

The Influence of E-Service Website E-Commerce Quality to E-Customer Satisfaction

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Abstract—E-commerce has been thought as a very good alternative for individual nor companies to join business in reaching out new customer. Shopping by using e-commerce system must be good in-service side, so that customers satisfactions can improve and will impact to the sale of e-commerce website. The Purpose of this paper is to examine the effect of efficiency, system availability, fulfilment and privacy in e-service on customer e-satisfaction is seen from the perception of students as e-commerce users. The sample is the student with management business major in colleges and universities in Batam. The method of this research is a survey. The technique of data analysis uses PLS-SEM analysis. The result that stated e-service had a positive impact to e-satisfaction customers in online system. The conclusions are efficiency, system availability, fulfilment, and privacy are very impact e-satisfaction variable.

Keywords—*e-satisfaction; e-service; efficiency; fulfilment; privacy; system availability*

I. INTRODUCTION

Today almost business firm use technology dan all activities are facilitated by technology. Traditional shopping activities require coming to a shopping center to shop for our needs, now it can be done at home. Electronic commerce that is being widely used to carry out online business processes is called e-commerce. Transacting using e-commerce websites, it is very easy for customers to shop. The development of e-commerce in Indonesia is very rapid and can be a promising way of doing business. This is due to several factors, such as internet users which are increasing sharply every year. Based on the results of a survey conducted by the Indonesian Internet Network Organizing Association (APJII) said that in 2016, it had indicated an increase in internet users by 58.8%. APJII found that 132.7 million people were connected to the internet from 256.2 Indonesians, but in 2014 Indonesian internet users, only 88 million internet users.

E-commerce is growing very rapidly and provides good opportunities for business [1]. The company can increase sales because the market share extends to various regions that were previously unreachable. In addition, the company can increase profits due to sharp increase in sales, easy transactions and reduce the company's operating costs such as advertising costs. E-commerce competition is very high, this can be seen from several e-commerce websites that continue to emerge such as Tokopedia.com, Lazada, Bukalapak, and so on. This competition can be seen from how many people shop through e-commerce websites, the more people shop, the higher the sales level of the company. Other factors can also affect the level of e-commerce sales such as attractive web design, promotions carried out, services on the website, and information quality [1].

Research related to this topic has been studied by Sharma [1], in Nepal, using the Nepal Telecom e-commerce website. The results of the study stated that a well-developed e-

commerce website is not only seen based on advertising from the value of a product, but from the service factors offered and enhanced by the company. The quality of e-commerce websites plays an important role in the customer's intention to repurchase [2], to achieve leadership in the online market, it is important for companies to guarantee the quality of their e-commerce system. Customer satisfaction must precede the quality of service, because the quality of services that will provide customer satisfaction factors and the behavior of the customer's intention to repurchase [3]. The research had ever been conducted in Indonesia was research from Jonathan [4], result of the research founded that e-service quality had influence to customer satisfaction, customer satisfaction had influence to customer loyalty, and e-service quality and -customer satisfaction had influence to customer loyalty.

This research is a replication of research conducted by Sharma [1]. The difference in this study with previous research are variables used and sample selection. Previous research took samples from Nepal Telecom e-commerce website customers in Nepal using electronic questionnaires. Meanwhile, this study will focus on a sample of students majoring in business management from several universities in the Batam City, Indonesia. The reason for using this sample is because the average student is an e-commerce user and fills the gap in the sample, seeing satisfaction from the student's point of view. The author hopes that this sample can be presented by presenting the e-service perception given to customers who shop on e-commerce websites on e-satisfaction of these customers. Based on the background described above. The purpose of this study is to find out how the effect of efficiency, system availability, fulfilment and privacy in e-service on customer e-satisfaction is seen from the perception of students as e-commerce users. The expected benefit of the results of this study is to enter the company to understand how customers want so that they can evaluate policies related to the company's e-commerce website, so that they can continue to improve their performance.

