Correlation Analysis of Online Fraud Prevention Efforts by the Tokopedia E-Commerce Platform Usage Decisions

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ABSTRACT

This study aims to determine whether there is a relationship between efforts to combat online fraud by the Tokopedia E-Commerce platform and the decision to use the platform by Tokopedia Users. The type of research used is quantitative research with data collection methods used, namely questionnaires, documentation, and literature studies. The sample used is Quota Sampling. The results of the study show that (1) There is a positive and significant correlation, based on the determination coefficient value (R2) is R2 = 0,345. The variable decision to use the platform is associated with 34,5% in the variable efforts to combat online fraud. (2) The value of the B Coefficient for the total X of 0,636 indicates that this relationship is quite strong between efforts to combat online fraud and the decision to use the platform. Therefore, the alternative hypothesis (Ha) is accepted, while the null hypothesis (H0) is rejected.

Keywords: *E-Commerce, Online Fraud, Marketplace, Tokopedia.*

INTRODUCTION

In today's digital era, online transactions increasingly dominate various aspects of life, including in shopping activities and e-commerce services. According to data reported by Statista, the global e-commerce sector is expected to reach a transaction value of more than $6 trillion by 2024 (Hamin, Aziz, 2022). However, with this rapid growth comes the growing problem of online fraud, adding to the challenges for e-commerce platforms in maintaining consumer trust. Online fraud such as phishing, fraudulent payments, and identity fraud are becoming increasingly common issues, with negative impacts on user image and trust (Muninggar et al., 2024). Tokopedia, as one of the largest e-commerce platforms in Indonesia, has implemented various countermeasures to protect its users, such as two-factor verification and a more secure payment system (Hasan, 2024). This effort demonstrates the importance of understanding how protection policies influence users' decisions to use e-commerce platforms. Based on data compiled by the Ministry of Communication and Information (Kemenkominfo) from 2017 to 2024, there were 405,000 reports of online transaction fraud. As much as 13.1% of fraud occurred in the *e-commerce* sector in 2023.

The main problem faced by e-commerce platform users is the lack of trust in the protection mechanisms provided, which may affect their decision to use the platform. Previous research shows that users' level of trust in the platform greatly influences their decision to transact (Izazi et al., 2024). Tokopedia, as one of the largest e-commerce platforms in Indonesia, has attempted to address this issue by introducing various security features such as a two-step verification system and payment protection (Altsaury et al., 2024). However, despite these efforts, the impact of the counter fraud policy on users' decision to choose Tokopedia as a shopping platform remains unclear. This encourages researchers to explore more deeply the correlation between online fraud prevention policies and the decision to use the Tokopedia platform. Research conducted by Hidayat et al. (2021) shows that the existence of increased security on e-commerce platforms is directly related to the level of user satisfaction (Kondoj et al., 2023). They found that more transparent protection policies can increase user trust and ultimately strengthen user decisions to transact. However, these studies have mostly highlighted aspects of user satisfaction and have not fully linked fraud countermeasures with users' decision to choose a platform. This

result illustrates that although satisfaction and security are important factors, their influence on usage decisions still needs to be further analyzed. This study aims to analyze the correlation between Tokopedia's online fraud countermeasures and users' decision to choose the platform. Theoretically, this research is expected to enrich the understanding of the influence of protection policies on consumer behavior in *e-commerce*.

LITERATURE REVIEW
a. Definition of Online Fraud

Online fraud is a form of fraud that uses services or software that can be accessed via the internet to deceive or take advantage of victims, such as stealing personal information, which can lead to identity theft. Online fraud uses a variety of methods and tools, ranging from software and vulnerabilities in almost all programs and applications to phishing from unexpected locations around the world. In online fraud, perpetrators usually carry out their actions through digital platforms, for example email, social media, fake websites and other online banking applications (T. Hidayat & Farida, 2024). Fraudsters usually use various types of agile actions, for example by spreading information online with the aim of deceiving their victims and causing financial losses, identity theft, and personal data belonging to victims.

b. Elements of Online Fraud

The elements of fraud in article 28 paragraph (1) of the ITE Law, namely (S. Hidayat et al., 2023):

a. Objective element: The act of disseminating, What is disseminated is false and misleading news, From this act, a constitutive effect arises, namely consumer losses in electronic transactions.
b. Subjective elements: The element of guilt, namely deliberately committing the act of spreading false and misleading news that results in consumer harm in electronic transactions, against the law without rights (Prasetyo, 2014).

