

**THE INFLUENCE OF STUDENST PERCEPTION OF DATA SECURITY AND PRIVACY ON TRANSACTION TRUST IN THE TOKOPEDIA APPLICATION****Ririn Wiranti<sup>1\*</sup>, Angraini<sup>1</sup>, Mona Fronita<sup>1</sup>, Siti Monalisa<sup>1</sup>, Medyantiwi Rahmawita Munzir<sup>1</sup>**<sup>1</sup>Information Systems, Islamic University of Sultan Syarif Kasim Riau*email:* \*ririnwiranti13@gmail.com

**Abstract:** The current development of technology has successfully met various societal needs, one of which is the buying and selling activities. This development has led people to engage in online transactions, where buyers do not necessarily have to meet sellers in person. Tokopedia is one of the most popular e-commerce platforms used in Indonesia. Security issues arose when in 2020 Tokopedia experienced a breach, with data from around 91 million accounts being compromised by hackers. Consequently, Tokopedia needed to establish a Data Protection and Privacy Office (DPPO) to protect and safeguard user data privacy. This research addresses how perceptions of security and privacy can influence users' trust in transacting on Tokopedia. Using multiple linear regression analysis, the study evaluates the relationship between perceptions of data security and privacy with trust in transacting on Tokopedia. Based on the calculations of the multiple linear regression model using previously collected respondent data, it was found that perceptions of data security do not directly affect trust in transactions. However, perceptions of privacy are considered to have a significant influence and can increase trust in transactions among students in Pekanbaru.

**Keywords:** data security; e-commerce; tokopedia; transaction trust; user perceptions

**Abstrak:** Perkembangan teknologi saat ini telah sukses mencapai berbagai kebutuhan masyarakat salah satunya kegiatan jual beli, perkembangan ini membawa manusia untuk dapat melakukan jual beli secara online dimana tidak mengharuskan pembeli bertemu penjual secara langsung. Tokopedia menjadi salah satu platform e-commerce yang sangat populer digunakan di Indonesia. Masalah keamanan terjadi dimana pada tahun 2020 tokopedia mengalami peretasan dengan sekitar 91 juta akun berhasil diperoleh datanya oleh peretas, sehingga Tokopedia perlu membentuk data protection and privacy office (DPPO) guna melindungi dan menjaga privasi data pengguna Tokopedia. terkait hal tersebut penelitian ini mengangkat bagaimana persepsi keamanan dan privasi dapat mempengaruhi kepercayaan pengguna dalam bertransaksi di tokopedia. Dengan menggunakan metode regresi linear berganda, evaluasi dilakukan untuk menjelaskan hubungan antara persepsi keamanan data dan privasi terhadap kepercayaan bertransaksi di tokopedia. Berdasarkan perhitungan model regresi linear berganda menggunakan data responden yang telah dilakukan sebelumnya didapat persepsi keamanan data terhadap kepercayaan bertransaksi tidak berpengaruh secara langsung. Namun pada persepsi privasi terhadap kepercayaan bertransaksi dinilai sangat berpengaruh dan dapat meningkatkan kepercayaan bertransaksi di kalangan mahasiswa di Pekanbaru.

**Kata kunci:** e-commerce; keamanan data; kepercayaan transaksi; persepsi pengguna; tokopedia

## INTRODUCTION

The current development of technology is very rapid. Therefore, many people use it for business purposes, one of which is buying and selling activities. These buying and selling activities are conducted online and do not require buyers to meet sellers directly [1]. There are many e-commerce platforms that are rapidly growing online markets and have changed business patterns in recent years.

Tokopedia is one of the popular e-commerce platforms in Indonesia[2]. Since its establishment, This e-commerce itself implements the C2C (Customer to Customer) Marketplace business model, which relies heavily on third parties as recipients and distributors of funds. As e-commerce develops in Indonesia, businesses compete to attract consumers by focusing on customer satisfaction, including attention to customer satisfaction based on data security [3]. Tokopedia experienced a hacking incident on March 20, 2020, where approximately 91 million accounts on the platform had their data compromised by hackers[1], [4]. The perpetrators sold the data on the dark web, including user IDs, email addresses, full names, dates of birth, genders, phone numbers, and encrypted passwords. All this information was sold for around US\$5,000 or approximately Rp74 million. Furthermore, data from 14,999,896 Tokopedia accounts was still downloadable [2], [3], [5].

