Analysis of the Effects of Perceived Ease of Use and Perceived Usefulness on Consumer Attitude and Their Impacts on Purchase Decision on PT Tokopedia In Jabodetabek

Fandy Gunawan, Mochammad Mukti Ali, and Arissetyanto Nugroho

Abstract—This study aims to analyze the effect of perceived ease of use and perceived usefulness on consumer attitudes and the impact on purchase decision at PT Tokopedia in Jabodetabek. Population in this study is the entire PT Tokopedia consumers in Jabodetabek, and the sampling method using purposive sampling. The data in this study were collected through questionnaire using Likert scale from 119 respondents who had transaction at least once in the last three months at PT Tokopedia. Data is processed using Linear Structural Relationship (LISREL) software version 8.8. The result shows that perceived ease of use has negative and insignificant impact on consumer attitudes, perceived usefulness has positive and significant impact on consumer attitudes, perceived ease of use has positive and insignificant impact on purchase decision, perceived usefulness has positive and insignificant impact on purchase decision, and consumer attitudes has positive and significant impact on purchase decision.

Index Terms—consumer attitudes, e-commerce, perceived ease of use, perceived usefulness, purchase decision

I. INTRODUCTION

Rapid internet development helps people in nearly every field, including by making it easy to be connected faster to all corners of the world. Six reasons why internet technology is very popular were internet has extensive connectivity and ranges; reduces communication cost; has lower transaction cost; reduces agency cost; is interactive, flexible, and easy; and has the ability to distribute knowledge quickly [12].

Internet across the world develops rapidly from year to year. We Are Social works with Hootsuit to gather data from 239 countries to describe internet technology usage across the world. In 2016, the number of internet users in the world was 3.419 billion people, while in 2017 it was 3.773 billion people, and in 2018 it increased to 4.021 billion people. Every year, the number internet users in the world increases by 7-10%, showing that massive internet development is directly proportional to the development of new business opportunities.

Not only in the world, the growth of internet users in Indonesia also follows the positive trend of the world’s internet users, which was proven by a survey data released by Indonesian Internet Service Provider Association (APJII). The percentage of internet users in the population of Indonesia in 2009 was 12.93% and grew rapidly in the past eight years to 54.68% in 2017 or an average of 6.8% of growth every year.

The rapid growth of internet users in Indonesia is dominated by the usage of mobile devices or smartphone. From 143.26 million internet users in 2017, = 44.16% of them only used mobile devices to access the internet, 39.28% used computer and mobile devices, 4.49% only used computer or laptop to access the internet, and 12.07% used other devices to access the internet [3].

Reference [25] showed that the growth of online shopping in 2018 compared with 2017 in Indonesia was above the global average in most sectors. The sectors which grew above the global average were fashion which grew by 25% compared with the 18% global growth, electronic which grew by 18% compared with the 12% global growth, furniture and household appliances which grew by 18%, toys which grew by 27% or 10% above the global average, travel which grew by 23% compared with the 13% global growth and video game which also grew by 10% above the global average i.e. 17% in Indonesia.

Some marketplaces grow very rapidly in Indonesia, e.g. Tokopedia, Bukalapak, Blibli.com and Lazada. One of the

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Fig. 1. The Number of E-Commerce with The Most Visitors (quartal III 2018) in Indonesia
major Indonesian online retail market is Tokopedia. The numbers of Tokopedia visitors in the past four years were the biggest growth for the marketplace. On September 2014, 11 million people visited Tokopedia and June 2018 has the highest number of visitors with 130 million people opened Tokopedia to browse and shop on the website. The increase was 11,800% in the last four years, or around 245% every month. According to databoks.co.id, Tokopedia is the most visited e-commerce on the third trimester of 2018, with a total of 153.6 million visitors per month.

