

The Analysis of Factors Affecting the Buying Interest of E-Commerce Customers

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Abstract—The goals of this research are to analyze factors affecting buying interest of e-commerce customers residing in the areas of Jakarta, Bogor, Depok, Tangerang, and Bekasi in Indonesia. A questionnaire is developed as the data acquisition instrument and is pretested by 30 respondents. The pretest is intended to evaluate the validity and reliability of the instrument. For the research, the data are collected from a random sample of 200 respondents. The research variables are ease of use, enjoyment, shopping experience, trust, promotion/advertising, and price. A structural equation model is established to assess the relations between the interested variables. As the results, the analysis shows that the factors of ease of use, promotion/advertising, and price significantly influence the buying interest. Meanwhile, the enjoyment, shopping experience, and trust do not affect the buying interest.

Index Terms—Interest of Customer, E-Commerce, Shopping Experience, Buying Interest

I. INTRODUCTION

ALONG with advances in technology, the Internet is not just media used for communication, but also for buying and selling goods. In Indonesia, the population of Internet users continues to grow each year. Based on the data from the website of the Indonesia Internet Service Provider Association ‘Asosiasi Penyelenggara Jasa Internet Indonesia’ (APJII) [1], from 2005 to 2014, the number of Internet users continues to grow and it reached 88.1 million in 2014 from a total of 252.4 million Indonesia population.

According to the statistics from the website of the Ministry of Communication and Information Technology ‘Kementerian Komunikasi dan Informatika’ (Kemkominfo) [2] in 2014, the percentage of Internet users involving in selling / buying goods / services (e-commerce) was 20.70% of the Indonesia Internet users. It means that the use of Internet in e-commerce in Indonesia is quite high and may continue to rise

each year. The use of the Internet should have great benefit for business, but it also increases the business competitiveness.

According to Ref. [3], e-commerce is the buying and selling of goods / services by using the Internet. In general, e-commerce is a place for people to shop a variety of items online. After the customer order goods and pay for it, the items will be sent to the customer directly.

By 2015, Indonesia already has many e-commerce websites according to Kemkominfo [4]. The data show that there are five most popular e-commerce websites, namely, olx.co.id, tokopedia.com, lazada.com, kaskus.co.id, and bukalapak.com.

In e-commerce, there are many kinds of segments or categories of goods and services as seen on the statistical data on the Kemkominfo website [5]. By 2015, the data shows that 10 segments are widely popular in e-commerce. Those segments are: fashion and its accessories; mobile phones, gadgets, and their accessories; electronic; sport tools; textiles and apparel; leather, bags, and shoes; household goods; health equipment; handicraft items; and power tool.

From the data, it can be seen which e-commerce and the market segment that are most frequently visited / purchased by customers. However, there is no data regarding the buying interest in e-commerce. Therefore, it is necessary to study what factors that affect the buying interest in e-commerce are.

II. LITERATURE REVIEW

A. Previous Research

Studies have shown that e-commerce customers have various factors affecting their buying interest. Reference [6] found that the perceived ease of use, perceived usefulness, and trust significantly influenced enjoyment. This relationship is supported by the empirical data at the coefficient of determination (R^2) of 0.316.

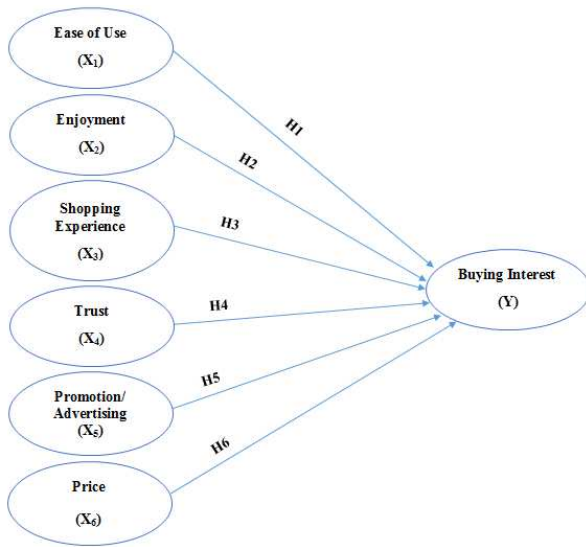


Fig. 1. Research model developed from other research.

Similarly, those independent variables also affect the repurchase intention.

