



Analysis of the Effect of Using Marketplace Based on Customer Data Security

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ABSTRACT

The era of the digital economy has become a trend that facilitates transactions for all individuals. One of them is the existence of a marketplace application that uses the internet network to facilitate the buying and selling process. Currently, numerous individuals use the functionality and convenience of the marketplace application for their various activities and needs. Obviously, the features and convenience of the marketplace application have been significantly adapted to meet the needs of customers, and customer data security has been prioritized. This study examines the level of customer understanding regarding the security of personal data when conducting online transactions and utilizing marketplace applications. Random sampling was used to distribute questionnaires containing 16 questions with guttman scale assessment about environmental and social influences, personal data security facilities, the purpose of using the marketplace, and self-awareness regarding customer data security when using the marketplace application to 80 respondents. 84% of customers stated that the security of their personal data has been entrusted to the used marketplace application, according to the overall findings of the study. Obviously, this is related to the customer's needs in utilizing marketplace features, as 77.5% of customers strongly believe that the marketplace application they use provides a level of security for customer personal information.

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1. INTRODUCTION

The digital age has become one of the most pervasive societal trends. Due to the rapid development of internet telecommunications networks and the proliferation of smartphones and other internet-connected devices, all current activities can be performed

on a device that is connected to the internet (Qomariyah, 2009) (Pahlevi, 2022). In order to support the digital economy, every current application provider must be able to create applications that are compatible with the devices used by customers and create features that make it easier for customers to conduct transactions and other community-related activities (Helianny, 2019) (Dewantara et al., 2022).

The marketplace is one of the most popular digital services available today. The development of the marketplace to support the online buying and selling process (Witro et al., 2021) is one of the benefits the general public can enjoy when conducting buying and selling transactions. Tokopedia, Shopee, Lazada, and Blibli are prominent marketplaces (Putri & Zakaria, 2020). The Shopee website received 171.2 million visits in July 2022, while the Tokopedia website received 147.7 million visits, followed by 64.1 million visits to the Lazada website, 24.9 million visits to the Blibli website, and 24.1 million visits to the Bukalapak website during the same period (Cindy Mutia Annur, 2022).

In regards to the features and usability of the marketplace application, there is no doubt, as customers are undeniably spoiled with features and convenience, and as a result, they utilize marketplace applications frequently (Safarudin, 2018). However, security of customer data (Pujianto et al., 2018) must be a primary concern when utilizing a marketplace application (Indriani, 2017). Protection for transactions and storage of personal data that must be safeguarded. When conducting transactions on certain websites, customers can consider the level of security and be cautious. Information security on websites is crucial (Aryani & Susanti, 2022) for attracting customers and fostering positive relationships between customers and marketplace businesses. This relationship is crucial to the competitive advantage of the company (Halizah et al., 2022). The usefulness of website information is a significant factor in the success of the marketplace (Soedjono et al., 2021).

The purpose of this study is to examine the security of customer personal data when using marketplace applications from the perspective of marketplace customers. This study employs a questionnaire distribution method with questions designed to elicit customer knowledge of marketplace application usage. With the expectation that the security of the customer's personal data will become the most important aspect of the marketplace application's usability.

2. RESEARCH METHOD

2.1. Marketplace

Marketplace is an internet-based online medium (web-based) where buyers and sellers conduct business activities and transactions. Buyers can find as many service providers as they desire, resulting in competitive market prices. Regarding suppliers or vendors (Apriadi & Saputra, 2017), you can find businesses that require your products or services. The B2B e-commerce Marketplace is an e-business community platform that offers businesses a marketplace to adapt to B2B e-commerce and other e-business activities (Yustiani & Yunanto, 2017).

2.2. Information Security

The practice of preventing or detecting fraud in information-based systems where the information itself has no physical meaning is known as information security (Indrajit, 2016). Data protection, integrity, authentication, and availability are all aspects of computer security. Aside from these four aspects, two others remain relevant to e-commerce: access control and non-repudiation [17].

2.3. Customer

Customers are individuals or groups who purchase a product, whether physical or a service, based on various factors such as price, quality, location, service, and so on (Tandon et al., 2017) ([1], 2020).

