ANALYSIS OF PERCEIVED USEFULNESS, PERCEIVED EASE OF USE, AND PERCEIVED RISK TOWARD ONLINE SHOPPING IN THE ERA OF COVID-19 PANDEMIC

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ABSTRACT

The spread of the Corona virus outbreak that occurred in the beginning of February 2020 had an impact on the social, economic, and psychological order of the people in the whole world, including Indonesia. People in Indonesia began to feel fear, suspicion, and anxiety because the number of death caused by the virus continues to grow. To limit the spread of Covid-19, the government set regulations requiring social distancing, physical distancing, large-scale social restrictions, and regional quarantine so that these conditions require new lifestyles for the community, especially those related to shopping behavior that is carried out online. This study aims to analyze the influence of perceived usefulness, perceived ease of use, and perceived risk towards online shopping decisions. The population in this study is housewives in East Java, Indonesia, as many as 100 people.

The analysis tool used in this study is multiple linear regressions. The results of this study show that there is a significant result of perceived usefulness and perceived ease of use toward online shopping decision, while perceived risk variable does not have an influence toward online shopping decision. It is because online shopping risk is not the main aspect to consider, as consumers are more concerned with the safety risks so as not to be infected with the Corona virus and get social sanctions from the community around.

Keywords— Perceived Usefulness, Perceived Ease of Use, Perceived Risk, Online Shopping Decision

INTRODUCTION

Starting February 2020, people around the world were startled by the rapid spread of the Corona virus that has a high risk of death. Until now, 198 countries have been confirmed to be infected by the Corona virus [1]. The spread of the virus that has reached various parts of the world certainly has an impact on the social, economic, and psychological order of the people in the world. Indonesia is one of the countries infected by Covid-19 with the number of deaths reaching 2,465 people. Besides, economic growth in the first quarter of 2020 decreased by 2.3%, and it is expected to decrease more in the second quarter by 3.1% [2].

This affects the psychology of the community, such as fear, suspicion, and anxiety because number of death caused by the virus continues to grow every day, both from the public and medical personnel. Various government regulations to limit the spread of the virus were issued, such as social distancing, physical distancing, large-scale social restrictions, and regional quarantine. These regulations cause changes in the purchasing behavior of the community, which directly changes the business order that is already developed in the community [1].

During Covid-19 pandemic, people do activities such as work and study from home and minimize interaction outside so as not to get infected with the Corona virus. This condition requires a new lifestyle for the community, mainly related to purchasing behavior that is now done online. Previously, online shopping was mostly done by teenagers and people at the middle and upper levels. Online shopping is the process of purchasing products or services via the internet. Online shopping behavior or online purchasing behavior is called ‘online’ because it refers to the process of purchasing products or services carried out through the internet [3]. Various online shopping sites that is preferred by Indonesian people can be seen in the table below.

Table 1. Top Brand Index of Online Shopping Sites and Number of Visitors

<table>
<thead>
<tr>
<th>No</th>
<th>Brand</th>
<th>TBI of 2019</th>
<th>Number of Visitors in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lazada.co.id</td>
<td>31.6%</td>
<td>445.5 million</td>
</tr>
<tr>
<td>2</td>
<td>Shopee.co.id</td>
<td>15.6%</td>
<td>837.1 million</td>
</tr>
<tr>
<td>3</td>
<td>Tokopedia.com</td>
<td>12.3%</td>
<td>1.2 billion</td>
</tr>
<tr>
<td>4</td>
<td>Bukalapak.com</td>
<td>6.7%</td>
<td>823.5 million</td>
</tr>
<tr>
<td>5</td>
<td>Blili.com</td>
<td>6.6%</td>
<td>353.2 million</td>
</tr>
</tbody>
</table>

Source: [4] [5]

From the table above, it can be known five brands of online buying sites included in the Top Brand Index
in Indonesia, and the data of the number of visitors at each site. CNN Indonesia stated that during Covid-19 pandemic, the number of internet visitors had increased by 40%, dominated by users from homes or community dwellings [5]. This can be seen from the behavior of housewives who used to prefer offline shopping in traditional market, mini market, and carried out window shopping at malls, since with the current condition, they have to fulfill their needs online. Based on the process, there are five stages of online shopping, which is generally similar to traditional shopping behavior [3]. The stages are: problem recognition, information search, alternative evaluation, purchasing decision, and post-purchase behavior [6]. Before Covid-19 pandemic, the public tends to perceived that to use online shopping they need to learn in order to understand how to use the application or sites, while they already get used to shop offline. Theoretically, it is explained that online shopping decision can occur due to the influence of certain factors. According to [7], the factors are consumer characteristics, product/service characteristics, environmental characteristics, sellers/intermediaries characteristics, and e-commerce system. In consumer characteristics, there is a field of psychology that can affect a person, with perception as one of the aspects. This is what is able to influence the consumer’s decision making process [8].

