The E-S-QUAL influencing Using Electronic Commerce

Kritiya Rangsom[1], Wasun Khan-Am[2]

[1]Dept. of Information Systems
Faculty of Business Administration, RMUTT
PathumThani, Thailand
e-mail: gritiya_r@rmutt.ac.th
[2] Dept. of Information Systems
Faculty of Business Administration, RMUTT
PathumThani, Thailand
e-mail: wasun_k@rmutt.ac.th

Abstract— This article aims to study the electronic commerce assessment level using E-S-QUAL and the influence of E-S-QUAL on electronic commerce usage. The population of this research is people who use the internet. The research sample employs purposive sampling, selecting respondents with an experience in electronic commerce usage. The survey tool is a questionnaire developed from the E-S-QAUL question and the reasoned action theory. The Cronbach alpha value of this questionnaire is .819. After two-month collecting data, the number of samples is 181. The research statistics were: arithmetic means, standard deviation, reliability analysis, correlation analysis, and analyzing a relationship with multiple regression analysis. The result showed that all variable arithmetic mean is pretty high, between 3.51 and 4. Each component had a statistical Cronbach alpha reliability value of more than .6. It also found that there was a correlation among all variables. When analyzing data with multiple regression analysis, factors affecting behavioral intention were attitudes and fulfillments. The regression equation can be created as: BI = .106 + .464A + .495FU.

Keywords; E-commerce; E-S-QUAL; Services Quality

I. INTRODUCTION

A. Statement of Problem

Now, everyone knows we are in the digital age, which is full of information technology. The world's population lives are regularly interacting with digital systems. The daily life activity of people in this era depends on the Internet and mobile phone. For example, if they love to talk with their friends, they almost use a chat application to replace a traditional phone call. People also create relationships with partners or customers via internet communication. Their entertainment comes from watching online movies or listening to online streaming. Another activity for people in the digital world is online shopping via electronic commerce. E-commerce shopping is one of the most popular forms of sourcing for goods and services with people on the Internet and in the digital age

Today, there are two platforms of the electronic commerce system a website platform and a mobile application platform. On the website platform, the user uses an electronic commerce system service via the website. Users in this type of service are going to use it through a web application. They feel free to view and choose the products without condition. Whenever they want to buy goods from an electronic commerce system, they need to enroll in becoming a member. Then the member will be entitled to buy products. The user can proceed to buy their purchasing order. When a user wants to buy an electronic commerce product through a mobile application installed on a mobile phone, firstly, they need to set up an e-commerce service provider application. They need to sign up to become a member of an e-commerce provider. After finishing these two processes, they have the right to access, view, select and purchase products from the services of the e-commerce service provider system. Since this activity doing on mobile phones, it is called mobile Electronic Commerce or M-Commerce.

The development of e-commerce systems today has developed a system that caters to the user. System development pays attention to system quality. The developed system must be able to attract and meet the user requirement well. Developing an efficient e-commerce

system will give service providers a great benefit. To create a quality system, several researchers and academics have attempted to develop an index to measure quality.

In this research, we need to find out the relationship between quality scale and behavioral intention of electronic commerce user.

B. *Objective*

The aim of this research defined as follow:

1. To study an assess level of e-commerce service quality scale
2. To Analyze relationship among e-commerce service quality scale and behavioral intention of user

II. LITURATURE REVIEW

A. *E-S-QUAL Scale [1]*

E-S-QUAL stands for e-core service quality scale. It is a multiple-item scale that use to measure service quality. This quality is delivered by Web sites on which customers shop online. The tools are composed of a basic 22-item scale and divided into four dimensions including efficiency, fulfillment, system availability, and privacy.

The meaning of each dimension describes as follow: dimension 1 an efficiency is the ease and speed of accessing and using the website, dimension 2 a fulfillment is the extent to which the website that promises about order delivery and item availability are fulfilled, dimension 3 a system availability is the correct technical functioning of the web site, and dimension 4 a privacy is the degree to which the web site is safe and protects customer information

This research applies a 4-dimension of E-S-QUAL as an independent variable.