In addition to several phrases that can be interpreted repeatedly, the article contains several inappropriate elements, such as not explaining to whom the benefits of spreading false and misleading news are detrimental to consumers when conducting electronic transactions, and the existence of uninterpretable phrases that indicate the party who has the right to spread false and misleading news. By considering the comparison between the two articles, of course there will be differences in terms of criminal sanctions, namely the difference between criminal sanctions in Article 378 of the Criminal Code and Article 28 paragraph (1). In the case of article 378 of the Criminal Code, it only stipulates a criminal sanction of imprisonment for 4 years, while article 28 paragraph (1) of the ITE Law does not explicitly mention criminal sanctions, but article 45 paragraph (2) of the ITE Law, which stipulates a maximum imprisonment of 6 years and a fine of one billion rupiah, does not name a legal entity (corporation).

METHODS
This type of research uses a quantitative approach with a correlational analytic design. Correlational research aims to determine the relationship or relationship between two or more variables, in this case the efforts to overcome online fraud by the Tokopedia E-Commerce Platform and the decision to use the platform. This study will test whether there is a significant relationship between the two variables (La'ia & Harefa, 2021). The objects in this study are students of Makassar Islamic University, active users of the Tokopedia e-commerce platform who have made transactions more than once and have heard or felt the online fraud prevention efforts made by Tokopedia.

The sample in this study was taken using the Quota sampling technique, namely selecting samples intentionally based on certain criteria. These criteria are users who are registered and actively using Tokopedia. The number of samples taken in this study were 101 respondents, which are expected to represent the population of Tokopedia users who are relevant to the research topic. The data in this study were collected using a survey technique with a questionnaire as the main data collection instrument. The questionnaire was designed to measure the two main variables in this study: (1) Variable X Efforts to Combat Online Fraud by Tokopedia: measured by several indicators which include transaction security policies, user education about fraud, use of verification systems, and handling complaints related to fraud. (2) Variable Y Platform Usage Decision: measured based on factors such as frequency of use of Tokopedia, convenience in transactions, and user trust in the platform.

The data collected will be analyzed using the Pearson correlation analysis technique to determine the relationship between two variables. Pearson correlation was chosen because the data collected is in the form of an ordinal scale that can be processed by this method (Nuraeni et al., 2025). The analysis steps taken are as follows: (1) validity test is a testing step carried out on the content of an instrument, with the aim of measuring the accuracy of the instrument used in a study. (A. Sugiyono, 2006). To test the validity of the item, the Pearson correlation formula was used.

The r value is then consulted with r table (critical). If rcount from the formula above is greater than rtable then the item is valid, and vice versa. (2) Reliability test is used to show the consistency or stability of an instrument in measuring the same concept at different times and conditions (P. D. Sugiyono, 2010). Reliability test is used to show the consistency or stability of an instrument in measuring the same concept at different times and conditions (P. D. Sugiyono, 2010). In testing reliability, the internal consistency test is used using the Cronbach Alpha formula.

The criteria for a research instrument is said to be reliable using this technique, if the reliability coefficient (r11)> 0.6. (3) Simple Linear Regression Analysis can be used to determine whether there is a positive or negative relationship between the independent variable and the dependent variable. In regression analysis there is one dependent variable commonly written with the symbol Y and one or more independent variables commonly written with the symbol X. The relationship between the two variables has a linear nature according to its name (Almumtazah et al., 2021). (4) The Coefficient of Determination (R^2) is used to find out how much variation in variable Y (platform usage decisions) can be explained by variable X (online fraud countermeasures). (5) The research hypothesis regarding the partial relationship between the independent variable and the dependent variable is tested with the t (partial) test. The hypothesis for each variable to be tested using this t-statistic involves calculating the $t hitung$ value.

