



## User loyalty with e-security base on e-marketplace platform in indonesia

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### ABSTRACT

Indonesian people are increasingly fond of shopping online, this is due to the increasing development of technology in the current era, which is basically from a smartphone application based on an e-marketplace platform, goods can arrive at the buyer's doorstep. However, it can also be realized that there are weaknesses shown by the E-marketplace platform, especially in the field of user security. Where cybercrime cases such as virtual fraud often occur. Seeing the high enthusiasm of the Indonesian people to use the E-marketplace platform, this is an important job for the E-marketplace platform to continue to pay attention to user loyalty. The purpose of this study is to analyze the effect of e-security on user loyalty on the big 3 E-marketplace platforms in Indonesia. This type of research is a type of quantitative research. The sample in this study amounted to 300 respondents. The statistical test used is linear regression using SmartPLS. The results of this study refer to positive and significant results between e-security and satisfaction and trust. while the relationship between satisfaction and trust on user loyalty also shows positive and significant results.

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## INTRODUCTION

In the current era, Indonesian society is increasingly fond of online shopping, gradually turning it into an unavoidable cultural practice (Junianingrum et al., 2023). This trend is driven by the rapid technological advancements of our time, where goods can be delivered right to the buyer's doorstep through smartphone applications based on e-marketplace platforms (Loudon & Loudon, 2012). This convenience has led to a continuous increase in the number of e-marketplace platform users. According to dataindonesia.id, the number of e-marketplace platform users in Indonesia reached 158.65 million, reflecting a 12.79% increase from the previous year, which had 178.94 million users (dataindonesia.id, 2023). This trend is expected to continue rising, reaching 244.67 million users by 2027 (dataindonesia.id, 2023). This indicates that Indonesian users are highly enthusiastic about e-marketplace platforms.

Despite the widespread enthusiasm for using e-marketplace platforms, it is also apparent that there are weaknesses, particularly in the area of user security (Farisal Abid & Purbawati, 2020). Cybercrime incidents, such as virtual fraud, frequently occur. According to [cnbcindonesia.com](http://cnbcindonesia.com), as of February 2023, the National Consumer Protection Agency (BKPN) received 1,136 complaints from e-marketplace platform users ([cnbcindonesia.com](http://cnbcindonesia.com), 2023). This raises concerns about the security of e-marketplace platforms, which remains questionable (Farisal Abid & Purbawati, 2020). Given the high enthusiasm of Indonesians for using e-marketplace platforms, it is crucial for these platforms to pay close attention to user loyalty.

User loyalty itself is a commitment to continue to reuse a product or service in the future, regardless of the influence of situations and marketing efforts that can encourage customers to switch to other products (Handayanti et al., 2023). User loyalty is very important in marketing because it shows the willingness of users to invest or make personal sacrifices to strengthen their relationship with the platform (Kartono & Halilah, 2019; Rama & Barusman, 2019). Loyal users are willing to use a product or service more often, spend money to try new products or services, and attract new customers to the e-marketplace platform. Factors that influence user loyalty are satisfaction and trust (Berliana, 2022).

Satisfaction can be interpreted as a comparison between user expectations before making a purchase with the results they receive after making a purchase (Abdullah et al., 2023; Anderson & Srinivasan, 2003). Electronic satisfaction can be understood as user satisfaction related to previous shopping experiences on an e-marketplace platform, which is oriented to a particular retailer (Abdullah et al., 2023; Farisal Abid & Purbawati, 2020). Satisfaction can be summarized as the user's attitude when evaluating an e-marketplace platform (Abdullah et al., 2023; Apriliyanto, 2022). While trust refers to consumer beliefs about the characteristics of service providers and the behavior of service providers in the future (Berliana, 2022). Trust can also be understood as the level of trust that one party has in another party that the party will behave as expected (Cardoso et al., 2022). Consumer trust is an assessment of sales and purchases chosen based on alternatives that at least meet or even exceed consumer expectations (Nangin et al., 2020).

