THE EFFECT OF SECURITY AND USER EXPERIENCE TO REPURCHASE INTENTION OF E-COMMERCE USERS: EVIDENCE FROM TOKOPEDIA-INDONESIA

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ABSTRACT

There are increasing number of e-commerce players in Indonesia from year-to-year, thus business competition in the industry become more intensive. There are several big e-commerce players in Indonesia based on number of visitors quarterly, including: Shopee, Tokopedia, Lazada, and Bukalapak. This study focuses on Tokopedia since Shopee, as the close competitor, had successfully replaced Tokopedia as the most visited e-commerce site since late 2020. This study aims to examine the user's repurchase intention of Tokopedia based on two independent variables, namely: security and user experience. 183 valid respondents are involved in data processing. Hypotheses test found that security and user experience positively affect repurchase intentions. Furthermore, the study reveals that security affects repurchase intention more than user experience.

Keywords: Security, User Experience, Repurchase Intention, E-Commerce, Indonesia

I. INTRODUCTION

Public interest for online shopping is increasing lately. Online shopping is considered more practical because transactions can be made anytime and anywhere as long as there is internet access. Data from the Indonesian Internet Service Providers Association (APJII) revealed that internet access users in the second quarter of year 2020 experienced an increase and reached 196.7 million users or about 73.7% of the Indonesian population (Bulletin APJII Edition 74/Nov 2020, accessed March 21st, 2021). One of the reasons for the increasing internet access is for online shopping.

The increasing public interest in online shopping affect the development of the digital trade (e-commerce) industry in Indonesia. It can be seen from the acceleration of e-commerce growth in Indonesia in 2020, reaching 91% compared to the previous year (2019) which was only 54%. Number of e-commerce new users are around 12 million (Okezone.com (2020)/accessed on 22nd March 2021). E-commerce is a process where buyers and sellers carry out activities in the form of exchanging information, money and goods / services through electronic means, especially the internet (Peter & Olson, 2014).

The number of e-commerce players grow rapidly every year and makes business competition in the industry become tighter. According to APJII, there are several big and favorite marketplaces for online shoppers in Indonesia such as Shopee, Tokopedia, Lazada, and Bukalapak. It is based on their average monthly visitors per quarter.

Based on iPrice observation, there are fierce competition among e-commerce players in Indonesia as can be seen in Figure 1. Even though the number of visitors had decreased throughout 2019, entering 2020 the number of visitors of big e-commerce players continued to increase from time to time. Shopee has significant growth in the number of visitors. Tokopedia, which was popular in early 2019, now less popular than Shopee. Up to Q3 2019, Tokopedia still occupy the position as the number one of e-commerce that visited by most Indonesian online shopper. In Q3 2019 the visitors of Tokopedia reached 65,953,400 visitors. Meanwhile, Shopee, their close competitor, was only able to attract monthly visitors about 55,964,700 visitors. Followed by Bukalapak with...
42,874,100 visitors, and Lazada with 27,995,900 visitors. Unfortunately, entering Q4 2019 up to Q4 2020, the position of Tokopedia replaced by Shopee as number one e-commerce in Indonesia.

Tokopedia is a platform that specially designed to provide an easy, safe, and fast online shopping experience with a strong payment system and logistical support. Tokopedia has a wide selection of product categories, from Electronics, Home Appliances, Health, Beauty, Mother and Baby equipment, Fashion to Sports Equipment. Tokopedia has a goal to become the most preferred e-commerce in Indonesia. Since it was officially launched eleven years ago, Tokopedia has been consistently at the top of the e-commerce competition in Indonesia. However, the latest data collected in Figure 1 (Iprice, 2021; Csachova, 2020; Espinoca et al., 2020; Mnini & Ramoroka, 2020; Dlalisa & Govender, 2020) shows that starting in the fourth quarter of 2019 to 2020, Tokopedia shifted to the second place and Shopee became the number one.