According to Ref. [7], the perceived risk had a negative impact on the intention to shop online. They also found that perceived usefulness to be the strongest predictors of the intention, and followed by self-efficacy. Perceived ease of use was found as a less significant predictor. Perceived enjoyment and subjective norms partially supported the shopping intention.

According to Ref. [8], appeal and salespeople competence affected the customer buying interest. According to Ref. [9], buying interest was influenced by location, diversity of product, price, and quantity. The influence was particularly significant in the traditional market so called Bersehati. According to Ref. [10], buying interest was positively related to ease of use, pleasure, shopping experience, and customer confidence. Based on previous research on the interest of online shopping, the current research model is shown in Fig. 1.

B. Structural Equation Modeling

Structural Equation Modeling (SEM) is a statistical modeling technique that is highly crosssectional, linear and general, including factor analysis, path analysis, and regression. SEM-AMOS is an excellence program as it has the ability to create or construct a model having many latent and observable variables [11]. According to Ref. [12], SEM is a multivariate statistical technique combining factor analysis and regression analysis.

III. RESEARCH METHOD

A. Hypothesis

The hypotheses in this study are:

- H1: Ease of use has a positive influence on buying interest.
- H2: Enjoyment has a positive influence on buying interest.
- H3: Shopping experience has a positive influence on buying interest.
- H4: Trust has a positive influence on buying interest.
- H5: Promotion/advertising has a positive influence on buying interest.
- H6: Price has a positive influence on buying interest.

B. Data Processing

Using the method of analysis of SEM, a merger between the two statistical concepts, namely the concept of factor analysis are repretend in the measurement model and the concept of regression through the structural model. The model explains the relationship between the variables with their indicators and structural models to explain the relationship between variables [13]. Moreover, the testing of the validity and reliability of data uses SPSS. Meanwhile, the results of the respondents are processed using SEM-AMOS.

C. Sampling

The sampling process is carried out in the following steps. 1) The population in this study are the users of e-commerce in Jakarta, Bogor, Depok, Tangerang, and Bekasi. 2) The sample is randomly selected from the population. 3) According to Ref. [14], the maximum likelihood estimation technique requires a sample size in the range of 100–200. Reference [12] estimated that the required sample size was in between of 150 and 400 data.

According to Ref. [12], a sample size of 200 is also acceptable on the conditions of limited resources, money, time, and population characteristics. The sample size of the current study is 200. In addition, 30 respondents are selected for the questionnaire pretest [15].

The scale of measurement used in the questionnaire is Likert scale 1–5, where 1 = strongly disagree, 2 = disagree, 3 = neutral or fair, 4 = agree, and 5 = strongly agree.

D. Data Analysis

To collect the data, the survey questionnaire is created using Google Forms. The questionnaire is divided

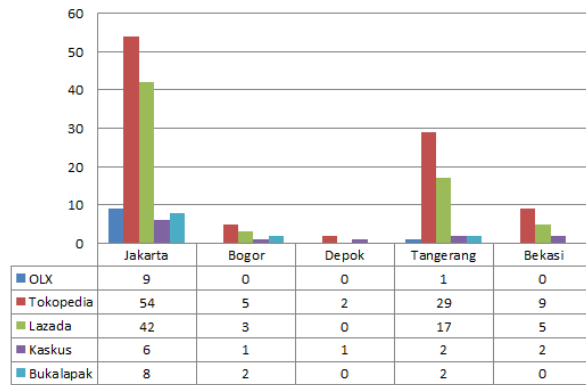


Fig. 2. The number of customers accessing the e-commerce sites from the regions: Jakarta, Bogor, Depok, Tangerang, and Bekasi.

into two parts, part A and part B. Section A contains respondent profiles such as gender, age, region, used e-commerces, the amount of spending every month, and market segment. Section B contains 23 questions.

A pilot test is conducted by using 30 respondents to determine the instrument validity and reliability. After receiving the results of validity and reliability, the questionnaire is distributed to 200 respondents. The results of data from respondents are analyzed by using SEM-AMOS.

IV. RESULTS AND DISCUSSION

The questionnaire is distributed to random e-commerce customers in the areas of Jakarta, Bogor, Depok, Tangerang, and Bekasi. It also distributed online via an Indonesia community in kaskus.co.id. A total of 210 respondents returns the questionnaire but ten respondents do not fill it completely. The incomplete questionnaires are discharged.