Given that e-marketplace platform users need certainty about the security of their data, of course e-security will make users feel satisfied and confident in the e-marketplace platform. E-security itself is a subjective belief held by users that the actions of an e-marketplace platform are safe and comfortable to use, thus consistently increasing their trust expectations (Farisal Abid & Purbawati, 2020). Perceived e-security is also interpreted as a threat that causes conditions or events that have the potential to cause economic difficulties through damage to data sources or networks, data collection and modification, denial of service, or fraud and abuse of authority granted to the e-marketplace platform (Armesh et al., 2010; Carlos Roca et al., 2009).

Previous studies often show that user loyalty is influenced by satisfaction and trust (Berliana, 2022; Mariana & Aidil Fadli, 2022). The results of research conducted by Mariana & Aidil Fadli (2022) show that user loyalty can be influenced by satisfaction, while in the study Berliana (2022); Mariana & Aidil Fadli (2022) user loyalty also affects trust. Another study conducted by Gosal (2021); Farisal Abid & Purbawati (2020); Prawira et al. (2023); Sulistiyawati (2022) shows that the basis of satisfaction is security, and likewise with the research conducted by Alfiani et al. (2021); Nangin et al. (2020) has the basis of trust also comes from security. Therefore, this study will examine the relationship between user loyalty, satisfaction, trust, and electronic security.

In response to the issues mentioned above, this study aims to analyze the effect of e-security on user loyalty across the top three e-marketplace platforms in Indonesia. Specifically, this study seeks to provide insights to e-marketplace platforms in evaluating loyalty based on e-security, as perceived by consumers. The results of this study are also expected to offer valuable insights to e-marketplace platforms to enhance user loyalty. According to [databoks.katadata.co.id](http://databoks.katadata.co.id), the e-marketplace sector is dominated by Shopee, followed by Tokopedia in second place, and

Lazada in third place (Adi Ahdiat, 2023). Consequently, this study focuses on user perceptions of these three e-marketplace platforms.

## RESEARCH METHOD

This study has criteria to test the relationship between variables with a quantitative approach. There are four variables in this study, namely E-security, Satisfaction, Trust and User Loyalty. The data used in this study is primary data consisting of 300 respondents, this is in line with the reference from Sekaran (2016) which provides sample criteria above 30 and less than 500 respondents). The respondents refer to the following criteria: (a) At least 17 years old, (b) Are Indonesian citizens as indicated by their KTP, (c) Like to shop online, (d) Have 3 e-marketplace applications (Shoope, Tokopedia and Lazada) on their cellphones. In this study, we collected respondents by distributing them to colleagues, friends and other people systematically as determined by predetermined criteria. The statistical test tool in this study is Smart PLS, where this tool has characteristics as a tool that is suitable for research in the form of multivariate analysis with explanatory modeling (Garson, 2016).

## RESULTS AND DISCUSSIONS

### Outer Model Test Results

This test consists of validity and reliability tests. The validity test itself consists of convergent validity which can be seen from the loading factor value above 0.5 according to the criteria explained by Ghazali & Latan (2015). While for discriminant validity can be seen from the AVE value which is more than 0.5 in each variable (Garson, 2016). The reliability test can be measured through the results of Composite reliability and Cronbach's Alpha values. A latent variable can be said to have good reliability if the Composite reliability value is above 0.70 and the Cronbach's Alpha value has a value above 0.60 (Garson, 2016). The following are the results of the Outer model test of this study:

**Table 1.** Outer Model Test Results

Variable	Indicator	Outer Loading	AVE	Composite Reliability	Cronbach's Alpha
E-Security	ESE1	0,895	0,662	0,886	0,824
	ESE2	0,689			
	ESE3	0,760			
	ESE4	0,890			
Costumer Satisfaction	CSA1	0,744	0,652	0,918	0,893
	CSA2	0,824			
	CSA3	0,852			
	CSA4	0,744			
	CSA5	0,828			
	CSA6	0,848			
Costumer Trust	CTR1	0,936	0,701	0,902	0,850
	CTR2	0,736			
	CTR3	0,935			
	CTR4	0,715			
User Loyalty	ULO1	0,848	0,714	0,909	0,867
	ULO2	0,846			
	ULO3	0,858			
	ULO4	0,838			

The overall validity and reliability tests show conformity with the categories and provisions of each test. So that all variables can be said to be valid and reliable.