RESULTS AND DISCUSSION

According to the data in this study involving 101 respondents from a sample of Tokopedia E-Commerce Users in an Effort to Counter Online Fraud. 60.4% of the respondents were female, while 39.6% were male. This data illustrates that the majority of respondents in this survey are female, although there is also male representation. The Cumulative Percent shows that the total percentage for both categories reached 100%, indicating that all respondents were covered in these two categories. Thus it can be concluded that Tokopedia E-Commerce user respondents are more female than male.

Based on the respondents' responses to the 6 questionnaire items of Variable X that have been submitted, the number of "Yes" on each item shows the extent to which respondents assess Tokopedia's efforts in handling online fraud. The more who answer "Yes" to an item, the greater the recognition of the effort. Calculating the total percentage or number of items answered "Yes" by respondents. This value will represent how well Tokopedia is doing in tackling fraud.

Based on respondents' responses to the 6 questionnaire items of Variable Y that have been submitted, the number of "Yes" on each item reflects the extent to which respondents' decisions and attitudes in using Tokopedia are influenced by the platform's efforts to tackle online fraud. So, the percentage of respondents who answered "Yes" to each item provides an overview of the level of user decisions and preferences in choosing Tokopedia, based on the fraud protection factor.

The results of the instrument test involving 101 respondents show each variable validity, to determine whether an instrument is valid or not, it is assessed by comparing r count with r table, as follows:

Inquiry	Variable X	Variable Y	r table N = 101	Sig	Description
Item 1	0,740	0,594	0,195	0,000	VALID
Item 2	0,721	0,721	0,195	0,000	VALID
Item 3	0,745	0,567	0,195	0,000	VALID
Item 4	0,516	0,782	0,195	0,000	VALID
Item 5	0,683	0,725	0,195	0,000	VALID
Item 6	0,668	0,798	0,195	0,000	VALID

Table 1: Validity Test

From table 1 above, it can be concluded that each correlation variable between indicators is declared valid. With a significant level of 5% (a = 0.05) and n = 101 respondents, r table = 0.195 is obtained, so r count of all research variables> 0.195. Then the data is declared valid when the calculated r value is greater than the table value. The conclusion is that each research variable related to online fraud prevention efforts (variable X) is all declared valid. Researchers use this theory to measure categories (Guilford, 1956).

Table 1 shows that the correlation between each indicator and each variable shows valid results. With a significant level.

No.	Variable	Cronbach Alpha	statement	Results
1.	Upaya penanggulangan penipuan online	0,770	6	Reliabel
2.	Keputusan penggunaan platform	0,789	6	Reliabel

Table 2 : Reliability Test

Based on table 2, the reliability test statistics obtained a Cronbach's Alpha value of 0.770. Because the Cronbach's Alpha value is greater than 0.6, it can be said that this questionnaire is reliable, which means that it is suitable and can be used as a measuring tool for efforts to overcome online fraud committed by Tokopedia.

From the reliability test data in table 3.2, it can be concluded that the Cronbach's Alpha value for the 6th item or all items of variable Y is 0.789. To increase the Cronbach's Alpha value, the researcher used the "Cronbach's Alpha if item delete" technique to evaluate whether there were items that if deleted could increase the Cronbach's Alpha value. the researcher found that Cronbach's Alpha if item delete on item 1 was very high at 0.788 compared to other items. By deleting item 1, the Cronbach's Alpha value can be increased

Simple linear regression analysis is used to test the effect of one independent variable on the dependent variable. To find out how big the correlation is between variable X Online fraud countermeasures and variable Y Decision to use the platform, the results of data processing using the SPSS version 25 program show the following results:

aspect	Value
Model Summary	
R	0.588
R Square	0.345
Coefficients	
(Constant) B	1.216
(Constant) Sig.	0.004
Nilai Koefisien B untuk Total X	0.636
Std. Error X	0.088
Beta	0.588
t	7.225
Sig. (p-value) X	< 0.001