2.3. Research Stages

This study uses a questionnaire distribution technique. The author distributed questionnaires to Tokopedia and Shopee users in order to determine the impact of customer data security on the desire to use the marketplaces at Tokopedia and Shopee. Using a random sampling strategy, questionnaires will be distributed to 80 respondents online via a Google Form link. This study's questionnaire is an open-ended questionnaire. There are 16 questions in the questionnaire that require a score based on the Guttman scale, with yes/true and no/false options.

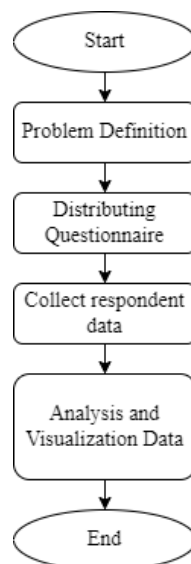


Figure 1. Research Stages

In terms of customer data security, the research phase begins with a problem definition concerning shopping analysis in the marketplace. The subsequent step involves compiling and distributing questionnaires to respondents in order to determine their perspectives on customer data security when considering shopping at the marketplace. Afterwards, questionnaire-obtained respondent data is analyzed, and data visualization is performed.

3. RESULTS AND DISCUSSIONS

3.1. Respondent Analysis

The gender distribution of respondents is displayed in Table 1 below.

Table 1. Number of Respondents by Gender

Gender	Number of Respondents	Percentage(%)
Male	34	42,5
Female	46	57,5
Total		100

According to table 1, 42.5% of the 80 respondents are male, while 57.5% are female.

Respondents from the primary marketplace.

Table 2. Number of Respondents Based on Marketplace

Marketplace Type	Number of Respondents	Percentage(%)
Shopee	42	52,5
Tokopedia	19	23,75
Lazada	8	10%
Blibli	6	7,5%
Bukalapak	5	6,25%
Total		100

According to Table 2, the customer segmentation using the shope marketplace is 52.5%, the Tokopedia marketplace customer is 23.75 %, the Lazada marketplace customer is 10%, the Blibli marketplace customer is 7.5%, and the Bukalapak marketplace customer is 6.25 %.

3.2. Questionnaire Analysis

There are sixteen questionnaire questions for eighty respondents pertaining to a variety of factors, including environmental and social influences, personal data security facilities, the purpose of using the marketplace, and self-awareness regarding customer data security when using the marketplace application.

Table 3. Questionnaire Question

No	Question	Aspect
1	Customer use the market by own volition.	
2	Customers shop at the market because it is popular in their community.	
3	When registering on a marketplace, customers are aware of the security risk to their personal information.	
4	When personal data is stored in the marketplace, the customer claims it is secure and has not been altered by outside parties.	Environmental And Social Influences
5	The customer's preferred marketplace may offer security assurances for the customer's private data.	
6	When using the customer's marketplace website, users feel secure and at ease.	
7	The customer can resolve any issues with the security of their personal information themselves.	
8	The customer believes that the marketplace they use is secure against the possibility of data breaches.	Personal Data Security Facilities
9	Customers may trust the marketplace's personal data protection.	
10	The marketplace website's information on data security is accurate.	
11	The customer's devices and the marketplace are compatible.	
12	Customers are content to utilize the data security technology that is currently available on the market.	The Purpose Of Using The Marketplace

13	Customers frequently shop on the present customers' marketplace.	Self-Awareness Regarding Customer Data Security When Using The Marketplace Application
14	Customers frequently use the market for a variety of purposes.	
15	Because of a personal desire, the customer visits the marketplace website and supplies personal information for the account's completion.	
16	Customers utilize this market as a result of making a conscious decision to do so.	

3.3. Analysis of Questionnaire Results

The next step is to examine the questionnaire in light of the respondents' responses. The sixteen questionnaire questions were evaluated using the Guttman scale, with answer options of yes/true and no/false.