**Inner Model Test Results**

The inner model examines the coefficient determination test in the form of R-Square values (Garson, 2016). The following are the results of the R-Square values from this study:

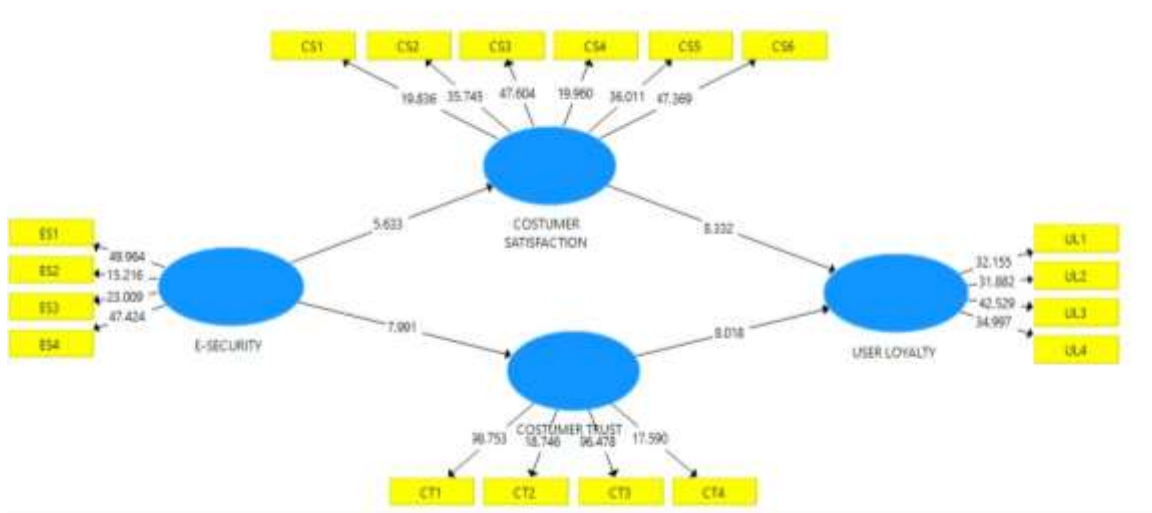
**Table 2. Inner Model Test Results**

Variable	R-Square
Costumer Satisfaction	0,119
Costumer Trust	0,215
User Loyalty	0,521

Based on the results above, it can be explained that customer satisfaction has an R-square value of 0.119, which means that customer satisfaction is influenced by e-security in this model by 11.9% and the rest is influenced by other variables not in this study. While for customer trust, it has an R-square value of 0.215, which means that customer trust is influenced by e-security in this model by 21.5% and the rest is influenced by other variables not in this study. As for user loyalty, it has an R-square value of 0.521, which means that user loyalty is influenced by customer satisfaction and customer trust in this model by 52.1% and the rest is influenced by other variables not in this study.

**Hypothesis Test Results**

This research hypothesis testing was carried out in a multivariate manner with the criteria that the original sample value had to be positive, a sig value. below 0.05 and the statistical t value is above the t table (1.960), then the hypothesis is declared accepted (Garson, 2016). However, if the value of sig. above 0.05 and the t statistic value is below the t table (1.960), then the hypothesis is rejected (Garson, 2016). The following are the results of testing the hypothesis of this research:



**Figure 1. Hypothesis Test Results**

**Table 3. Hypothesis Test Results**

Hypothesis	Original Sample	Mean	STD. Dev	T statistic	Sig
E-Security → Costumer Satisfaction	0,345	0,343	0,061	5,633	0,000