B. *Theory of Reasoned Action*

The theory of Reasoned Action [2] is a psychological theory. This theory aims to predict behavioral intention. It was developed by Martin Fishbein and Isaac Ajzen [2-3]. The main idea of this theory is to study the relationship between attitude and behavior. It is inherited from the theory of correlation between attitude metrics and consensual expression behavior [4]. The reasoned action theory presents three key components: behavioral intention, attitude, and subject norm. The correlation model is shown in the equation form as

$$\underset{(BI)}{\text{Behavioral intention}} = \underset{(A)}{\text{attitude}} + \underset{SN}{\text{subjective norm}}$$

The equation meaning is the person who within this theory will tend to act anything, they will take an action or act on it within a short period of time. With this meaning, the actual and behavioral intention as the same. They close to each other. The rationale behind this theory is because a personal behavioral intentions and actions are connected. In addition, it's an incentive to attract people to do what they set out to do

In this research, the behavioral intention variable was used as a dependent variable. The attitude was used as an independent variable.

III. RESEARCH METHODOLOGY

A. *Population and Sample*

The population of this research is any internet user. the sample was sampling form population by using purposive method. We use a timeframe, 2-month, as a limitation for collection data, the number of samples is fifteen time of variable in equation (six variables), it should be 90 [5].

B. *Questionmaire*

The research questionnaire was developed from the E-S-QUAL scale and theory of reasoned actioned theory by the researcher. There are three sections of the questionnaire follow:

Section 1: this section asks a respondent about user attitude toward electronic commerce.

Section 2: this section asks a respondent about E-S-QUAL of service that s/he take.

Section 3: this section is the last section of questionnaire and ask a respondent about behavioral intention of him/her.

C. *Time and Place*

The periodic of collecting data is two months and the place for conducting data is RMUTT.

D. *Statistics*

The statistics was use to analyze data in this research divided into two types were descriptive statistics and hypothesis test. The descriptive statistics were: mean, standard deviation, and reliability analysis. The hypothesis test was: a correlation test, and a multiple regression analysis.

E. *Reserch Framework and Hypothesis*

The research framework and hypothesis defined as figure below.

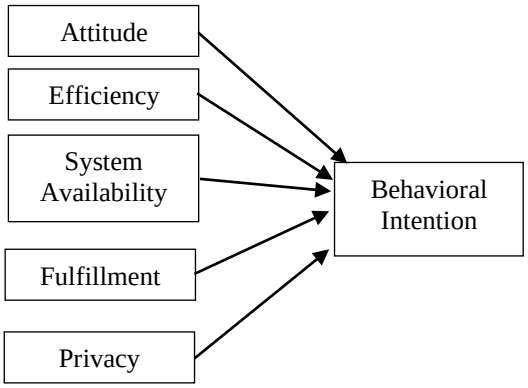

Figure 1. Research Framework

Where:

Attitude is an attitude toward a behavioral intention to use e-commerce

E-S-QUAL is a 4-dimension and 22 questions of E-S-QUAL. It concludes of efficiency, system availability, fulfillment, and privacy.

Behavioral Intention is developed from the TRA

According to the research framework, the five hypothesis tests was set up as:

1. There is a positive relationship between Attitude and Behavioral Intention.
2. There is a positive relationship between Efficiency and Behavioral Intention.
3. There is a positive relationship between System availability and Behavioral Intention.
4. There is a positive relationship between Fulfillment and Behavioral Intention.
5. There is a positive relationship between Privacy and Behavioral Intention.

IV. RESULT

A. Descreptive Analysis

This result uses the periodic of time as a limitation for conducting the research. After end of periodic of time, the data was collected from respondent is 181 respondents.

Since there were six variables in this research, one dependent variable and five independent variables. The mean and standard deviation of each variable was shown in next table.

TABLE I. MEAN AND STANDARD DEVIATION

Variable	Mean	SD.
Attitude (A)	3.73	1.02
Efficiency EF	3.80	.95
System availability (SY)	3.73	.98
Fulfillment (FU)	3.78	.94
Privacy(PR)	3.78	1.01
Bahavioral Intention (BI)	3.71	1.01

In Table I, the mean value of each variable was at high level, larger than 3.51. the respondent attitude for using E-commerce was at High level. They opinion about E-commerce website evaluation including efficiency, system availability, fulfillment, and privacy was at high level also. The behavioral intention of respondent for using E-commerce website was at high level too. The maximum mean value is efficiency variable of 3.80. The minimum mean value is behavioral intention of 3.71.