It is not easy to change people’s habitual behavior to be able to accept new technology. A number of theories and models are developed in relation to consumer behavior [9]. For example, Theory of Planned Behavior (TPB) put forward by [10], which is an extension of Theory of Reasoned Action (TRA), provides a relationship between attitudes and behavior. Consumer actions are guided by three considerations: Behavioral Beliefs, Normative Beliefs, and Control Beliefs. Another model that is an extension of TRA is Technology Acceptance Model (TAM) developed by [11]. TAM is an information system theory that includes how users accept and use technology. It is in accordance with the concept of TAM proposed by [12] [13] [14] which explained that the adoption of the use of new technology requires a long process, by considering factors of perceived ease of use, perceived usefulness, and perceived risk. The study from [15] showed that the variable of perceived usefulness, perceived ease of use, and perceived risk partially have significant influence toward online shopping decisions.

Ease of use means without difficulty, that when consumers use the online shopping sites, they do not require a lot of effort. Therefore, the ease in understanding information, the use of application, and the service provided may affect consumer’s online shopping decision. This statement is in accordance with the study conducted by [16] [17] [18], which stated that ease of use has a positive influence toward one’s decision to have online transaction. Similarly, [19] [20] stated that partially, ease of use variable does not have significant influence on online shopping decision from Shopee application.

In addition, perceived usefulness is also a strong determinant of acceptance to use an information technology. Perceived usefulness can be felt when the online shopping system can be used quickly and easily compared to manual shopping systems, as well as able to improve the performance of its users. This is consistent with the study conducted by [21], who stated that perceived usefulness is an important factor that forms online shopping decisions, as well as the study from [16] [18] [20] [21] [22] who agreed that perceived usefulness has an influence on online shopping decisions. However, in reality, the benefits offered by online shopping have not been able to attract consumers easily, as there are many consumers who choose to shop offline. This is proven by the continued increase in the number of minimarkets or retail, which means that consumers’ interest in offline shopping is still high.

The last factor considered by users is the perceived risk from online shopping systems, including security issues, comfort, and confidentiality of the system, which in turn will affect users’ decision. This is in accordance with the study from [3] [23] [24], that perceived risk has an influence on online shopping decision. However, currently the public seems to assume that the risks considered in online shopping decision are more directed to the psychological risk, such as the risk to be infected by Corona virus as well as get social sanction from the community. This statement is supported by [25] which showed that there is no significant influence of perceived risk toward online shopping decision. This phenomenon triggers researchers to analyze the influence of perceived usefulness, perceived ease of use, and perceived risk on online shopping decisions in the era of Covid-19 pandemic.

LITERATURE REVIEW

Online sales are currently growing; both in terms of service, effectiveness, security, and popularity. It exists to address the behavior of online consumers who are not the same as consumer behavior in physical or offline purchases. Online shopping by utilizing technology aims to be faster and more practical, but it needs a concrete analysis and understanding in terms of consumer acceptance [12].

Therefore, Technology Acceptance Model (TAM) provides an explanation of the factors that determine or influence the acceptance of information technology in general. This model is able to predict the attitudes and behavior of online consumers, as seen from the elements of perceived usefulness, perceived ease of use, and perceived risk which are considered capable of predicting user behavior towards technology.

PERCEIVED USEFULNESS AND ONLINE SHOPPING DECISIONS

Perceived usefulness becomes the determiners of a system, adoption, and behavior of the users. A technology can be said to be successful if it has the value of usefulness needed by the customer. System
users will use it if the system is useful; whether the system is easy to use or not easy to use [12]. [26] stated that perceived usefulness is how far someone believes that using a particular system will improve its performance. According to [27], [28], perceived usefulness has a dominant influence in online shopping decision. It is supported by [16], [20], [21] that perceived usefulness can influence consumers’ online shopping decision. [18] also stated that perceived usefulness has a positive influence toward attitude and intention to online shopping.

The study from [15] showed that the variable of perceived usefulness partially has significant influence on online shopping decision. This result is strengthened by [29] that perceived usefulness is proven to have significant and positive influence toward online shopping decision. To measure the variable of perceived usefulness in this study, the author uses the indicators as follows: work more quickly, job performance, increase productivity, effectiveness, make job easier, and useful.