As a response to this incident, Tokopedia formed a special team called the Data Protection And Privacy Office (DPPO) aimed at protecting and safeguarding user data privacy[6], [7]. DPPO ensures that the mechanisms

related to personal data applicable in Tokopedia comply with existing regulations and government rules (Kompas.com). Additionally, Tokopedia has implemented further security measures such as the Tokopedia PIN feature, Google Authenticator, and Login Activity. These features are designed to prevent unauthorized activities on Tokopedia accounts, thus reducing the risk of theft or hacking [1], [8].

The indications to be discussed in this writing concern the influence of data security and privacy perceptions on transactions within the Tokopedia application. The success of a buying and selling transaction can occur due to the mutual trust between the seller and the buyer, one aspect of which involves providing assurance that the security of consumers' private data will be safeguarded[9], [3], [10], [11], [12].

Security in online transactions is a key factor that consumers are concerned about. Consumer perception of transaction security typically revolves around the confidentiality and non-disclosure of personal data they share, ensuring that it is kept safe, unseen, and not misused by irresponsible parties[1], [2], [5], [13], [14].

Previous research conducted by Adhi Kurniawan C, et al. (2021) in their study titled "The Influence of E-Service Quality and Security on the Decision to Use Tokopedia Marketplace Services" found that the e-service quality variable has a positive and significant impact on the decision to use Tokopedia's services [5]. This finding is also supported by research conducted by Prawira D, et al. (2023) in their study titled "Effect of E-Service Quality, Brand Image, and E-Security Seals on TOKOPEDIA E-Customer Satisfaction" [13].

However, another study titled "The Influence of Consumer Trust, Ease of Use, and Transaction Security on Online Purchase Decisions" conducted by Hanum H and Wiwoho G (2023) found that the transaction security variable partially does not significantly influence online purchase decisions on Shopee [14].

Meanwhile, consumer trust, ease of use, and transaction security variables have a simultaneous influence on online purchase decisions on Shopee. Another study conducted by Pebiyanti et al. (2023) titled "The Influence of Information Quality, Security Perception, and Privacy Perception on User Trust in Online Shopping" suggests that to develop long-term relationships with service providers, satisfaction alone may not be sufficient. Additional factors such as trust are necessary accelerators, especially in the development of online commercial partnerships [1].

Referring to the explanation above, the current perception of security and privacy among online consumers is still negative. Therefore, it is important to maintain and uphold the quality of services to instill trust, especially in online businesses. Understanding the correlation between these two aspects can help in assessing online services at present. This research study will focus more on understanding the influence of students' perceptions of security and privacy on Tokopedia users [10], [15].

**METHOD**

The research methodology is a series of steps that will be undertaken during the research process.

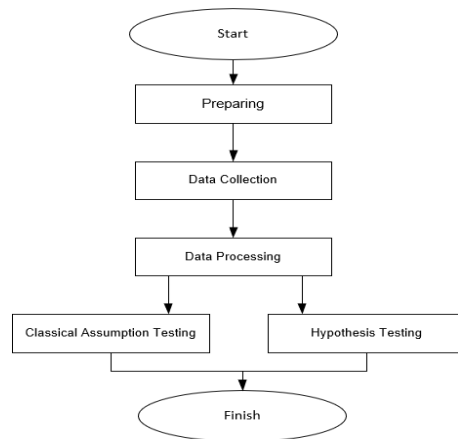


Figure 1. Research Method

Preparing a research, steps are needed to produce a structured report. Observing one stage of data collection involves directly observing the research subject and seeking information about subject, which in this case is Tokopedia. At this stage, formulating the problem to be studied, determining problem limitations, and research problem objectives are conducted [1], [2], [16].

Data collection is carried out with the aim of further studying the researched issue through; Observation, Literature Review based on table 1, Determination of Respondents, and Questionnaire Distribution.

Data processing is conducted using multiple linear regression classical assumption testing and hypothesis testing. The stages of data processing based on classical assumption testing in this research refers to value of normality test, multicollinearity test and heteroskedasticity test [2], [17]. Hypothesis testing in this research refers to the values of F-Test, Determination Coefficients, and T-Test[18][19] [20].