![Figure 1](https://iprice.co.id/insights/mapofecommerce/)  
**Figure 1**  
Average Number of E-commerce Site Visitors Per Quarter (in millions)  
Source: adapted from [https://iprice.co.id/insights/mapofecommerce/](https://iprice.co.id/insights/mapofecommerce/) accessed on 21st March 2021

It can be seen that Tokopedia has serious problem that requires appropriate strategies to increase consumer intention in making continuous purchases and return to become the number one buying and selling site in Indonesia. Tokopedia must pay attention to various factors related to online shopping customer behavior. Customer is the most important thing in running a business because without customers, there will be no profit for company. The phenomenon about the shifting of Tokopedia’s ranking position showed the decline or even loss of customer repurchasing action and it can be influenced by various factors. According to Febriani and Ardani (2021), intention in repurchasing is very important to make consumers interested in revisiting a certain website. Repurchase intention is the decision of each individual to make repeat purchase after gaining experience on previous purchases at the same service or company based on possible considerations and circumstances. According to Peter and Olson (2014), when consumer gets satisfaction, they can make repeat purchases, to be loyal to the service where they bought the item so that consumers can tell good things to others. Thus, it is very important for online business players to understand why customers are willing to continuously repurchase on online sites and online shops (Chiu, Hsu, Lai, & Chang, 2009).

One of the factors that can influence the online repurchase intention is the security of the e-commerce service provider's website. Nuseir, Arora, Al-Masri, and Gharaibeh (2010) mentioned that the security of transactions and customer data security is a major concern of customers in purchasing online products and services. They also suggest that security can have different meanings for everyone and in different contexts when shopping online. For example, when shopping online, consumers hope that their personal data will be stored properly and not misused, their payment will be guaranteed, especially for those who use credit card payment.
In March 2020, Tokopedia encountered a problem related to security (Pratomo, 2020). Kompas.com (accessed March 22nd, 2021) reported that there were cases of data leakage involved 91 million subscribers. This can be perceived as weak security at Tokopedia, and it is alleged that the decrease of Tokopedia visitors that occurred lately was also caused by this incident.

In addition, consumers repurchase intention in online shopping is also influenced by individual factor. This factor is in the form of user experience in using certain technologies, including applications and websites. User experience refers to the experience that users feel in using an online shopping service (Garrett, 2011). The experience is personalized because different customers have different experiences. Thus, to increase intention in repurchasing from visitors/customers, Tokopedia needs to understand what the user's experience is like.

Anwar and Afifah (2016) found that the safety factor has a positive and significant impact on repurchase intention at online shopping sites. In addition, Annisa, Suwandari, and Adi (2019) suggests that user experience has an effect on customer satisfaction. The higher the satisfaction, the higher the frequency of repurchases made by consumers.

Since there are a lot of e-commerce companies in Indonesia, the competition is become stiff. Consumers who have used Tokopedia's services do not necessarily have a repurchase intention. Therefore, it is important for Tokopedia to understand why customers are willing to make repeat purchases online. Based on the above explanation, the purpose of this study is to analyze how the security factor and the user experience will have an impact on Tokopedia customer repurchase intention.

II. LITERATURE REVIEW

Repurchase Intention

Repurchase intention is important for every company because it costs less to retain a customer than finding a new customer. Therefore, repeated buying behavior from existing customers creates more profits for the company (Chiu et al., 2009; Zhang, Fang, Wei, Ramsey, McCole & Chen, 2011). When customers are retained, they tend to recommend services to new buyers such as friends or relatives, which can help companies reduce costs of finding new customers, leading to increased profits (Pham & Ahammad, 2017).

After buying a product, consumers will feel satisfied or dissatisfied and will then engage in post-purchase behavior. Satisfied consumers will return to the company to buy products, recommend products to others, have no intention in other brands and continue buy back different products for the same company (Kotler & Keller, 2016: 244). Repurchase is defined by Chou and Hsu (2016) as the reuse of a customer's online channel to buy from a particular seller. The product or brand that is already in the customer's heart will cause the customer to continue buying or repurchasing the product. Thus, the intention to repurchase is the subjective desire of the individual customer for the satisfaction obtained from purchasing a product or using the previous online site (Diyanti, Yuliniar, & Suharyati, 2021). There are four indicators to measure repurchase intention, namely: transactional intentions, referential intentions, preferential intentions, and explorative intentions (Setyono, Widyana, Siaputra, & Jokom, 2017).

Security

In addition to having a positive side, e-commerce also has a negative side that is cybercrime, for example: fraud by means of identity theft and lying to customers, credit card fraud, phishing, spammers, and others. These threats to security will cause customers to be afraid to make online transactions and then return to traditional methods of doing business (Wajong & Putri, 2010).