A. The Regions of E-Commerce Customers and Market Segmentation

The first aspect is regarding the demand of e-commerce in Jakarta, Bogor, Depok, Tangerang, and Bekasi. As it can be seen in Fig. 2, the most widely accessed e-commerce is Tokopedia and most customers are from Jakarta. No respondent in Bogor, Depok, and Bekasi accesses OLX. This is also similar in Depok that no respondent accesses Lazada. Then, no respondent in Depok and Bekasi accesses Bukalapak.

In regard of the most attractive market segments of e-commerce, the results can be seen in Fig. 3. It can be seen for each e-commerce, there is a market segment frequently accessed by their user. In Lazada, one of the most widely accessed is the market segment of fashion and accessories. In this site, the less popular products are related to health tools, craft items, and power tools.

TABLE I
THE VALIDITY TEST OF THE INSTRUMENT.

Variable	Item	Pearson Cor.	Result
Ease of Use (X_1)	$X_{1.1}$	0.844	Valid
	$X_{1.2}$	0.724	Valid
	$X_{1.3}$	0.829	Valid
	$X_{1.4}$	0.825	Valid
Enjoyment (X_2)	$X_{2.1}$	0.610	Valid
	$X_{2.2}$	0.802	Valid
	$X_{2.3}$	0.727	Valid
Shopping Exp. (X_3)	$X_{3.1}$	0.879	Valid
	$X_{3.2}$	0.884	Valid
	$X_{3.3}$	0.710	Valid
Trust (X_4)	$X_{4.1}$	0.778	Valid
	$X_{4.2}$	0.774	Valid
	$X_{4.3}$	0.763	Valid
Promotion/Ad. (X_5)	$X_{5.1}$	0.733	Valid
	$X_{5.2}$	0.879	Valid
	$X_{5.3}$	0.860	Valid
Price (X_6)	$X_{6.1}$	0.706	Valid
	$X_{6.2}$	0.897	Valid
	$X_{6.3}$	0.908	Valid
Buying Interest (Y)	Y_1	0.633	Valid
	Y_2	0.749	Valid
	Y_3	0.831	Valid
	Y_4	0.429	Valid

TABLE II
THE RELIABILITY TEST OF THE INSTRUMENT.

Variable	Cronbach's α	Results
Ease of Use (X_1)	0.816	Reliable
Enjoyment (X_2)	0.514	Reliable
Shopping Exp. (X_3)	0.748	Reliable
Trust (X_4)	0.643	Reliable
Promotion/Advertising (X_5)	0.761	Reliable
Price (X_6)	0.789	Reliable
Buying Interest (Y)	0.604	Reliable

B. Validity and Reliability Pilot Test

During the deployment of the questionnaire, a pilot program is done to test the instrument. The program involves 30 respondents. The test intends to evaluate the instrument validity and reliability. The results are presented in Table I, which are acceptable at the confidence level of 95% and significance level of 5%. The r -table value is 0.3610. According to Ref. [16], the instrument is valid when its Pearson correlation coefficient for each measured item is larger than the table value.

The results of the reliability test of the instrument is presented in Table II. According to Ref. [17], the value of α between 0.50–0.70 means moderate reliability, suggesting that the entire test items are reliable and consistent internally.

C. Data Analysis and Discussion

After successfully getting the respondent data, the next step is to process the data and analysis by using SEM. The analysis is performed by using AMOS soft-