TABLE I: RESULT OF PURCHASE DECISION PRE-SURVEY

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Time</td>
<td>26.8%</td>
<td>Fast Delivery Time</td>
</tr>
<tr>
<td>People</td>
<td>19.6%</td>
<td>Customer Service</td>
</tr>
<tr>
<td>Physical Evidence</td>
<td>23.2%</td>
<td>Security of Website or Application</td>
</tr>
<tr>
<td>Place</td>
<td>67.9%</td>
<td>Ease of Finding Product</td>
</tr>
<tr>
<td>Price</td>
<td>09.6%</td>
<td>Competitive Price</td>
</tr>
<tr>
<td>Process</td>
<td>06.7%</td>
<td>Diverse Payment System</td>
</tr>
<tr>
<td>Product</td>
<td>48.2%</td>
<td>Many Choices of Products</td>
</tr>
<tr>
<td>Promotion</td>
<td>48.2%</td>
<td>Promotions Provided by Online Store</td>
</tr>
<tr>
<td>Quality</td>
<td>25.0%</td>
<td>Quality of Goods Purchased</td>
</tr>
<tr>
<td>Recommendation</td>
<td>41.1%</td>
<td>Recommendation or Testimonial</td>
</tr>
<tr>
<td>Reliability</td>
<td>32.6%</td>
<td>Trusted Online Shop</td>
</tr>
</tbody>
</table>

To understand better why online purchase through the internet is very popular, a pre-survey was performed to provide research supporting data. The result of the pre-survey on buying decision on online shops showed that price had the highest influence on buying decision (69.6%), followed by place or distribution channel (67.9%), and then process which is varying payment systems (60.7%). Other factors, e.g., product, promotion, delivery time, people, physical evidence, quality, recommendation, and reliability, has percentages below 50%.

The rapid growth of e-commerce is also an irony for brick and mortar stores. The disruption doesn’t only happen in Indonesia, but also the rest of the world. This is evident in the number of physical stores which close down because people switch to online shopping or e-commerce [8].

Studies on technology include Technology Acceptance Model proposed by Davis (1989). TAM assumes that one’s acceptance of information technology is influenced by two main variables, i.e. Perceived Usefulness and Perceived Ease of Use. TAM focuses on attitude to information technology usage by user by developing it based on perceived benefits and ease of use of information technology.

Beside description on the study on the phenomenon, there is a research gap to note in the past researches, such as the studies by Ibnu Widiyanto and Lestari Prasilowati (2015), Živilė Baubonienė, Gintarė Gulevičiūtė (2015), Jessica Hani Sianadewi et al. (2017), Rajendra Prasada Bangkara and Ni Putu Sri harta Mimba (2016), Wasfí Abdul Kareem Alkasassbeh (2014), and Yudianto Oentario et.al (2017) conclude that perceived usefulness has significant and positive effect on consumer attitude. While the studies by Rahmaningtyas, et al. (2017) and Fairouz Aldhmour (2016) state that perceived usefulness has no significant effect on consumer attitude.

Based on the pre-survey result, phenomenon and research gap above, the present study was performed to analyze the effects of perceived ease of use and perceived usefulness on consumer attitude and their impacts on shopping decision on PT Tokopedia in Jabodetabek.

II. LITERATURE REVIEW

Internet is hundreds of thousands of small networks which connect educational, commercial, non-profit, military, and even individual organizations. The interconnected networks exchange information using applied information exchange standard. [27]

Electronic Commerce is internet media and websites to perform business transactions between organizations and individuals. [13]

Technology Acceptance Model (TAM) is a theory on the usage of information technology system, which is considered very influential and is generally used to explain individual acceptance to information technology system usage [28]. TAM assumes that one’s acceptance of information technology is affected by two main variables, i.e. Perceived Usefulness and Perceived Ease of Use. TAM is commonly used to predict the rate of user acceptance and usage based on perceived ease of use of information technology benefit. The implication of acceptance can be studied by examining the relation between information technology acceptance and its impact on individual user. The purpose of TAM is continuing better measurement in predicting and explaining usage. The research focus is on theoretical construct, perceive usefulness and perceived ease of use, which are theorized to the fundamental factors of system usage. [6]

![Technology Acceptance Model](image)

Fig. 2. Technology Acceptance Model

Perceived Usefulness and Perceived Ease of Use affect an individual’s Attitude toward Using technology. Improved Perceived Ease of Use instrumentally affects improved Perceived Usefulness because a system which is easy to use doesn’t take long to learn, so that individual has the opportunity to do something else, thus related to performance effectiveness. [6]

Perceived Ease of Use is a level or situation where one is certain that using a certain system doesn’t require any effort (free of effort) [6]. Intensity of usage and interaction between user and system also can show ease of use. Perceived ease of use can be measured by the following indicators: easy to learn, makes it easy for user, increases skill and easy to

