be congruent with the empirical data at a good level. The goodness of fit index was determined to be $\chi^2$=54.366, p-value=0.0789, RMSEA=0.036, SRMR=0.0281, CN=291.221, GFI=0.972 and AGFI=0.917. The following figure shows the relationship of variables.

### B. The Hypotheses Testing

The hypotheses testing of adjusted model revealed the results that support what the researcher had expected. From the regression coefficient of the variable and t-value, the direction of relationship of the variables was shown in table I and II. The learning in the organization (LEARN) had received positive influence from the business management (MANAGE). The business collaboration (COLAB) had received positive influence from learning in organization (LEARN) and had received positive indirect influence from business management (MANAGE). The quality of website (WEBQUAL) had received positive influence from learning in organization (LEARN) and indirect positive from business management (MANAGE). The quality and success of e-commerce had received positive influence from business collaboration (COLAB) and indirect positive influence from learning in the organization (LERARN) and business management (MANAGE). The variables explained the variance of learning in organization 98.7 percent, business collaboration 94.7 percent, quality of website 71.1 percent, and success of e-commerce 40.8 percent.
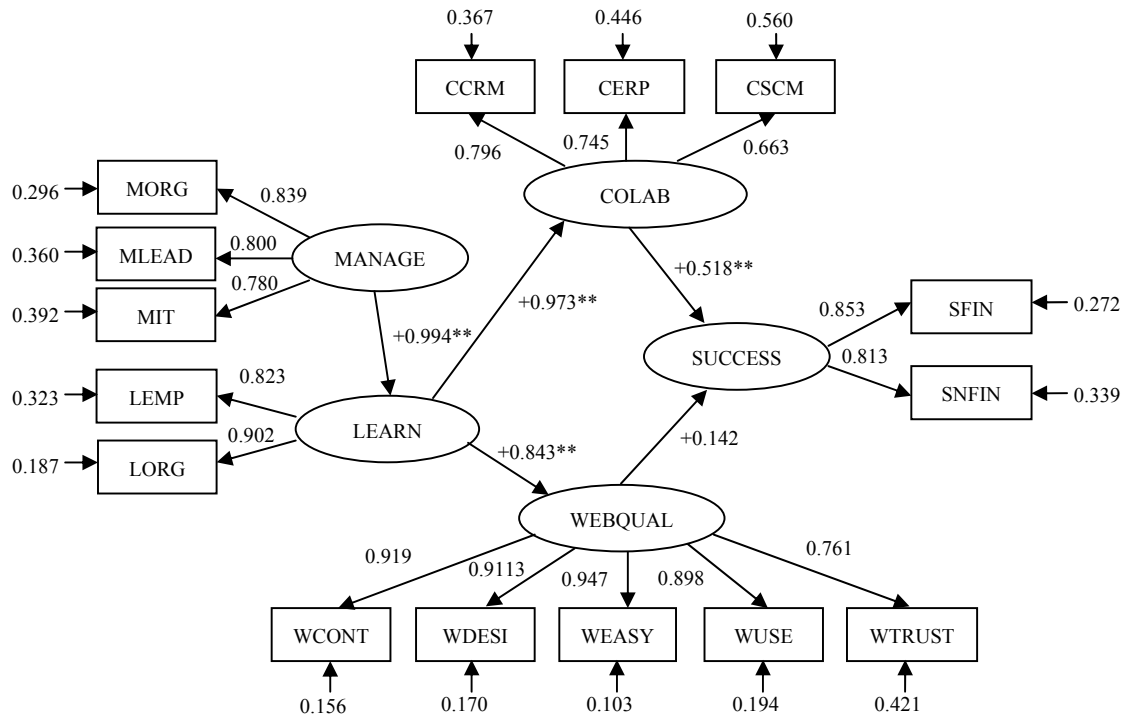
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Fig. 1 The structural equation modelling results

TABLE I
THE STANDARDIZE REGRESSION COEFFICIENTS BETWEEN VARIABLE IN THE ADJUSTED MODEL

| Dependent Variable | $R^2$ | Effect | Independent Variable | | | |
|---|---|---|---|---|---|---|
| | | | MANAGE | LEARN | COLAB | WEBQUAL |
| LEARN | 0.987 | DE | 0.994** | - | - | - |
| | | IE | - | - | - | - |
| | | TE | 0.994** | - | - | - |
| COLAB | 0.947 | DE | - | 0.973** | - | - |
| | | IE | 0.967** | - | - | - |
| | | TE | 0.967** | 0.973** | - | - |
| WEBQUAL | 0.711 | DE | - | 0.843** | - | - |
| | | IE | 0.838** | - | - | - |
| | | TE | 0.838** | 0.843** | - | - |
| SUCCES | 0.408 | DE | - | - | 0.518** | 0.142 |
| | | IE | 0.619** | 0.623** | - | - |
| | | TE | 0.619** | 0.623** | 0.518** | 0.142 |

*Significant at α = 0.05, **Significant at α =0.01

TABLE II
THE RESULT OF HYPOTHESIS TESTING

| Relationship | Direction | β | $t$ value | Result of Hypothesis |
|---|---|---|---|---|
| MANAGE → LEARN | + | 0.994 | 13.500** | Support |
| LEARN → COLAB | + | 0.973 | 13.738** | Support |
| LEARN → WEBQUAL | + | 0.843 | 14.040** | Support |
| COLAB → SUCCES | + | 0.518 | 3.836*** | Support |
| WEBQUAL → SUCCES | + | 0.142 | 1.145 | Not Support |

*Significant at α = 0.05, **Significant at α =0.01

*C.The Results of the Study to the Approach of Enhancing the Standard of E-Commerce of SMEs*

The results of the study to enhance the standard of e-commerce of SMEs by using 5 levels of Likert scale revealed that the majority of respondents wanted to have major improvement in the standard of e-commerce especially the safety issue with the average of 4.52 and the rest were the standard of basic concept of e-commerce, standard of potential of staff, standard of investment and tax, and standard of law regarding e-commerce with the averages of 4.42, 4.40, 4.37, and 4.29 respectively.

IV. RECOMMENDATIONS

From the study, there are some important recommendations. Small and medium enterprises which use e-commerce should adjust the organization framework and business management to create teamwork and collaboration within the organization and outside the organization as with customers for example. This can result in greater effectiveness and create a good relationship with customers and business partners under a highly competitive environment. Moreover, the vitality of learning in the organization and the organization culture of learning can be the key to continuous organization development. Government support should focus on the enhancement of the global standard and government needs to provide tangible assistances in terms of safety of e-commerce, basic structure of e-commerce, human capital development, financial support, tax reduction, and laws regarding of e-commerce. Most important of all is to provide knowledge and understanding to the Thai customers to instill confidence in e-commerce.

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