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

Harisno¹ and Deborah Herby²

¹,²Information Systems Management Department, BINUS Graduate Program - Master of Information Systems Management, Bina Nusantara University
Jakarta 11480, Indonesia
Email: ¹harisno@binus.edu, ²deborah_0509@yahoo.com

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.
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 represtend 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
Bekasi. As it can be seen in Fig. 2, the results of data from respondents are analyzed by using SEM-AMOS. The number of customers accessing the e-commerce sites from the regions: Jakarta, Bogor, Depok, Tangerang, and Bekasi. A total of 210 respondents returns the questionnaire into two parts, part A and part B. Section A contains respondent profiles such as gender, age, region, used e-commerc, the amount of spending every month, and market segment. Section B contains 23 questions. After successfully getting the respondent data, the questionnaire is distributed to 200 respondents. The incomplete questionnaires are discharged. 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 $\alpha$ between 0.50–0.70 means moderate reliability, suggesting that the entire test items are reliable and consistent internally.

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.

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 Indonesain 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.

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Table I

| 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

| Variable          | Cronbach’s $\alpha$ | 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/Ad $X_5$ | 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 $\alpha$ 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-
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Fashion and accessories
Mobile phone, gadget, and accessories
Electronic
Sport tools
Textiles and apparel
Leather, bag, and shoes
Household goods
Health equipment
Handicraft item
Power tool

OLX 2 7 1 0 0 0 0 0 0 0
Tokopedia 36 28 9 4 2 6 11 1 1 1
Lazada 37 11 3 2 2 6 6 0 0 0
Kaskus 3 6 1 0 1 1 0 0 0 0
Bukalapak 6 3 0 2 0 0 1 0 0 0

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.

| 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 |

| 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 |

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 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       | 1.000     | 1.000|
| Independence   | 0.000       | 0.000     | 0.000       | 0.000     | 0.000|

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   | 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 (H₁) that ease of use has a positive and significant effect on the buying interest, is accepted. The hypothesis 2 (H₂) is rejected. Enjoyment has no positive effect on the buying interest. The hypothesis 3 (H₃) or shopping experience has positive effect to the buying interest, is also rejected. Next, the hypothesis 4 (H₄) is rejected. It does not prove that trust has an effect on buying interest. The last two hypotheses (H₅ and H₆) 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 H₁, H₅, and H₆. The three rejected hypotheses are H₂, H₃, and H₄. 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, ease of use, and promotion/advertising.

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