Hypothesis	Original Sample	Mean	STD. Dev	T statistic	Sig
E-Security→Costumer Trust	0,464	0,463	0,058	7,991	0,000
Costumer Satisfaction→User Loyalty	0,415	0,417	0,050	8,332	0,000
Costumer Trust→User Loyalty	0,425	0,419	0,053	8,018	0,000

The results of the hypothesis test above can be explained as follows: (a) Hypothesis 1, the relationship between e-security and customer satisfaction shows a positive original sample criterion from the results of 0.345. While for the t statistic shows a value of 5.633 which means it is greater than the t table which is 1.960 and for the sig. value shows the number 0.000 which means it is less than the standard of 0.05. Thus hypothesis 1 is appropriate. (b) Hypothesis 2, the relationship between e-security and customer trust shows a positive original sample criterion from the results of 0.464. While for the t statistic shows a value of 7.991 which means it is greater than the t table which is 1.960 and for the sig. value shows the number 0.000 which means it is less than the standard of 0.05. Thus hypothesis 2 is appropriate. (c) Hypothesis 3, the relationship between customer satisfaction and user loyalty shows a positive original sample criterion from the results of 0.415. Meanwhile, for t statistics shows a value of 8.332 which means it is greater than the t table which is 1.960 and for the sig. value shows the number 0.000 which means it is less than the standard of 0.05. Thus, hypothesis 3 is appropriate. (d) Hypothesis 4, the relationship between customer trust and user loyalty shows a positive original sample criterion from the results of 0.425. Meanwhile, for t statistics shows a value of 8.018 which means it is greater than the t table which is 1.960 and for the sig. value shows the number 0.000 which means it is less than the standard of 0.05. Thus, hypothesis 4 is appropriate.

## Discussion

### a. e-security on customer satisfaction

e-security has a significant unidirectional influence on customer satisfaction, meaning that the higher the e-security shown by the e-marketplace platform (shopee, tokopedia and lazada), the higher the satisfaction shown by the users of the platform. E-security itself is a form of responsibility that must be carried out by the e-marketplace platform to maintain the confidentiality of data owned by users in transactions. This is further interpreted, if the security of the user's data is fulfilled, the user will be satisfied. The results of this study are in accordance with research conducted by Gosal (2021); Farisal Abid & Purbawati (2020); Prawira et al. (2023); Sulistiyawati (2022).

### b. e-security on customer trust

e-security has a significant unidirectional influence on customer trust, meaning that the higher the e-security shown by the e-marketplace platform (shopee, tokopedia and lazada), the higher the trust held by users. Considering E-Security as a subjective belief held by users that the actions of an E-marketplace platform are safe and comfortable to use, so that it consistently increases their trust expectations (Farisal Abid & Purbawati, 2020). This is further interpreted, if the security of the user's data is fulfilled, the user will have more confidence in the platform. The results of this study are in accordance with the research conducted by Alfiani et al. (2021); Nangin et al. (2020).

### c. Satisfaction on user loyalty

Satisfaction has a significant unidirectional influence on user loyalty, meaning that the higher the satisfaction a user has on the e-marketplace platform (Shopee, Tokopedia and Lazada), the higher the user loyalty. Users will feel loyal to a platform if they are given superior services that make them feel comfortable when shopping, which of course means they are satisfied with all

the services provided by the e-marketplace platform. The results of this research are in accordance with research conducted by Mariana & Aidil Fadli (2022).

#### d. Trust in user loyalty

Trust has a significant unidirectional influence on user loyalty, meaning that the higher the trust a user has on an e-marketplace platform (Shopee, Tokopedia and Lazada), the higher the user's loyalty to that platform. The user's attitude towards trust in the e-marketplace platform arises because they believe in a sense of security, which of course means that users will be loyal to using the e-marketplace platform. The results of this research are in accordance with research conducted by Berliana (2022); Mariana & Aidil Fadli (2022).