PERCEIVED EASE OF USE AND ONLINE SHOPPING DECISIONS

According to [12], perceived ease of use is a belief in ease of use, namely the level in which the user believes that the technology/system can be used easily and without problems. The frequency of use and interaction between the users with the system is also able to show the ease of use. The more commonly used system shows that the system is better known, easier to be operated, and easier to be used by its users. In addition, [17], [18] suggested that perceived ease of use is also able to increase consumer acceptance related to the product or services. [16], [21] stated that perceived ease of use has an influence on online shopping decision. The study conducted by [15] found that perceived ease of use partially has significant influence toward online shopping decision. It is also supported by [30] that perceived ease of use is proven to have a positive and significant influence toward online shopping decision.

Although online shopping is useful, not all consumers do online shopping. [27] suggested that perceived ease of use has an influence on online shopping decision, but not as much as perceived usefulness. Furthermore, [20] stated that perceived ease of use does not have any influence on online shopping decision. In this study, perceived ease of use is measured using the indicators as follows: ease to learn, controllable, clear & understandable, flexible, easy to become skillful, and easy to use.

PERCEIVED RISK AND ONLINE SHOPPING DECISION

Perceived risk is defined as a customer’s perceptions about uncertainty and unintended consequences in carrying out an activity [26] that is private (confidential personal identity) [31]. Risks perceived by consumers are documented as an important factor for consumers [21] in every financial transaction [23]. [21] stated that perceived risk is an important factor that is considered by consumers in shopping online. This statement is in accordance with the results of the study conducted by [3] [23] [24], that perceived risk has an influence on online shopping decision. [15] [30] [34] conducted study with the result which shows that perceived risk partially has a significant influence on online shopping decision.

On the other hand, [33] [34] stated that perceived risk has a negative influence toward online shopping decision. [13] added that perceived risk that is in the context of financial risk has a negative and insignificant influence on online shopping behavior, while product risk has a positive and significant influence on online shopping decision. The results from [35] showed that there is no significant influence of perceived risk toward online shopping decision. In this study, perceived risk is measured with several indicators, namely: Performance Risk, Financial Risk, and Security Risk.

1.1 Hypothesis

H1: There is an influence of Perceived Usefulness toward Online Shopping Decision in the era of Covid-19 Pandemic.

H2: There is an influence of Perceived Ease of Use toward Online Shopping Decision in the era of Covid-19 Pandemic.

H3: There is an influence of Perceived Risk toward Online Shopping Decision in the era of Covid-19 Pandemic.

RESEARCH METHOD

The method of this study uses quantitative approach, a conclusive research that aims to analyze hypotheses and the influence of independent variable toward dependent variable. In this study, independent variable consists of perceived usefulness, perceived ease of use, and perceived risk, while the dependent variable consists of online shopping decisions.

The population of this study is housewives with the age of 35 – 65 years old that are able to use online shopping application in smartphone. The number of sample used is 100 respondents, with the data collected through questionnaire distributed online and offline as well as interview to several key respondents in East Java, Indonesia. The questionnaire is measured using 5 points Likert scale, starting from 1 (strongly disagree) to 5 (strongly agree). Based on the data processing result, it is obtained that all questionnaire items of the variable of perceived usefulness, perceived ease of use, perceived risk, and online shopping decision has r count value of > 0.361; thus all items are valid and can be used as a measurement tool in this study.

| Table 2. Validity Test Results of Instrument |
|---|---|---|---|---|
| No. | Variable | Indicator | Item | Corrected Item- |

Systematic Reviews in Pharmacy  Vol 11, Issue 12, December 2020
Analysis Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Risk Toward Online Shopping In The Era Of Covid-19 Pandemic

Table 3. Reliability Test Results of Instrument

<table>
<thead>
<tr>
<th>N o.</th>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Perceived Usefulness (X1)</td>
<td>0.923</td>
<td>Relia-</td>
</tr>
<tr>
<td>2.</td>
<td>Perceived Ease of Use (X2)</td>
<td>0.809</td>
<td>ble</td>
</tr>
<tr>
<td>3.</td>
<td>Perceived Risk (X3)</td>
<td>0.829</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Online Shopping Decision (Y1)</td>
<td>0.811</td>
<td></td>
</tr>
</tbody>
</table>

In this study, the source from questionnaire item used in each variable refers to some previous studies as follows:
- Perceived Usefulness, modified from [12] [18] with six questionnaire items.
- Perceived Ease of Use, modified from [12] [18] with six questionnaire items.
- Perceived Risk, modified from [13] [36] with six questionnaire items.
- Online Shopping Decision modified from [37] [38] with three questionnaire items.