II. LITERATURE REVIEW

The research conducted by Sharma [1] was aimed to know how big the quality of online service to website e-commerce and contribution of online service to e-business promotion quality. The objects of the research were the customers of Nepal Telecom. The result of the research found that information and online service quality were main decider for customer's satisfaction and continuity of website e-commerce. The research conducted by Parasuraman [5] was aimed to describe development, improvement, evaluation, property, and application potential from a few items scale to measure and assess e-service quality from sites where the customers shop. The result of the research was all items founded in the research expressed that the items belonged to service from website e-

commerce decided success and company quality, because it was seen from how the quality service given to their customers.

The research conducted by Vida [6] was aimed to identify evaluation criteria from website e-commerce quality considering the typicality of customer's behavior from Lithuania. The result of the research was founded website quality indicator was main grade in website e-commerce, if the grade was low, the owner of the website should pay more to get many more attentions and efforts to analyze quality of its website. The research the had ever been conducted in Indonesia was research from Jonathan [4] which was aimed to know the influence of e-service quality to customer satisfaction and the impact to customer loyalty to PT BayuBuana Travel, Tbk. The result of the research had been founded that e-service quality had influence to customer satisfaction, customer satisfaction had influence to customer loyalty, and e-service quality and - customer satisfaction had influence to customer loyalty.

A. Development of Hypothesis

According to Parasuraman [5] that the level of efficiency of an e-commerce website can be assessed from the ease of the customer in using the website, structured appropriately and little information needed by the company that will be input for the company from consumers. Efficiency can also be seen from how companies simplify and speed up website access. Efficiency has a strong effect in influencing the e-statistic factor because, efficiency is a critical factor in seeing firsthand the quality of service from the website. Based on the description above, the research hypothesis is formulated:

H1: Efficiency in e-service quality has a positive effect on the level of customer e-satisfaction in the online system.

Availability of systems in e-commerce websites that refer to the problem of content contained in e-commerce websites and include the completeness, accuracy, format and currency aspects of information conveyed by the e-commerce market [7]. The availability of the system in the online scope of the e-commerce Website can be seen from a variety of perspectives, such as how the web page does not crash, the system of the product is fast and not jammed, the quality of service, website system design, the quality of human-computer interaction, is always available for business activities and more. Good system quality in an e-commerce site is already seen as a necessary measure to be said to be successful, when it can assess and evaluate website usage [8,9]. It could be said if the availability of the system is well prepared and implemented for e-commerce websites, it can increase customer satisfaction. Based on the above opinion, the hypothesis can be developed as follows:

H2: System availability on e-service quality has a positive effect on the level of e-satisfaction of customers in an online system.

According to Wolfinbarger [10] guarantees or reliability involve an accurate representation of the product, timely delivery and accurate orders. Meanwhile, according to Parasuraman [5] the factor referred to as customer service in this guarantee contains items related to the company's

willingness to respond to customer needs, the company's interests in solving problems, and the accuracy of the questions answered. This dimension, very good as other products may be relevant for customer assessment of service quality on the website, this needs to be tested further. This factor contains a level of customer trust, if the customer wants something to buy the product and has already paid for it, the company must fulfill the customer's desire to deliver the product accurately, timely and reliably. Customer trust due to customer order guarantees in accordance with customer expectations greatly affects the level of satisfaction. According to Wolfinbarger [10], revealed that the guarantee rating (fulfilment) is the strongest predictor of quality and customer satisfaction, while the second predictor is the customer's intention to buy back on an e-commerce website. A guarantee factor that is in accordance with the customer's wishes can increase customer satisfaction. Thus, the authors propose the following hypothesis.

H3: Fulfilment on e-service quality has a positive effect on the level of customer e-satisfaction in the online system.