## CONCLUSION

The results of this study indicate that e-security has a direct positive and significant effect on satisfaction and trust, while the relationship between satisfaction and trust also has a direct positive and significant effect on user loyalty. By implication, it can be shown that if users feel secure about the data they register on the e-marketplace platform, they will trust the e-marketplace platform, and of course they will also be satisfied with the platform. Users who feel satisfied and trust will be willing to always be loyal to the e-marketplace platform. The limitations of this study occur in the e-security variable which is classified as a weak criterion in the satisfaction and trust study. The classification of e-marketplaces consists of Shopee, Tokopedia and Lazada, even though there are other platforms that are loved by the public, such as bibli, olx or even Alibaba. Actions that can be taken by e-marketplaces to improve their security are by improving IT infrastructure within the e-marketplace platform, limiting database access and conducting regular data audits. For further research, it can expand the study of e-marketplace platform users who are loyal to other products other than in this study, and it is better to discuss more other variables that are not in this study to influence satisfaction and trust, for example, service quality variables, product diversity and convenience, and it is hoped that there will be a development of a mediation model, for example, adding a brand love variable.

## References

- Abdullah, L. Z., Apriliyanto, N., & Junianingrum, S. (2023). Determinants of repurchase intention in the Indonesian e-commerce platforms. *Journal of Enterprise and Development (JED)*, 5, 2023.
- Adi Ahdiat. (2023, October 11). *Pengunjung Shopee Makin Banyak, Bagaimana E-Commerce Lain?* <https://Databoks.Katadata.Co.Id/Datapublish/2023/10/11/Pengunjung-Shopee-Makin-Banyak-Bagaimana-e-Commerce-Lain>.
- Alfiani, L., Lukitaningsih, A., & Maharani, B. D. (2021). Pengaruh Electronic Word of Mouth dan Security Terhadap Buying Decision Melalui Electronic Trust Sebagai Variabel Media. *Jurnal Ilmiah Manajemen Kesatuan*, 9(2), 203–210. <https://doi.org/10.37641/jimkes.v9i2.434>
- Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology & Marketing*, 20(2), 123–138. <https://doi.org/10.1002/mar.10063>
- Apriliyanto, N. (2022). Peran Customer Trust Dan Customer Satisfaction Terhadap Repurchase Intention. *Journal Economic Insights*, 1(2), 85–91. <https://jei.uniss.ac.id/index.php/v1n1/article/view/30>
- Armeh, H., Salarzahi, H., Yaghoobi, N. M., Heydari, A., & Nikbin, D. (2010). The Effects of Security and Privacy Information on Trust & Trustworthiness and Loyalty in Online Marketing in Malaysia. *International Journal of Marketing Studies*, 2(2). <https://doi.org/10.5539/ijms.v2n2p223>
- Berliana, C., & Negeri Surabaya, U. (2022). Effect Of E-Service Quality, E-Trust, And Commitment On E-Loyalty With E-Satisfaction As A Mediation Variable Pengaruh E-Service Quality, E-Trust, Dan Commitment Terhadap E-Loyalty Dengan E-Satisfaction Sebagai Variabel Mediasi. In *Management Studies and Entrepreneurship Journal* (Vol. 3, Issue 4). <http://journal.yrpiiku.com/index.php/msej>