Table 4. Questionnaire Results

No	Question	Respondent's answer	
		Yes/True	No/False
1	Customer use the market by own volition.	45	35
2	Customers shop at the market because it is popular in their community.	52	28
3	When registering on a marketplace, customers are aware of the security risk to their personal information.	32	48
4	When personal data is stored in the marketplace, the customer claims it is secure and has not been altered by outside parties.	26	54
5	The customer's preferred marketplace may offer security assurances for the customer's private data.	55	25
6	When using the customer's marketplace website, users feel secure and at ease.	48	32
7	The customer can resolve any issues with the security of their personal information themselves.	12	68
8	The customer believes that the marketplace they use is secure against the possibility of data breaches.	33	47
9	Customers may trust the marketplace's personal data protection.	62	18
10	The marketplace website's information on data security is accurate.	73	7
11	The customer's devices and the marketplace are compatible.	72	8
12	Customers are content to utilize the data security technology that is currently available on the market.	28	52
13	Customers frequently shop on the present customers' marketplace.	76	4
14	Customers frequently use the market for a variety of purposes.	44	36
15	Because of a personal desire, the customer visits the marketplace website and supplies personal information for the account's completion.	67	13
16	Customer use the market by own volition.	52	28

Based on the questionnaire's answers in Table 4, measures were made by calculating (yes/no score) / (the total respondents) by 100%. The results are as follows.

1. According to data collected from 80 respondents, $45/80 \times 100\% = 56.25\%$ of respondents indicated that they use the market based on their own preferences. While $45/80 \times 100\% = 45.75\%$ of respondents said they did not use the market because of their personal desires.

2. Based on data collected from 80 respondents, it was determined that $52/80 \times 100$ percent = 65 percent of respondents use the marketplace since it is widely utilized in the social context. In the meantime, $28/80 \times 100\% = 35\%$ of respondents indicated that they utilize the marketplace for reasons other than its prevalence in the surrounding social environment.
3. Based on data collected from 80 respondents, it was determined that $32/80 \times 100\% = 40\%$ of respondents are aware of the danger associated with personal data protection while enrolling for a marketplace account. In the meantime, $48/80 \times 100\% = 60\%$ of respondents indicated that they were unaware of the risk associated with personal data security.
4. Based on data collected from 80 respondents, it was determined that $26/80 \times 100\% = 32.5\%$ of respondents believe the market is secure in terms of personal data protection and is secured from third-party alterations. In contrast, $54/80 \times 100\% = 67.5\%$ of respondents indicated that they are not secure for personal data security and are susceptible to modification by other parties.
5. $55/80 \times 100\% = 68.75\%$ of respondents indicated that the marketplace they use can give security guarantees for consumers' personal information, according to data collected from 80 respondents. In the meantime, $25/80 \times 100\% = 31.25\%$ of respondents reported that the marketplace they use cannot guarantee the protection of their personal data.
6. Based on data collected from 80 respondents, $48/80 \times 100\% = 60\%$ of respondents indicated that the marketplace is safe and simple to use. Moreover, $32/80 \times 100\% = 40\%$ of respondents reported that the market is not secure and difficult to utilize..
7. Based on data collected from 80 respondents, it was determined that $12/80 \times 100\% = 15\%$ of respondents indicated that they are capable of handling personal data security issues on their own. In the meantime, $68/80 \times 100\% = 85\%$ of respondents indicated that they could not handle personal data security issues on their own.
8. On the basis of data collected from 80 respondents, it was determined that $33/80 \times 100\% = 41.25$ percent of respondents indicated that the marketplace they use provides some level of protection against the risk of data breaches. While $47/80 \times 100\% = 58.75\%$ of respondents reported that the marketplace they used lacked protection against the risk of data breaches, this percentage represents an improvement.
9. Based on data collected from 80 respondents, $62/80 \times 100\% = 77.5\%$ of respondents indicated that the marketplace they use had trustworthy personal data security. While $18/80 \times 100\% = 22.5\%$ of respondents indicated that the Marketplace they use lacks trustworthy protection for personal data.
10. $73/80 \times 100\% = 91.25\%$ of respondents agreed that the data security information supplied by the marketplace website is accurate, based on data collected from 80 respondents. In the meantime, $7/80 \times 100\% = 8.75\%$ of respondents indicated that the data security information supplied by the marketplace website was inaccurate.
11. Based on data collected from 80 respondents, it was determined that $72/80 \times 100\% = 90\%$ of respondents said that the accessed marketplace is compatible with their devices. Moreover, $8/80 \times 100\% = 10\%$ of respondents reported that the accessed marketplace was incompatible with their devices.
12. Based on data collected from 80 respondents, it was determined that $28/80 \times 100\% = 35\%$ of respondents frequently employ data security technologies in the marketplaces