RESULT

RESPONDENTS’ CHARACTERISTICS

From the respondents’ characteristics, it is known that respondents who decide to shop online during Covid-19 pandemic is dominated by housewives over 40 years old of 58 people (58%), the remaining 42% is under 40 years old. The education of 61% of the respondents is bachelor, 35% of the respondents is senior/vocational high school, and 4% of the respondents is junior high school. Housewives who also work in office is 44 people, has a side job at home is 18 people, and the rest 38 people is jobless. The average expense of the respondents per month for shopping is more than Rp3,000,000 with minimum shopping frequency of 5 times per month. 80% of the products bought by consumers are primary needs, and 20% of secondary needs. More details are shown in Table 4.

Table 4. Respondents’ Characteristics

<table>
<thead>
<tr>
<th>Respondent Profile</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 - 45 years old</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>46 – 55 years old</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>56 – 65 years old</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior High School</td>
<td>40</td>
<td>4</td>
</tr>
<tr>
<td>Senior/Vocational</td>
<td>10</td>
<td>13</td>
</tr>
</tbody>
</table>

According to the results of reliability test, it is obtained that all variables have Cronbach’s Alpha value that is greater than 0.70. Thus, it can be concluded that the statements in the research instruments are reliable and can be used as measurement tool. The results from each variable can be seen on Table 3.
Analysis Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Risk Toward Online Shopping In The Era Of Covid-19 Pandemic

<table>
<thead>
<tr>
<th>School</th>
<th>Job</th>
<th>Expense</th>
<th>Shopping Frequency</th>
<th>Shopping Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>Office Worker</td>
<td>&lt;Rp 1,000,000</td>
<td>1 - 5 times/month</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Freelancer /Has Side Job</td>
<td>Rp 1,000,000 – Rp 1.999.999</td>
<td>5 - 10 times/month</td>
<td>m</td>
</tr>
<tr>
<td></td>
<td>Jobless</td>
<td>Rp 2,000,000 – Rp 2.999.999</td>
<td>&gt;10 times/month</td>
<td>o</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;Rp 3,000,000</td>
<td></td>
<td>u</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>t</td>
</tr>
</tbody>
</table>

| | School | Job | Expense | Shopping Frequency | Shopping Product |
| | Bachelor | Office Worker | <Rp 1,000,000 | 1 - 5 times/month | A |
| | Freelancer /Has Side Job | Rp 1,000,000 – Rp 1.999.999 | 5 - 10 times/month | m |
| | Jobless | Rp 2,000,000 – Rp 2.999.999 | >10 times/month | o |
| | | >Rp 3,000,000 | | u |
| | | | | t |

The testing of the influence of Perceived Usefulness, Perceived Ease of Use, and Perceived Risk on Online Shopping Decision produce R (correlation) and R² (determinant coefficient) is shown in Table 1.

Table 5. Correlation Value and Determinant Coefficient of Respondents

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.442a</td>
<td>0.195</td>
<td>0.17</td>
<td>1.75</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Perceived Risk, Perceived Usefulness, Perceived Ease of Use
b. Dependent Variable: Online Shopping Decision

In the model feasibility test, the testing of the influence of perceived usefulness, perceived ease of use and perceived risk toward online shopping decision shows Adjusted R Square value of 0.170 or 17%. The remaining 0.830 or 83% is influenced by other variables outside this study. These results indicate that perceived usefulness, perceived ease of use, and perceived risk only have a small influence on online shopping decisions in the era of Covid-19 pandemic.

MODEL AND RESEARCH HYPOTHESIS

In this study, independent variable consists of perceived usefulness, perceived ease of use, and perceived risk, while the dependent variable consists of online shopping decisions. The research design is shown in Figure 1:

Figure 1. Research Design

Based on the partial test (t test), the results obtained can be seen on Table 6 below:

Table 6. Multiple Linear Regression Test Results

<table>
<thead>
<tr>
<th>Coefficients*</th>
</tr>
</thead>
</table>

CLASSICAL ASSUMPTION TEST

In this study, classical assumption test is done by conducting normality test, multicollinearity test, and heteroscedasticity test. The results of the data processing for the normality test shows normal distribution in the K-S normality test with a significance value greater than 0.05, which means that the answers from respondents for each statement differ in each respondents; thus it can be said that it spreads evenly.