Park and Kim (2006) defines security as the ability of an online store in controlling and custody of consumer data transactions. When a consumer is guaranteed the security of his personal data, the consumer is more likely to be willing to provide personal information and will buy with a sense of security. Security as the ability of online stores to control and maintain security for data transactions. Raman and Viswanathan (2011) revealed the measurement of security factors as follow:

1. Security guarantee is to guarantee a situation free from danger. This term can be used in connection with crime, all forms of accidents, etc.
Data confidentiality is the practice of exchanging information between a group of people, which can be as many as one person, and hiding it from other people who are not members of the group.

According to Nuseir et al. (2010), security can have different meanings for everyone and in different contexts when shopping online. Furthermore, Nolan (2005) stated that security for a person can mean expectations of anonymity, hopes of getting privacy, control over personal information, and expectations of confidentiality. Satisfied customers will encourage repeated purchases on the e-commerce. Therefore, security is one of the main issues in determining the success of an e-commerce. Albrechtsen (2007) observed that users consider an approach that involves users to be much more effective in influencing user awareness and behavior in information security. One of the reasons for the security problems is that the internet was not developed with security in mind, so many of the techniques employed by security professionals are reactionary and hackers use these same methods.

Many previous studies have shown that security has a positive effect on repurchase intention (Abid & Dinalestari, 2019; Arasu & Viswanathan, 2011; Jefryansyah & Muhajirin, 2020; Nguyen, Nguyen, Tan, 2021; and Sarjita, 2020). Alwafi and Magnadi (2016) stated that the security has positive influence on online purchase intentions on Tokopedia.com. Based on the results of the previous research and literature study, it can be proposed the first hypothesis as follow:

**H1: Security has a positive effect on repurchase intention**

**User Experience**

User experience is important for modern consumers. User Experience relate with comprehensive concept that describes a person's subjective experience of interacting with technology (Rodden, Hutchinson, Fu., 2010). Furthermore, it is also explained that the concept of user experience (commonly abbreviated as UX) has two basic assumptions. UX depends on a personal experience (subjective in nature) and the presence of contextual factors such as physical, social, and cultural aspects as a situation at the time of use. UX is dynamic and transient that changes throughout use. Good and positive experiences that are obtained through interaction with the system or application can encourage consumers to have a good perception about the brand and product.

Rodden et al. (2010) offer UX measurement which includes four dimensions, namely happiness, task success, earnings, and uptime. Detailed explanations about the four dimensions are:

1. **Happiness:** satisfaction, visual appeal, possibility to recommend, and perceived ease of use.
2. **Task Success:** efficiency (e.g., time to complete a task), effectiveness (e.g., percentage of tasks completed), and the rate at which errors occurred.
3. **Earning:** user perceptions about the benefits obtained in accessing the application.
4. **Uptime:** user's perception of guaranteed information availability and feature reliability.

Thus, this study assumes user experience as a form of interaction between humans (users) and online shopping sites (namely Tokopedia). Rogers, Sharp, and Preece (2012) define aspects of UX that focus on understanding user needs. It also includes the purpose of business. UX promote high quality interaction. The intended user experience is related to what users feel in relation to ease, comfort, efficiency, benefit when they use the Tokopedia online shopping site services. Research conducted by Annisa et al. (2019) proved that UX has a positive effect on repurchase intention. When consumers get a pleasant experience in using an application or website, consumers will have an intention in reusing the application in the future (Abid & Dinalestari, 2019).

Thus, the second hypothesis is:

**H2: User Experience has a positive effect on repurchase intention**

**III. RESEARCH METHODOLOGY**

This research is a cross sectional quantitative study using a questionnaire as the primary means of collecting primary data. This study also uses secondary data obtained from websites, newspapers and books. The population
in this study are Tokopedia’s users who had ever used the Tokopedia application. The sampling technique used is non-probability method, namely purposive sampling due to an unknown population. The questionnaire was distributed online via Google Form and the measurement scale used was the Likert scale.

One dependent variable and two independent variables are included in this study. Dependent variable is the intention to buy back, namely repurchase intention. Independent variable are security and user experience. Repurchase intention is measured by using a measurement of Setyono et al. (2017). Variable security is measured by using a measurement of Arasu and Viswanathan (2011). Meanwhile, the user experience is implemented measurements from Rodden et al. (2010).