- in which they operate. Moreover, $52/80 \times 100\% = 65\%$ of respondents said that they do not frequently utilize the data security system in the industry they utilize.
13. According to data collected from 80 respondents, $76/80 \times 100\% = 95\%$ of respondents indicated that they frequently utilize the marketplace. Moreover, $4/80 \times 100\% = 5\%$ of respondents indicated that they rarely utilize the market.
 14. According to information received from 80 respondents, $44/80 \times 100\% = 55\%$ of respondents indicated that they always utilize the marketplace for a variety of purposes. In contrast, $36/80 \times 100\% = 45\%$ of respondents indicated that they did not always use the market for several objectives.
 15. According to data collected from 80 respondents, $67/80 \times 100\% = 83.75\%$ of respondents indicated that consumers utilize marketplace sites and supply personal information for account completion out of their own volition. While $13/80 \times 100\% = 16.25\%$ of respondents indicated that they used the website and provided personal information for account completion for reasons other than their own preferences.
 16. Based on data collected from 80 respondents, it was determined that $52/80 \times 100\% = 65\%$ of respondents claimed that they chose the used marketplace voluntarily and after evaluating other marketplaces. While $28/80 \times 100\% = 35\%$ of respondents indicated that they chose the marketplace they did not choose themselves and did not consider after using other marketplaces.

3.4. Data Visualization

Based on the results of the questionnaire analysis, the data visualization stage reveals the results of questionnaire questions with percentage results $> 80\%$ in order to ascertain respondents' perspectives on the security of customer data when buying in a marketplace.

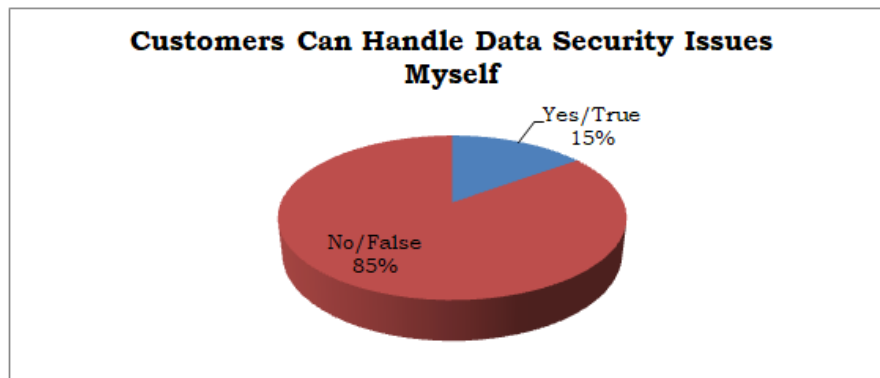


Figure 2. Question no 7

On the basis of Figure 2, it can be deduced that 85% of marketplace customers stated they were unable to solve problems related to personal data security when using marketplace applications, while 15% of marketplace customers stated they were able to solve such problems, such as personal data verification.