Table 1. Questionnaire Items

Variabels	Indicators	Item
Perception of Security	The availability of transmission mechanisms to ensure user information is secure.	S1
	The availability of technical capacity to ensure that consumer data is secure.	S2
	The availability of technical capacity to ensure consumer data is secure.	S3
	Security in conducting electronic/e-payment transactions.	S4
Perception of Privacy	Legal guarantees for consumer data protection.	P1
	The collection of personal consumer data necessary for e-commerce activities.	P2
	Consent from consumers regarding the dissemination of information.	P3
	The comfort provided to consumers when providing information.	P4
	Consumer privacy is the foremost concern.	P5
Users Trust	Transactions conducted on Tokopedia can be relied upon.	T1
	The security measures for transactions are highly adequate.	T2
	The transactions conducted are safe and well-protected.	T3
	There is privacy protection in every transaction of personal items.	T4
	The transactions are conducted according to the consumers' desires.	T5

**RESULT AND DISCUSSION**

In this study, respondents are selected based on the age range of 19-25 years, where the respondents are students in pekanbaru city. The sample size for this research is determined using a technique where a total of 300 individuals will be sampled.

**Classical Assumption Testing**

This test assesses whether the regression model comprising independent and dependent variables exhibits a normal distribution. A p-value

exceeding 0.05 indicates that the data can be deemed normally distributed.

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test	
Asymp. Sig. (2-tailed)	,200 <sup>c,d</sup>
a. Test distribution is Normal.	
b. Calculated from data.	
c. Lilliefors Significance Correction.	
d. This is a lower bound of the true significance.	

The p-value (sig) exceeds 0.05, suggesting that this variable follows a

normal distribution, as indicated by a value of 0.200.

Table 3. Multicollinearity Test

Model	Tolerance	VIF
(Constant)		
Security	,829	1,206
Privacy	,829	1,206

In this scenario, the tolerance value of 0.829 and the VIF value of 1.206 for the security and privacy variables indicate that multicollinearity is not a significant concern.

Table 4. Heteroskedasticity Test

Model	t	Sig.
(Constant)	1,819	,070
Security	,750	,454
Privacy	,131	,896

According to the data presented in Table 4, it is evident that the significance values for the security and privacy variables are greater than 0.05, specifically 0.454 and 0.896, respectively. This suggests that there is no indication of heteroskedasticity in the regression model.

### Hypothesis Testing

Hypothesis testing involves several tests, including the t-test, F-test, and coefficient of determination test.

Table 5. t-test

Model	t-test	
	t	Sig
(Constant)	11,096	,000
Security	,600	,549
Privacy	2,955	,003

The significance value (Sig.) of 0.549. Since this value is  $> 0.05$ , we can conclude that H1 is rejected, meaning

there is no influence of security on trust. Furthermore, considering the calculated t-value, which is 0.6, and comparing it to the critical t-value of 1.968, we find that  $0.6 < 1.968$ . Therefore, we can conclude that security has no significant influence on trust.

Following, the second partial t-test is executed to examine whether privacy impacts the trust of Tokopedia users. With a significance value of 0.003, where the significance value (Sig.) of  $0.003 < 0.05$ , the second hypothesis is validated, suggesting a significant influence of privacy on trust. Additionally, considering the computed t-value for privacy, which is 2.955, and comparing it to the critical t-value of 1.968, we observe that  $2.955 > 1.968$ . Hence, the second hypothesis is upheld, indicating the influence of privacy on the trust of Tokopedia users.

Table 6. F-Test

Model	F	Sig.
Regression	6,368	,002 <sup>b</sup>

The significance value (sig.) is below 0.05, it suggests that the hypothesis is accepted, indicating that Privacy and Security jointly influence the trust of Tokopedia users. In this study, with a significance value of 0.002 and an F-value of 6.638 surpassing the critical F-value of 3.026, both hypotheses are accepted.

Table 7. Coefficient Determination

Model	R	R Square
C. Determination	,916 <sup>a</sup>	,820

The R-square value of 0.820 signifies a notably robust coefficient of determination concerning the dependent variable. Indicating that approximately

82% of the variability observed in the dependent variable can be elucidated by the independent variables included in the analysis.

## CONCLUSION

The test indicates a strong positive correlation between privacy and users' trust, with a significance value of 0.003. On the other hand, perceptions of data security don't seem to have a significant impact on transaction trust, as shown by a significance value of 0.549, which is above the 0.05 threshold. When considering both privacy and data security together, they collectively influence transaction trust significantly. The F-test confirms this with a value of 6.638, surpassing the critical value. The coefficient of determination (R-Square) shows that 82% of the variation in transaction trust can be explained by privacy and data security perceptions. This indicates that the model effectively explains the relationship between these variables concerning user trust in platforms like Tokopedia. Therefore, prioritizing user privacy is crucial for building trust in e-commerce platforms, although data security, while important, doesn't directly impact transaction trust.

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