According to Weiss [11] privacy is the protection of personal information and the security of protection from the risk of fraud and financial losses that have been empirically proven to have a strong impact on attitudes towards the use of online financial services. This happens in online transactions, therefore companies that use e-commerce websites must really maintain the privacy of their customers, while according to Parasuraman [5] the level of customer trust in how much privacy is protected is the extent to which customers believe the site is safe from interference and protected personal information. Maintaining customer privacy is very important for the company by not spreading confidential information about its customers to any site, maintaining the security of the customer's shopping account, maintaining the confidentiality of the customer's bank account and shopping behavior. If a customer believes in an e-commerce site, then he will believe that the information will be safe and will not be distributed. This is in accordance with the wishes and expectations of customers so that customers will be satisfied with the e-commerce website of the company concerned, therefore, the hypothesis is proposed:

H4: Privacy on e-service quality has a positive effect on the level of e-satisfaction of customers in the online system.

The following is a picture of the research model.

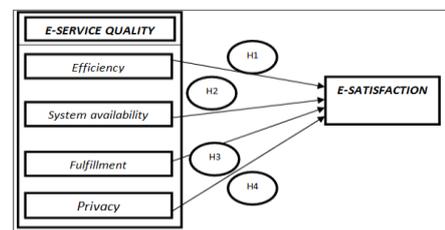


Fig. 1. The research model.

III. METHODS

A. Population and Sample of the Research

The population used in this research is students with management business major in accredited colleges and universities in Batam. The population of students amounted to 5.351 students, the data are obtained from forlabdikti site. The number of samples in this research uses Slovin formula. So, a minimum number of samples can be used in this research are around 98 students with management business major

B. The Instrument of the Research and Technique of Data Analysis

This instrument of this research is questionnaire with measurement scale used in this research is Likert Scale in 5 points, questionnaire adapted from the questionnaire Parasuraman dan Eid [5,12]. Technique of Data Analysis used to test hypothesis is PLS-SEM (Partial Least Squares-Structural Equation Modeling) analysis.

IV. FINDING AND DISCUSSION

A. Outer Model

1) Construct validity test:

TABLE I. LOADING INDICATORFACTOR

Construct	N	Item	Loading Factor
E-SATISFACTION (ES)	4	ES1	0,801
		ES2	0,714
		ES3	0,799
		ES4	0,779
EFFICIENCY (E)	8	E1	0,782
		E2	0,727
		E3	0,785
		E4	0,813
		E5	0,841
		E6	0,822
		E7	0,809
		E8	0,784
FULFILMENT (F)	7	F1	0,654
		F2	0,677
		F3	0,757
		F4	0,692
		F5	0,692
		F6	0,717
		F7	0,738
PRIVACY (P)	3	P1	0,938
		P2	0,917
		P3	0,925
SYSTEM AVAILABILITY (S)	4	S1	0,866
		S2	0,912
		S3	0,961
		S4	0,954

Based on table I, seems that overall indicators are above 0,5, means that the indicator is significant, so can be concluded that overall items are stated valid.

2) *Convergent validity test:* The parameter of convergent validity test can be seen from AVE and Commuality score, each of them must be a value above 0,5. The following is the result of AVE and Commuality score for each construct.

TABLE II. AVE AND COMMUALITY VALUE SCORE

Construct	AVE	Commuality
E-SATISFACTION (ES)	0,599	0,599
EFFICIENCY (E)	0,634	0,634
FULFILMENT (F)	0,510	0,510
PRIVACY (P)	0,859	0,859
SYSTEM AVAILABILITY (S)	0,854	0,854

Source: Data Processing with SmartPLS.

Seems in TABLE II that AVE and Commuality score have value above 0,5. So, it can be concluded that construct has good convergent validity.

3) *Discriminant validity test:* This following is description about discriminant validity which is valued based on comparison AVE root for every construct with correlation between construct and another construct.