This study conducts multiple regression to test the hypothesis using the SPSS version 23 application. Before the hypothesis testing, this study conducts the validity and reliability test of the questionnaire items. The result is good since Alpha Cronbach score for all variables are .947, .913, and .830 respectively for UX, security, and repurchase intention.

IV. RESEARCH RESULTS AND DISCUSSION

Characteristics of Respondents

Table 1 below shows the description about characteristics of respondents. The returned questionnaire was 198 but 15 respondents were rejected due to incomplete response. Thus, the total number of valid respondents is 183.

From Table 1, it can be seen that most of the respondents in this study comes from Java Island area, with 73% comes from the provinces of West Java, Banten and DKI Jakarta. The age of respondents is dominated by people in the 20-29 years old (69%) and followed by the group of 30-39 years old (16%). This shows that Tokopedia customer segment are young adults and adults. Based on gender, the respondents are dominated by women (63%). It is supported by data released by Statista.com in June 2020 (data.tempo.com/accessed on 24th May 2021) which reports that Indonesian women prefer to shop online compared to men. Based on the average education, it turns out that the respondents have a high education as evidenced by 60% of the respondents hold the S1 degree. Regarding the type of job, respondents were dominated by students (36%), private employees (29%) and self-employed (10%). The majority of respondents also revealed that their monthly expenditure is less than 5 million rupiah.

Since 80% of respondents got informed about Tokopedia from social media and the internet, it can be concluded that both media can be used for effective promotions. Associated with the frequency of customer in using Tokopedia, respondents mentioned once a month is the dominant (46%) which was followed by once a week (10%). This figure seems not good enough since there is a lot of respondents that not only access Tokopedia platform for the activities of e-commerce (about 96%). It is evidenced by respondents who stated that they also access Shopee (81%), Lazada (6%), Bukalapak (4%), JD.id (2%), and other e-commerce (7%). This information shows that Shopee can be a serious competitor for Tokopedia. There are several reasons that encourage customer to shop at Tokopedia, including advertisements (on social media, mass media, the internet), affordable product prices, the number of discounts and the complete range of products available.

Table 1

<table>
<thead>
<tr>
<th>Characteristics of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domicile</td>
</tr>
<tr>
<td>West Java, Banten &amp; DKI Jakarta</td>
</tr>
<tr>
<td>Central Java, Yogyakarta &amp; East Java</td>
</tr>
<tr>
<td>Outside Java Island</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>&lt;20 years</td>
</tr>
<tr>
<td>20-29 Years</td>
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<tr>
<td>30-39 years</td>
</tr>
<tr>
<td>≥ 40 years</td>
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<tr>
<td>Gender</td>
</tr>
<tr>
<td>Man</td>
</tr>
<tr>
<td>Women</td>
</tr>
<tr>
<td>Last education</td>
</tr>
<tr>
<td>High school and below</td>
</tr>
<tr>
<td>Diploma</td>
</tr>
</tbody>
</table>
Descriptive Analysis

Descriptive analysis of the variables of this study can be seen in Table 2. From the table, it can be seen that all variables have various number of responses. All variables have a minimum number of 1 (strongly disagree) and a maximum of 5 (strongly agree), which means that all responses are contained in this study. Variable user experience shows the highest mean (3.9) followed by security (3.6) and repurchase intention (3.5). Based on the standard deviation, it can be seen that variable with the smallest distortion is security, while the highest distortion is user experience. It can be concluded that user experience has a higher diversity of responses than other variables even though the average response is higher than other variables.

Table 2
Descriptive Analysis of All Variables Understudy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Dev.</th>
<th>Dimensions</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>1</td>
<td>5</td>
<td>3.6</td>
<td>.593</td>
<td>A security guarantee</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Data confidentiality</td>
<td>3.7</td>
</tr>
<tr>
<td>User</td>
<td>1</td>
<td>5</td>
<td>3.9</td>
<td>.731</td>
<td>Happiness</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Task Success</td>
<td>3.9</td>
</tr>
</tbody>
</table>
Table 2 also shows mean score for each dimension on each variable. All dimensions show mean score that exceeds 3.5 (likely) except for the dimensions of exploratory intention and referential intention which are more likely to agree. The statement "I look for information about Tokopedia (such as promotional news, events, programs) through various media before shopping" on the exploratory intention dimension gets the lowest average score, which is 3.2. Otherwise, earning dimension of user experience variable is the one that reach highest average score, 4.0 (agree).