Table 3 : Simple linear regression analysis

From the table data above, researchers can conduct a simple linear regression analysis to assess the correlation between Online Fraud Countermeasures Efforts carried out by the Tokopedia E-Commerce platform have an influence on Platform Usage Decisions, the following explanation:

In table 3 there is a constant value (a) of 1.216, while the regression coefficient value (b) is 0.636. Which can be formulated as follows:

$$Y = a + bX$$
$$Y = 1{,}216 + 0{,}636X$$

Constant (B = 1.216): This constant or intercept value indicates the predicted value of platform usage decisions when online fraud countermeasures are zero. This means that even if online fraud countermeasures do not exist, the decision to use the platform still exists with a value of 1,216 (in the units of measurement used).

Online Fraud Countermeasures (B = 0.636, Beta = 0.588): The coefficient for this predictor variable indicates that each one-unit increase in online fraud countermeasures will increase the platform usage decision by 0.636 units. The standardized Beta value of 0.588 indicates that this relationship is quite strong, with a considerable influence of Online Fraud Countermeasures on the decision to use the platform. The (+) sign indicates that if variable X online fraud countermeasures efforts increase, then variable Y platform usage decisions will also continue to increase.

The Coefficient of Determination (R2) is used to find out how much variation in variable Y (platform usage decisions) can be explained by variable X (online fraud countermeasures) expressed in percentage form (%).

From table 3 of the simple linear regression analysis, it can be concluded that the coefficient of determination (R2) value is $R^2 = 0.345$. This means that about 34.5% of the variation in platform usage decisions (Y) can be explained by online fraud countermeasures (X). The remaining 65.5% variation may be influenced by other factors not examined in this model.

T test (Partial) the results of this calculation compare t table using a significant level of 0.05 (5%). The criteria used are as follows: (1) H0 is accepted if the t value < t table or sig value > a. (2) H0 is rejected if the t value> t table or sig value < a

The hypotheses proposed in this study are: (1) Main Hypothesis (H_1): There is a significant positive correlation between Tokopedia's online fraud prevention efforts and users' decision to use the Tokopedia platform. (2) Null Hypothesis (H_0): There is no significant correlation between Tokopedia's online fraud prevention efforts and users' decisions to use the Tokopedia platform.

In the T Test (Partial) analysis, the t value for variable X is t = 7.225, Sig. < 0.001. The very large t value and very small p value (smaller than 0.001) indicate that the coefficient for Online Fraud Countermeasures is highly significant. Therefore, the alternative hypothesis (Ha) is accepted, while the null hypothesis (H0) is rejected. This corroborates the finding that online fraud countermeasures have a significant effect on user decisions.

CONCLUSION

Based on the results and discussion, it can be concluded that the online fraud prevention efforts carried out by Tokopedia contribute significantly to the decision to use the platform by its users. Therefore, the alternative hypothesis (Ha) is accepted, while the null hypothesis (H0) is rejected. In Hypothesis testing, it can be concluded that the coefficient of determination (R2) value is $R^2 = 0.345$. This means that about 34.5% of the variation in platform usage decision (Y) can be explained by online fraud countermeasures (X). The remaining 65.5% variation may be influenced by other factors not examined in this model. The positive correlation between online fraud countermeasures and the decision to use the platform is particularly evident in the group of Tokopedia users who are female and 21-25 years old on average.

This study aims to analyze the correlation between the online fraud countermeasures carried out by the Tokopedia e-commerce platform and the user's decision to choose and use the platform. Based on the research findings, it can be concluded that Tokopedia's fraud prevention efforts have a positive effect on the decision to use the platform. Users are more likely to choose to continue using Tokopedia if they feel safe and protected from potential fraud that can occur during transactions. This shows that the policies and actions taken by Tokopedia in handling online fraud affect users' perception of safety which in turn contributes to their decision to keep using the platform.

For future research, it is recommended to conduct a more comprehensive analysis involving various e-commerce platforms to compare fraud prevention efforts and their impact on platform usage decisions. Further research can also include other factors that influence user decisions, such as product quality, user experience, and perceptions of customer service, to get a more comprehensive picture of the factors that influence decisions to use e-commerce platforms.

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