TABLE III. COMPARISON OF AVE ROOTS AND CORRELATION OF LATENT VARIABLES IN PILOT TEST

CONST RUCT	AVE ROOTS	Correlation of Latent Variables				
		E-SATISFACTION (ES)	EFFICIENCY (E)	FULFILMENT (F)	PRIVACY (P)	SYSTEM AVAILABILITY (S)
E-SATISFACTION (ES)	0,774	1,000				
EFFICIENCY (E)	0,796	0,307	1,000			
FULFILMENT (F)	0,714	0,464	0,215	1,000		
PRIVACY (P)	0,927	0,478	0,174	0,711	1,000	
SYSTEM AVAILABILITY (S)	0,924	0,359	0,238	0,418	0,308	1,000

Source: Data Processing with SmartPLS.

Based on table III can be concluded that AVE root score is higher than correlation score inter construct with another constructs, it means that all constructs have fulfilled criteria of discriminant validity. Score AVE in System Availability (S) variable in Table 5 is 0,854, so that the root score of it is 0,924. That score is higher than correlation between System Availability (S) variable, that is 0,359 E-satisfaction, 0,238 Efficiency, 0,680 fulfilments, and 0,582.

4) Reliability test:

TABLE IV. CRONBACH'S ALPHA SCORE

Construct	Cronbach' Alpha	Composite Reliability
E-SATISFACTION (ES)	0,777	0,857
EFFICIENCY (E)	0,917	0,933
FULFILMENT (F)	0,831	0,873
PRIVACY (P)	0,918	0,948
SYSTEM AVAILABILITY (S)	0,943	0,959

Reliability test can be seen from Cronbach' Alpha and CompositeReliability score. In Table IV shows that Cronbach's Alpha score for all constructs are above 0,6. CompositeReliability score for all constructs are above 0,7. This shows all constructs reliable.

B. Inner Model

TABLE V. SQUARE VALUE

Construct	R-Square
E-SATISFACTION (ES)	0,323

In table V shows that R-Square score from E-satisfaction (ES) variable is about 0,323. This shows that 32,3% can be influenced by Fulfilment (F) variable, Efficiency (E), Privacy (P), and System availability (S), andthe remaining is 67,7% is influenced by other variable outside of researched.

C. The Result of Hypothesis

TABLE VI. RESULT OF PATH COEFFICIENT AND T-STATISTICS

Construct			T-Statistics
EFFICIENCY (E)	->	E-SATISFASCTION (ES)	2,721
SYSTEM AVAILABILITY (S)	->	E-SATISFASCTION (ES)	1,893
FULFILMENT (F)	->	E-SATISFASCTION (ES)	1,728
PRIVACY (P)	->	E-SATISFASCTION (ES)	3,168

Based on table VI, can be concluded that the first hypothesis is supported with T-Statistics score is 2,721 above T-Table score that is 1,64. It means that Efficiency (E) influences to E-satisfaction (ES) positively. The second hypothesis is supported with T-statistics score is 1,893 above T-table score means that System availability (S) influences to E-satisfaction (ES) positively. The third hypothesis is supported with T-statistics score is 1,728 above T-Table score means that Fulfilment (F) influences to E-Satisfaction (ES) positively. Same with the fourth hypothesis is supported with T-Statistics score is 3,168 above T-Table score means that Privacy (P) influences to E-Satisfaction (ES) positively.

TABLE VII. SUMMARY OF HYPOTHESIS TEST RESULTS

	Hypothesis	T-Statistics	Results
H1 :	Efficiency in E-Service Quality Positively Affect to Customer E-Satisfaction Level in Online System.	2,721	Supported
H2 :	System Availability in e-service quality positively affect to customers e-satisfaction level in online system	1,893	Supported
H3 :	Fulfilment in e-service quality positively affects to customers e-satisfaction level in online system.	1,728	Supported
H4 :	Privacy in e-service quality positively affects to customers e-satisfaction level in online system.	3,168	Supported

1) *Efficiency in e-service quality positively affect to customer e-satisfaction level in online system:* Based on testing conducted in the first hypothesis (H1), found result that the first hypothesis is supported. It means that the first hypothesis proves that the more efficient e-service quality, the more customer e-satisfaction level increased. e-satisfactionwebsite-commerce tokopedia.com level can increase when the efficiency used by customers can describe how ease customers in using structured website correctly and how the company simplify to access for the users. This causes positive effect for satisfactionwebsite-commerce tokopedia.com level and it is appropriate with Parasuraman [5], which was indicated that efficiency has strong effect in affecting e-satisfaction factor. This result is consistent with the research results conducted by Parasuraman and Sharma [1,5] stated that efficiency in e-service quality influence positively to customers e-satisfaction level in online system.