B. Reliability Test

At the beginning of hypothesis testing, each variable should take a reliability test to ensure that these were suitable to run the multiple regression analysis test. The result of reliability analysis was shown as table below.

TABLE II. RELIABILITY TEST

Variable	α-test
Attitude (A)	.876
Efficiency EF	.969
System availability (SY)	.939
Fulfillment (FU)	.963
Privacy(PR)	.939
Behavioral Intention (BI)	.888

In Table II, alpha-values of each variable higher than .6, it passed a standard criterion of using variable in regression analysis. Therefore, they will be used in next analysis.

C. Correlation Test

The second test is correlation analysis. The result of this test was reported in next table.

TABLE III. CORRELATION TEST

	Correlation test				
	EF	***SY***	***FU***	***PR***	***BI***
Attitude (A)	.865**	.835**	.826**	.775**	.858**
Efficiency EF		.926**	.919**	.879**	.850**
System availability (SY)			.916**	.867**	.844**
Fulfillment (FU)				.921**	.855**
Privacy(PR)					.813**

** .01 significant

In Table III, there were correlation with each couple of variables and each value was at high level. All test values were significant of .01.

D. Regression Analysis

Since all variables pass a reliability and correlation analysis, the multiple regression was operated. The result of this operation is demonstrated in next table.

TABLE IV. REGRESSION ANALYSIS RESULT

Variable	B	95% CI	β	t	p
(constant)	.106	[-.169,.380]		.762	.447
A	.464	[.350,.579]	.472	8.009	.000
FU	.495	[.371,.618]	.466	7.912	.000

Note: R^2_{adj} = 0.800 (N=181, p=0.000) CI= confidence interval for *B*

According to the regression model, the result reported that model and collecting data was consistent (p = 0.000). The coefficient of the independent variable, attitude, is .464, the coefficient of the independent variable, fulfillment, is .495, and each p-value of every t-test was significant. This significant value showed that the coefficient was able to apply. According to the model, two selected independent variables can describe 80.00% of the behavioral intention variable variance.

V. Conclusion and Discussion

A. Conclusion

According to the descriptive statistics, the mean value of factors, attitude, efficiency, system availability, fulfillment, and privacy; had values of 3.73, 3.80, 3.73, 3.78, and 3.78. The mean value of an independent variable, behavioral intention, was also high, 3.71. This result answered the first objective of this result.

The correlation test indicated that there was a correlation between independent factors and dependent variables. The regression analysis stated that there were only two factors, attitude and fulfillment, affect behavioral intention. The regression formulated equation was

$$BI = .106 + .464A + .495FU$$

the independent variable describes 80% of dependent variable variance. This result was an answer of the second research objective.

B. Discussion

The discussion on applying E-S-QUAL and the Influence of E-S-QUAL is as follow:

Firstly, can we apply E-S-QUAL to predict a behavioral intention? the research result show that the E-S-QUAL capable to measure an opinion about the quality of electronic commerce website. The reason is there is a relationship between fulfillment, and behavioral intention.

Secondly, the Influence of E-S-QUAL, the hypothesis test shows that only one dimension of E-S-QUAL has an effect on behavioral intention. This is opposite from the original concept of E-S-QUAL.

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References

[1] A. Parasuraman, A. Malhotra, and V.A. Zeithaml, "E-S-Qual: A Multiple-Item Scale for Assessing Electronic Service Quality," Journal of Service Research, Vol.7, pp. 1-22, Feb, 2005.

[2] I. Ajzen, and M. Fishbein, Understanding attitudes and predicting social behavior, Englewood Cliff, NJ:Prentice-hall, 1980.

[3] M. Fishbein, and I. Ajzen, Belief, attitude, intention, and behavior: An Introduction to theory and research, Reading, MA:Addison-Wesley, 1975.

[4] J.L. Hale, B.J. Householder, and K.L.Greene, The Theory of reasoned action In J.P., n.p., 2002.

[5] M.A Pett, N.R. Lackey, and J.J. Sullivan. Making Sense of Factor Analysis: The Use of Factor Analysis for Instrument Development in Health Care Research., SAGE publications, Thousand Oaks., 2003.