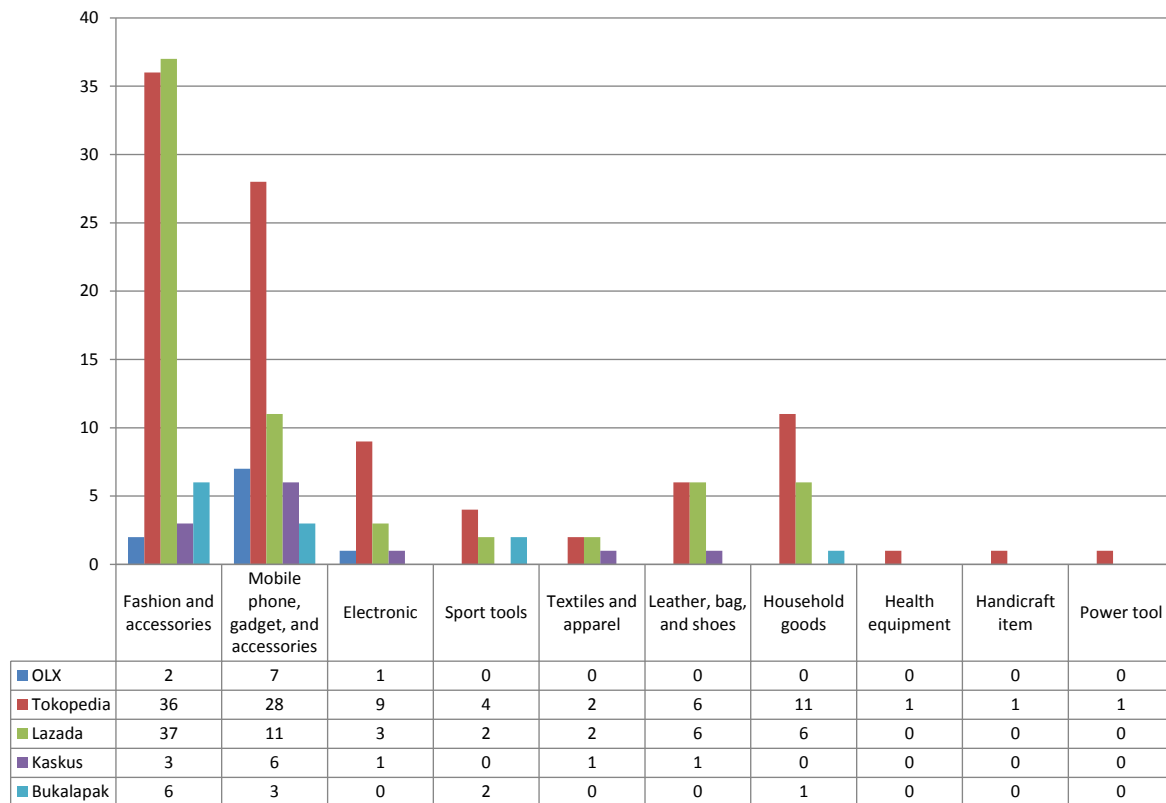


Fig. 3. The most popular types of products on OLX, Tokopedia, Lazada, Kaskus, and Bukalapak according to respondents in Jakarta, Bogor, Depok, Tangerang, and Bekasi.

TABLE III
THE DEGREE OF FREEDOM OF THE MODEL.

Model Degree of Freedom:	
Number of distinct sample moments	: 276
Number of distinct parameters to be estimated	: 66
Degrees of freedom (276 - 66)	: 210

ware version 22. Firstly, model of SEM with AMOS is created as depicted Fig. 4.

From AMOS software, the researchers obtain the problem degree of freedom of 210, see Table III. It suggests the problem is over identifiable, and the estimation and model assessment is feasible, as suggested by Ref. [12].

Moreover, the fitness of the model to the data is as the following. The researchers use the indices discussed by Refs. [12, 18]. The first fitness criterion is the Absolute Fit Indices or GFI. For a good fitness, the index value should within the interval of 0.80–0.90 [18]. As depicted in Table IV, the current model has GFI = 0.836, suggesting a good fitness. In addition, RMSEA is also another measure of fitness. The RMSEA index of this model is 0.079, see Table V. It

TABLE IV
THE MEASURE OF MODEL FITNESS: ABSOLUTE FIT INDICES (GFI).

Model	RMR	GFI	AGFI	PGFI
Default model	0.068	0.836	0.785	0.636
Saturated model	0.000	1.000		
Independence model	0.206	0.322	0.260	0.295

TABLE V
THE MEASURE OF MODEL FITNESS: RMSEA.

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.079	0.070	0.089	0.000
Independence model	0.194	0.187	0.202	0.000

is lower than 0.08, indicating a good fitness.

The model fitness can also be measured by the Incremental Fit Indices (IFI). For a good model, this index value should be in the range of 0.80–0.90 [18]. The current model has IFI value of 0.865.

The final fitness index is the Parsimony Fit Indices or PNFI. According to Ref. [18, 19], a good model should has PNFI ≥ 0.50 . The current model has PNFI of 0.648 as depicted in Table VII.

TABLE VI
THE MEASURE OF MODEL FITNESS: INCREMENTAL FIT INDICES (IFI).