2) *System availability in e-service quality positively affect to customers e-satisfaction level in online system:* Based on the result testing conducted in the second hypothesis (H2), found result that the second hypothesis is supported. It means, the second hypothesis proves that the better system availability to e-service quality, the more increase customers e-satisfaction level. E-satisfactionwebsite-commerce tokopedia.com level can increase when System availability which is be perceived by customers can describe how the available content in website-commerce is and include its completeness, accuracy, format and currency aspect of information which are conveyed by e-commerce market in accordance with statements from WIXom [7]. The System availability in online scope from website e-commerce can be seen from variety of perspectives, such as, how web pages do not experience crash, system of the product quick and not bad, service quality, the website system design, interaction from human-computer quality, always available for business matter and many more. This raises positive effect for e-satisfactionwebsite-commerce tokopedia.com level. This result is consistent with the research results conducted by

Parasuraman and Sharma [1,5] which were stated that system availability in e-service quality positively affected to customers e-satisfaction level in online system.

3) *Fulfilment in e-service quality positively affects to customers e-satisfaction level in online system:* Based on the result testing conducted in the third hypothesis (H3), found result that the third hypothesis is supported. It means, the third hypothesis proves that the better fulfilment in e-service quality, the more increase customers e-satisfaction level. E-satisfactionwebsite-commerce tokopedia.com level can increase when fulfilment which is perceived by customers can describe how fulfilment or reliability involve accurate representation of product, on-time delivery, accurate command in accordance with statements from Wolfinbarger [10]. These factors contain customers trust level, when customers want something to buy products and they have paid it, the company must fulfill customers wanting in giving products accurately, on-time and trusted. This raises positive effect for e-satisfactionwebsite-commerce tokopedia.com level. This result is consistent with the research results conducted by Parasuraman and Sharma [1,5] which were stated that fulfillment in e-service quality positively affected to customers e-satisfaction level in online system.

4) *Privacy in e-service quality positively affects to customers e-satisfaction level in online system:* Based on the result testing conducted in the fourth hypothesis (H4), found result that the fourth hypothesis is supported. It means, the fourth hypothesis proves that the better privacy in e-service quality, the more increase customers e-satisfaction level. E-satisfactionwebsite-commerce tokopedia.com level can increase when privacy which is perceived by customers can describe how the personal information protection is and protection security from risks of fraud and financial loss which are proven empirically have strong effects in attitude to use online financial service in accordance with Weiss statements [11]. Keeping customers privacy is crucial thing for company with no spread secret informations about their customers to any website, keeping shopping accounts security of customers, keeping secrecy bank accounts owned by customers and their shopping attitudes. These raise positive effect for e-satisfactionwebsite-commerce tokopedia.com level. This result is consistent with the research results conducted by Parasuraman and Sharma [1,5] which were stated that privacy in e-service quality positively affected to customers e-satisfaction level in online system.

V. CONCLUSION

This research aims to examine the influence of *e-service website-commerce* quality to customers e-satisfaction who shop in *website-commerce* tokopedia.com, the sample of this research is students with management business major who study in some accredited colleges and universities in Batam. The result of this research shows that four hypotheses proposed, all research hypotheses are supported. Based on the limitation and implication in this research, the writers deliver suggestions, as follows the further research is directed to use sample more broadly, such as students researched from all colleges and universities in Batam. The further research can use more than one website e-commerce, so that the further research can compare how e-satisfaction level in each website e-commerce which is frequently used by customer.

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