In the multicollinearity test, it is known that the tolerance value of the variable is ≥ 0.01. With this result, it can be known that there is no multicollinearity in the independent variable. It includes the results of the VIF test, which value is ≤ 10; which means that no multicollinearity occurs.

Furthermore, heteroscedasticity test is carried out using Glejser test. Based on the test result, it can be known that the significance value of each independent variable is 0.05. Thus, it can be concluded that the regression model does not experience heteroscedasticity.

MODEL FEASIBILITY TEST
Analysis Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Risk Toward Online Shopping In The Era Of Covid-19 Pandemic

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>5,600</td>
<td>0.000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.094</td>
<td>0.204</td>
<td>2.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Perceived Ease of Use</td>
<td>0.163</td>
<td>0.315</td>
<td>3.18</td>
<td>0.00</td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>0.035</td>
<td>0.092</td>
<td>0.97</td>
<td>0.33</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Online Shopping Decision

From the table above, it can be known the equation for the multiple linear regressions as follows:

\[ Y = 5,600 + 0.094X_1 + 0.163X_2 + 0.035X_3 \]

Note:  
5,600 = Constant  
Y = Online Shopping Decision  
X1 = Perceived Usefulness  
X2 = Perceived Ease of Use  
X3 = Perceived Risk

Based on the table, the t count for Perceived Usefulness (X1) is 2.042. The level of significance is 0.044 < 0.05 or 5%. Therefore, H0 is rejected and H1 is accepted. Therefore, Perceived Usefulness (X1) variable partially has significant influence toward Online Shopping Decision (Y).

The t count for Perceived Ease of Use (X2) is 3.181. The level of significance is 0.002 < 0.05 or 5%. Therefore, H0 is rejected and H2 is accepted. Therefore, Perceived Ease of Use (X2) variable partially has significant influence toward Online Shopping Decision (Y).

The t count for Perceived Risk (X3) is 0.979. The level of significance is 0.330 > 0.05 or 5%. Therefore, H0 is rejected and H3 is accepted. Therefore, Perceived Risk (X3) variable partially does not have significant influence toward Online Shopping Decision (Y).

From the results of the linear regression equation above, it is obtained the constant values and the value of the three variables that are marked as positive. This means that housewives who become the respondents in this study will decide to shop online if they get various benefits or usefulness, easy to be used, and has small risk.

**DISCUSSION**

The results of the study show that perceived usefulness has a positive and significant influence on online shopping decision. During the Covid-19 pandemic, housewife respondents feel many benefits from online shopping, such as able to find the products that they want faster, find more product choices, feel more comfortable to be able to shop without going out and putting on make ups, able to keep their privacy, and able to fulfill their needs by continue doing social distancing and physical distancing.

Furthermore, it is found that perceived ease of use has a positive and significant influence on online shopping decision. This is in line with the study from [16][17][18][21][30] who stated that perceived ease of use has a significant influence on online shopping decision. Housewife respondents choose to shop online because it is not difficult to learn, there are complete information that is provided related to product details, product prices, and payment process in online shopping, there is a broad expedition range, and many attractive promotion offers.

In perceived risk variable, it is found that it does not have any influence on online shopping decision. This result supports the study conducted by [35], who stated that there is no significant influence caused by perceived risk on online shopping decision. Theoretically, the risk of online shopping consists of financial, social, time, performance, physical, and privacy risks. However, during Covid-19 pandemic, housewife respondents tend to consider more about psychological and physical risks that involve their lives so as not to be infected with Covid-19. Thus, according to the respondents, offline shopping will be more risky nowadays compared to online shopping.

The limitation of this study is that it does not use open questionnaire to explore more about the influence of each variable, and not group the type of the e-commerce. The influence of these three variables is also very small. Therefore, for future researchers, it is suggested to add other variables such as promotion, lifestyles, and brand trust of the e-commerce.

**IMPLICATION**

Given that the public is now aware of the existence of online shopping, in which all e-commerce offers similar benefits or usefulness and ease of use, e-commerce must be able to build high trust for their customers. They also can increase sales promotion program in the form of more attractive and varied discounts.

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Analysis Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Risk Toward Online Shopping In The Era Of Covid-19 Pandemic

319

Systematic Reviews in Pharmacy Vol 11, Issue 12, December 2020


Analysis Of Perceived Usefulness, Perceived Ease Of Use, And Perceived Risk Toward Online Shopping In The Era Of Covid-19 Pandemic


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