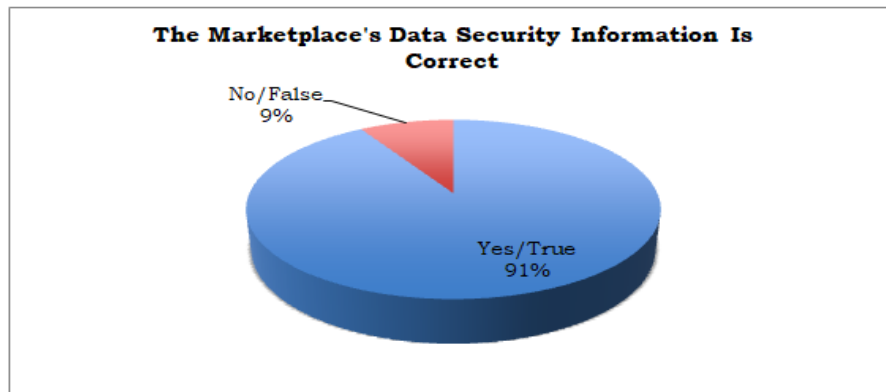


Figure 3. Question no 10

Based on Figure 3, it can be deduced that 91 percent of marketplace users felt that the data security information provided during registration on the marketplace application was very thorough and clear. In the meantime, 9 percent of marketplace clients reported that information regarding data security in marketplace applications is still unclear.

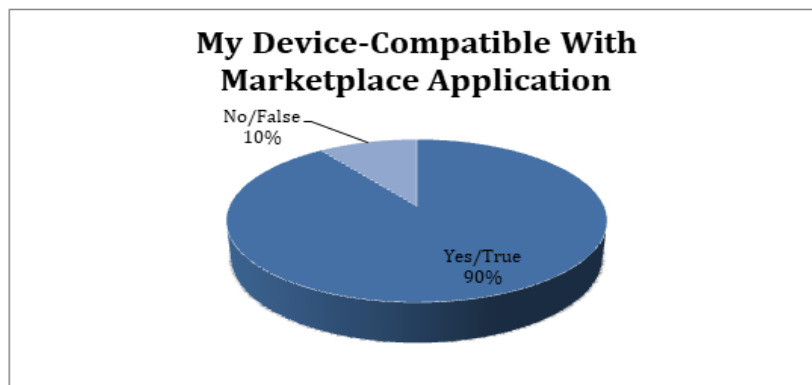


Figure 4. Question no 11

According to Figure 4, 90% of marketplace consumers utilize marketplace applications because they are compatible with their devices, whereas 10% of marketplace customers report that their marketplace applications are not compatible with smartphone devices.



Figure 5. Question no 13

Based on Figure 5, it can be deduced that 95% of marketplace consumers use features from marketplace applications on a frequent basis, while 5% of marketplace users indicate they access marketplace applications infrequently.

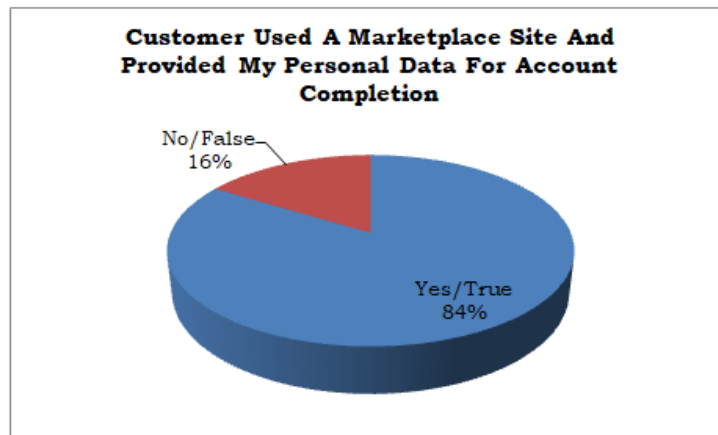


Figure 6. Question no 15

Figure 6 illustrates that 84% of marketplace customers indicated that they voluntarily provided their personal information for the completion of their marketplace account registration. In the meantime, 16% of customers reported that they filled out their personal information because it was required for complete registration on the marketplace application.

4. CONCLUSION

On the basis of this study's analysis, it can be concluded that some marketplace customers are aware and knowledgeable about the security of personal data when registering a marketplace application, as information regarding the completeness of personal data that must be provided is prominently displayed on the website or marketplace application. 84% of customers reported that the security of their personal information was entrusted to the used marketplace application. This is, of course, related to consumer requirements for utilizing marketplace features, as 77.5% of customers firmly feel that the marketplace application they employ is equipped with a level of personal data protection. customers. What has to be highlighted is when there is a problem with the security of the customer's personal data in the marketplace application, as 85 percent of consumers report being unable to resolve the issue.

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