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operate. [15]

Perceived Usefulness is defined as the level of one’s confidence that using a certain system will improve their performance. Perceived usefulness based on the definition of the word useful which is "capable of being used advantageously" [6]. Perceived usefulness can be measured by the following indicators: improves job performance, increase productivity, effectiveness, useful and makes job easier. [15]

Consumer Attitude is evaluation for a long time on what one likes or dislikes, emotional feels and action tendency to some objects or ideas [10]. Consumer attitude according to Solomon can be measured by the following indicators: affective component and conative component. [21]

Purchase Decision buying decision is a decision which causes a consumer to make their decision among several brands in a set of choices [10]. Therefore, buying decision is a part of a series of processes of consumer behavior in making purchase with rational consideration. Buying decision can be measured by the following indicators: product choice, brand choice, distributor choice, number of purchase and time of purchase. [10]

Framework is a narration (description) or statement (proposition) on the conceptual frame of solution of identified or formulated problem. Below is the framework of the present study:

![Fig. 3. Framework](image)

### III. RESEARCH METHODOLOGY

This was a causal study using descriptive research method with quantitative approach of survey research type. The research population was all Tokopedia users in Jabodetabek. The research sample was collected using non-probability sampling with purposive sampling technique. The number of samples referred to the criteria proposed by Hair et.al [7], i.e. Maximum Likelihood Estimation (MLE) technique. The appropriate number of samples according to MLE is 100-200 samples.

The data collection method in the present study was questionnaire using likert scale with five research points. The questionnaire was distributed to 119 respondents who met the sample criterion, i.e. having made transaction at least once in the past three months. The questionnaire was distributed online via google form. In the present study, the variables were categorized into: (1) Independent variable i.e.; (X1) Perceived Ease of Use and (X2) Perceived Usefulness (2) and Dependent variable i.e.; (Y1) Consumer Attitude and (Y2) Buying Decision.

The data analysis of the present study used LISREL 8.80 to assist primary data processing.

### IV. RESEARCH FINDINGS AND DISCUSSION

Validity test reveals how far a measurement can measure the variable to be measured. The basis of determining whether a statement is valid or not is: (1) if r is positive, and r ≥ 0.50, then the question item is valid, while (2) if r is positive, and r < 0.50, then the question item is not valid. Based on Figure 3, all items were valid, because the r value of every question is ≥ 0.50.

Reliability test aims to determine the consistency of a measurement instrument. The basis of determining whether a research variable is reliable is: (1) if Construct Reliability ≥ 0.70 or Variance Extract ≥ 0.50, then the research variable is reliable, while (2) if Construct Reliability < 0.70 or Variance Extract < 0.50, then the research variable is not reliable. In the present study, all variables have construct reliability ≥ 0.70 and Variance Extract ≥ 0.50, so all research variables were reliable.

Table II shows that the fitness value of the model was good, i.e. good fit and marginal fit, meaning overall, the research model fitness value showed good fit.

To test the research hypotheses, the significance value (α) being used was 0.005 or 5% with t ≥ 1.96.

The result of statistical test of the research model for perceived ease of use showed that it had a negative but insignificant effect on consumer attitude. This was evident in t-value less than 1.96, i.e. -0.02. The research result was consistent with the study by Fairouz Aldhmour (2016) which concludes that perceived ease of use doesn’t have significant impact on consumer attitude. The offered ease of using Tokopedia didn’t make people quickly and easily change their attitude to Tokopedia. Similar technology offered by competitors made ease a necessity for companies to not be left behind in rapid technology development today.