Model	NFI DELTA 1	RFI rho 1	IFI Delta 2	TLI rho 2	CFI
Default	0.781	0.736	0.865	0.834	0.862
Saturated	1.000		1.000		1.000
Independence	0.000	0.000	0.000	0.000	0.000

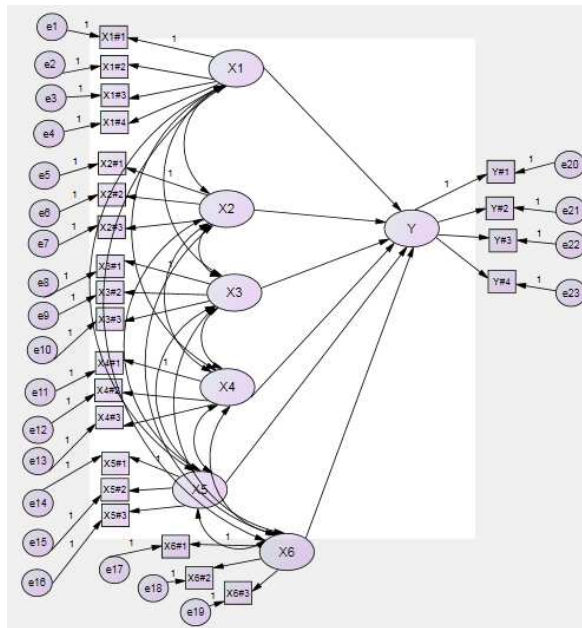


Fig. 4. The path diagram with Amos, where X_1 = Ease of Use, X_2 = Enjoyment, X_3 = Shopping Experience, X_4 = Trust, X_5 = Promotion/Advertising, X_6 = Price, and Y = Buying Interest.

TABLE VII
THE MEASURE OF MODEL FITNESS: PARSIMONY FI INDICES (PNFI).

Model	PRATIO	PNFI	PCFI
Default model	9.830	0.648	0.715
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

For the conclusion regarding the model fitness, the developed model fits the data in accordance with all fitness indices. In this stage, the researchers can access the relationship between independent and dependent variables. The results are summarized in Table VIII.

From the results, the findings can be summarized. The hypothesis 1 (H_1) that ease of use has a positive and significant effect on the buying interest, is accepted. The hypothesis 2 (H_2) is rejected. Enjoyment has no positive effect on the buying interest. The hypothesis 3 (H_3) or shopping experience has positive effect to the buying interest, is also rejected. Next, the hypothesis 4 (H_4) is rejected. It does not prove

TABLE VIII
ESTIMATES AND SIGNIFICANCE.

$X \rightarrow Y$	Estimate	p -value
Ease of Use \rightarrow Buying Interest	0.261	0.013
Enjoyment \rightarrow Buying Interest	0.072	0.566
Shopping Exp. \rightarrow Buying Interest	0.044	0.557
Trust \rightarrow Buying Interest	-0.246	0.066
Promotion/Ad. \rightarrow Buying Interest	0.227	0.031
Price \rightarrow Buying Interest	0.476	0.006

that trust has an effect on buying interest. The last two hypotheses (H_5 and H_6) are accepted. Promotion/advertising and price has positive effect on the buying interest.

V. CONCLUSION

This research is conducted to find the factors affecting the interest of customer e-commerce shopping. The three accepted hypotheses are H_1 , H_5 , and H_6 . The three rejected hypotheses are H_2 , H_3 , and H_4 . These are similar to the results obtained by Refs. [6–10].

The first accepted hypothesis argues that the ease of use has positive and significant impact on buying interest. This finding is supported by Refs. [6, 10]. The second hypothesis that the enjoyment has a positive and significant impact on buying interest, is rejected. Similarly, the third hypothesis that the shopping experience has a positive and significant effect on buying interest, is also rejected. The fourth hypothesis is also rejected. The trusts has no positive and significant impact on buying interest.

The fifth hypothesis that the promotion / advertising has a positive and significant impact on buying interest, is accepted. The result is in accordance with the findings of Ref. [8]. In addition, the sixth hypothesis is also accepted. The price has a effect positive and significant impact on buying interest. Similar finding is obtained by Ref. [9]. The study concludes the factors affecting the buying interest of e-commerce customer. In the order of importance, there are the price, easy of use, and promotion/advertising.

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