Results of testing and discussion of hypotheses

There are three hypotheses in this study, consist of two hypotheses that test the partial direct effect of the independent variables on the dependent variable, and one hypothesis that tests the simultaneous effect between all independent variables and the dependent variable. All the requirements off classic tests for linear regression analysis were met. The data shows linear relationship, normal distributed, homoscedastic, and statistically independent among independent variables. Table 3 shows the results of hypothesis testing using multiple linear regression using SPSS version 23.

Table 3

Multiple Regression Analysis Results

<table>
<thead>
<tr>
<th>Independent variable:</th>
<th>Repurchase intention</th>
<th>Earning</th>
<th>Uptime</th>
<th>Transactional intention</th>
<th>Referential intention</th>
<th>Preferential intention</th>
<th>Explorative intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security</td>
<td>1</td>
<td>3.5</td>
<td>.696</td>
<td>3.9</td>
<td>3.4</td>
<td>3.6</td>
<td>3.2</td>
</tr>
<tr>
<td>User Experience</td>
<td>5</td>
<td>3.9</td>
<td>3.9</td>
<td>3.4</td>
<td>3.6</td>
<td>3.4</td>
<td>3.2</td>
</tr>
<tr>
<td>R²</td>
<td>3.696</td>
<td>.565</td>
<td>.560</td>
<td>116.688 **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>3.696</td>
<td>.560</td>
<td>116.688**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Significant levels ** p < .01; * p < .1

Table 3 shows that all hypotheses are accepted with a significance level of 0.00. All independent variables, namely security (β = .445, p < .0) and user experience (β = .366, p < .0) have a significant effect on repurchase intention at Tokopedia. Security variable has a higher beta number compare to user experience; thus, security is a factor that is more considered by users than experience factor. In addition, the F test also shows that the two independent variables have a significant effect on repurchase intention at Tokopedia simultaneously. Adjusted R² is 0.560 which means that security and user experience explains 56% of the variance of the repurchase intention. The remaining 44% is influenced by other independent variables that were not studied, such as: price, ease of use, comfort, satisfaction, quality of service, and others.

The present study demonstrates that the perceptions of users regarding security and user experience influence user’s repurchase intentions. In other words, the more user perceives that Tokopedia is a secure e-commerce site than user will be back for more purchase. It supports previous researches for example: Abid and Dinalestari (2019), Alwafi and Magnadi (2016), Arasu and Viswanathan (2011) Jefryansyah and Muhajirin (2020) Nguyen et al. (2021), and Sarjita (2020). The results also indicates that the more positive of user experience in online e-commerce activities the more they will buy more from Tokopedia. It supports the study of Annisa et al. (2019) and Abid & Dinalestari (2019).

V. CONCLUSION, RECOMMENDATIONS AND FURTHER RESEARCH

The present study demonstrates the important of security issue and user experience in increasing user intention to rebuy a product. In this case, rebuy can be interpreted as users’ tendency to reuse Tokopedia for their future e-
commerce transactions. Users positive perception on Tokopedia’s security as well as their positive personal experience in using the application drives their inclination in repurchase of the product/service in the future. This study also reveals that security is more important issue compare with experience for user.

Based on this result, the present study recommends that Tokopedia should take security as a serious issue for competing in e-commerce industry. A significant investment and approach should be conducted by Tokopedia to increase the safety for user to make transactions on Tokopedia platform, especially the security from misuse of users’ data and information. In terms of user experience, this study finds that Tokopedia has been doing great jobs. However, some efforts can be proposed to increase happiness of user in using this application, for example by giving more discount, personalize offering, etc.

Finally, this study has a limitation concerning the domicile of the respondents that dominantly come from only three region (West Java, Banten, and DKI Jakarta). Thus, the future study should improve the distribution of respondents to all regions in Indonesia. The present study also suggests to look further into promotional issues, for example creativity in developing promotional material that support a viral marketing, enhancement of advertising mix, etc.

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