<table>
<thead>
<tr>
<th>No.</th>
<th>Fit Index</th>
<th>Recommended Value</th>
<th>Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Goodness of Fit Index (GFI)</td>
<td>GFI ≥ 0.90</td>
<td>0.860</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>2</td>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>RMSEA ≤ 0.08</td>
<td>0.074</td>
<td>Good Fit</td>
</tr>
<tr>
<td>3</td>
<td>Root Mean Square Residual (RMR)</td>
<td>RMR ≤ 0.05</td>
<td>0.029</td>
<td>Good Fit</td>
</tr>
<tr>
<td>4</td>
<td>Adjusted Goodness of Fit Index (AGFI)</td>
<td>AGFI ≥ 0.90</td>
<td>0.800</td>
<td>Marginal Fit</td>
</tr>
<tr>
<td>5</td>
<td>Comparative Fit Index (CFI)</td>
<td>CFI ≥ 0.90</td>
<td>0.970</td>
<td>Good Fit</td>
</tr>
<tr>
<td>6</td>
<td>Incremental Fit Index (IFI)</td>
<td>IFI ≥ 0.90</td>
<td>0.970</td>
<td>Good Fit</td>
</tr>
<tr>
<td>7</td>
<td>Relative Fit Index (RFI)</td>
<td>RFI ≥ 0.90</td>
<td>0.920</td>
<td>Good Fit</td>
</tr>
<tr>
<td>8</td>
<td>Non-Normed Fit Index (NNFI)</td>
<td>NNFI ≥ 0.99</td>
<td>0.940</td>
<td>Good Fit</td>
</tr>
<tr>
<td>9</td>
<td>Non-Normed Fit Index (NNFI)</td>
<td>NNFI ≥ 0.90</td>
<td>0.970</td>
<td>Good Fit</td>
</tr>
</tbody>
</table>
Perceived usefulness has positive and significant effect on consumer attitude with t-value of 3.85, higher than critical t value of 1.96. The research result was consistent with the studies by Jessica Hani Sianadewi, et.al (2017), Rajendra Prasada Bangkara, Ni Putu Sri Harta Mimba (2016), Wasfi Abdul Kareem Alkasassbeh (2014), and Yudianto Oentario, et.al (2017) which conclude that perceived usefulness has positive and significant effect on consumer attitude. The usefulness of PT Tokopedia in searching goods, finding goods faster, higher effectiveness, and easiness in getting what they want, is an important factor affecting consumer attitude to PT Tokopedia.

For the third hypothesis, perceived ease of use had positive but insignificant effect on buying decision. This was evident in t-value of 1.08, less than critical t value of 1.96. The indirect effect of perceived ease of use on consumer attitude wasn’t significant as the t value is -0.02, which didn’t reach the required t value of 1.96, also indicating negative but insignificant effect of perceived ease of use on buying decision through consumer attitude. The result was consistent with the studies of Ibnu Widiyanto and Sri Lestari Prasilowati (2015), and Rahmaningtyas, et.al (2017) which conclude that perceived ease of use doesn’t significantly affect buying decision. The ease created by the company didn’t significantly affect the buying decision. The ease for consumers was a requirement for today’s marketplace, so it didn’t give any value added to the consumers’ buying decision. Easiness in accessing a marketplace didn’t make them automatically make any purchase on the marketplace.

For the fourth hypothesis, perceived usefulness had positive but insignificant effect on buying decision with t-value of 1.06 with minimum t value of 1.96. The research result was consistent with the study by Rahmaningtyas, et al. (2017) which states that perceived usefulness doesn’t significantly affect buying decision. However, when the effect of perceived usefulness on buying decision through consumer attitude was examined, the t value is 2.98, which is higher than 1.96, meaning perceived usefulness had positive and significant indirect effect on buying decision through consumer attitude. The company should note that improved usefulness of Tokopedia affected consumer attitude in shopping, but didn’t directly affect buying decision. Consumers didn’t immediately decide to buy because of improved effectiveness, productivity, usefulness and ease of working, but they affected consumer attitude to PT Tokopedia. Perceived Usefulness had positive and significant direct effect on consumer attitude and positive and significant indirect effect on buying decision through consumer attitude, meaning that perceived usefulness didn’t directly affect buying decision, but perceived usefulness was important to note because it affected consumer attitude which eventually affected buying decision significantly.

For the final hypothesis, consumer attitude had positive and significant effect on buying decision with t-value of 4.34. The research result was consistent with the studies by Rajendra Prasada Bangkara and Ni Putu Sri Harta Mimba (2016), Sonya Zuelseptia, et.al (2018), Ahmad Bilal Khilji (2016), Tanjila Tabassum, et.al (2017), Fairouz Aldhmour (2016), and Yudianto Oentario, et.al (2017) which state that consumer attitude significantly affect buying decision. It meant that after respondent had positive attitude to Tokopedia, their buying decision was strongly affected by the buying decision. Moreover, the company is suggested to develop products and services to be a one-stop-solution for online shopping center to draw consumers to shop in Tokopedia. Furthermore, diversity of products, brands, distributors, availability of goods and flexible shopping time made consumers decide to shop on Tokopedia.

V. CONCLUSION AND RECOMMENDATION

Based on data analysis and discussion in the previous chapter, the following conclusions are drawn: (1) Perceived ease of use has negative but insignificant effect on consumer attitude; (2) Perceived usefulness has positive and significant effect on consumer attitude; (3) Perceived ease of use has positive but insignificant effect on buying decision; (4) Perceived usefulness has positive but insignificant effect on buying decision; (5) Consumer attitude has positive and significant effect on buying decision.

The offered ease of using Tokopedia didn’t make people quickly and easily change their attitude to Tokopedia. Similar technology offered by competitors made ease a necessity for companies to not be left behind in rapid technology development today.

The usefulness of PT Tokopedia in searching goods, finding goods faster, higher effectiveness, and easiness in getting what they want, is an important factor affecting consumer attitude to PT Tokopedia.

The ease for consumers was a requirement for today’s marketplace, so it didn’t give any value added to the consumers’ buying decision. Easiness in accessing a marketplace didn’t make them automatically make any purchase on the marketplace.
purchase on the marketplace.

The perceived usefulness doesn’t significantly affect buying decision but, perceived usefulness had positive and significant indirect effect on buying decision through consumer attitude. The company should note that improved usefulness of Tokopedia affected consumer attitude in shopping, but didn’t directly affect buying decision. Consumers didn’t immediately decide to buy because of improved effectiveness, productivity, usefulness and ease of working, but they affected consumer attitude to PT Tokopedia. Perceived Usefulness had positive and significant direct effect on consumer attitude and positive and significant indirect effect on buying decision through consumer attitude, meaning that perceived usefulness didn’t directly affect buying decision, but perceived usefulness was important to note because it affected consumer attitude which eventually affected buying decision significantly.

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By analyzing the research result, some recommendations which could be considerations and inputs for PT Tokopedia and future researchers are the following: (1) For the company, the present study finds that perceived usefulness, i.e. improved performance, effectiveness, and productivity, affects consumer attitude. Therefore it should be developed to provide complete solution for the consumers so that they can find their needs easily on Tokopedia; (2) The company should review the products and services they offer to be able to offer the best prices to the consumers; (3) Tokopedia should aggressively acquire customers, both buyers and sellers, to maintain the trade climate on Tokopedia; (4) Future studies should add other variables which affect buying decision, e.g. price, service, word of mouth, trust, security, brand and promotion; and (5) Future studies should study the same variables but change the object category or research area.

REFERENCES


Fandy Gunawan was born in Bekasi, 26th February 1993. He earned his undergraduate degree (Majoring in Economics) from Pramita Indonesia University in 2015. Currently, he is studying his master's degree in Master of Management, Mercu Buana University Jakarta, majoring in Marketing. From 2012 until 2017, he work at PT Bank Central Asia, Tbk. and PT Bank Mandiri (Persero) Tbk as Assistant Relationship Manager. From 2017 until present, he is working as Area Supervisor Marketing at PT Bangunsukses Nisatama Nusatama in Jakarta which is one of the largest building material distributor in Sumatera Area.

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Arissetyanto Nugroho was born in Singapore, 24th February 1969. Graduated with a Bachelor's degree in Mechanical Engineering from the Faculty of Engineering, University of Indonesia (FTUI) and graduated as the first FTUI graduate in 1992. Continued his Masters degree in the Management Study Program of the Faculty of Economics, University of Indonesia (FEUI), graduated in 1999 and completed Doctor of Business Management IPB program in 2010. Since 2006 he joined as a lecturer at Economics and Business Faculty Mercu Buana University. Given the mandate as Vice Chancellor in 2006-2010 and as Chancellor in 2010-2018. He was awarded as the best performing lecturer at Mercu Buana University in 2011 and the best Entrepreneurship Lecturer in 2012. The award was also obtained both from domestic and abroad, such as 50 Faculty of Engineering University of Indonesia (FTUI) 2014 inspirational figures and Satyalencana Wira Karya 2016 honorary recipients given by the President of the Republic of Indonesia, Ir. Joko Widodo. And the best UMB Research Lecturer in 2017.