- Brian Gosal Innocentius Bernarto, G. R. (n.d.). Pengaruh E-security, E-service Quality terhadap E-satisfaction dan Pengaruh E-satisfaction, E-security, dan E-service Quality terhadap E-repurchase Intention Secara Langsung pada Pengguna E-commerce Tokopedia. *Jurnal Administrasi Bisnis (JAB)*, 11(2), 2021.
- Cardoso, A., Gabriel, M., Figueiredo, J., Oliveira, I., Rêgo, R., Silva, R., Oliveira, M., & Meirinhos, G. (2022). Trust and Loyalty in Building the Brand Relationship with the Customer: Empirical Analysis in a Retail Chain in Northern Brazil. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 109. <https://doi.org/10.3390/joitmc8030109>
- Carlos Roca, J., José García, J., & José de la Vega, J. (2009). The importance of perceived trust, security and privacy in online trading systems. *Information Management & Computer Security*, 17(2), 96–113. <https://doi.org/10.1108/09685220910963983>
- cnbcindonesia.com. (2023, March 2). *Korban Penipuan E-commerce RI Makin Banyak, Cek Data Terbaru!* <https://www.cnbcindonesia.com/tech/20230302140853-37-418315/korban-penipuan-e-commerce-ri-makin-banyak-cek-data-terbaru>.
- dataindonesia.id. (2023, September 4). *Pengguna E-Commerce RI Diproyeksi Capai 196,47 Juta pada 2023.* <https://dataindonesia.id/ekonomi-digital/detail/pengguna-e-commerce-ri-diproyeksi-capai-19647-juta-pada-2023>.
- Farisal Abid, M. M., & Purbawati, D. (2020). Pengaruh E-Security dan E-Service Quality Terhadap E-Repurchase Intention Dengan E-Satisfaction Sebagai Variabel Intervening Pada Konsumen E-Commerce Lazada di Fisip Undip. *Jurnal Ilmu Administrasi Bisnis*, 9(1), 93–100. <https://doi.org/10.14710/jiab.2020.26227>
- Garson. (2016). *Partial Least Squares Regression & Structural Equational Models*. Statistical Publishing Associates.
- Ghozali, I., & Latan, H. (2015). *Partial least squares konsep, teknik dan aplikasi menggunakan program SmartPLS 3.0 untuk penelitian empiris*. Badan Penerbit Universitas Diponegoro.
- Handayanti1, D. N., Indarto2, M. R., Tinggi, S., Manajemen, I., & Yogyakarta, Y. (2023). Pengaruh E-Service Quality Terhadap E-Loyalty Dengan E-Satisfaction Sebagai Intervening Pada Pengguna E-Commerce Shopee. In *Muhammad Roni Indarto* (Vol. 4, Issue 1).
- Junianingrum, S., Apriliyanti, N., & Abdullah, L. Z. (2023). Repurchase Intention Based On E-Service Quality And Customer Trust At Three Top Brand E-Commerce Indonesia. *IQTISHADUNA: Jurnal Ilmiah Ekonomi Kita*, 12(2), 226–240. <https://doi.org/10.46367/iqtishaduna.v12i2.1513>
- kanneth C. Loudon, & Jane P. Loudon. (2012). *Management Information Systems-Managing The Digital Firm* (12th ed.). Pearson Prentice Hall .
- Kartono, R. A., & Halilah, I. (n.d.). *PENGARUH E-TRUST TERHADAP E-LOYALTY (STUDI PADA SELLER DI BUKALAPAK)*.
- Mariana, Y., & Aidil Fadli, J. (2022). Pengaruh E- Service Quality, E-Trust, E-Satisfaction Terhadap E-Loyalitas Nasabah Perbankan Indonesia. *Jurnal Multidisiplin Indonesia*, 1(1), 186–200. <https://doi.org/10.58344/jmi.v1i1.21>
- Nangin, M. A., Barus, I. R. G., & Wahyoedi, S. (2020). The Effects of Perceived Ease of Use, Security, and Promotion on Trust and Its Implications on Fintech Adoption. *Journal of Consumer Sciences*, 5(2), 124–138. <https://doi.org/10.29244/jcs.5.2.124-138>
- Prawira, D., Kurniawan, R., Indrajit, R. E., & Dazki, E. (2023). Effect of E-Service Quality, Brand Image and E-Security Seals on TOKOPEDIA E-Customer Satisfaction (Case Study on Tokopedia Customers). *Jurnal Informasi Dan Teknologi*, 153–164. <https://doi.org/10.37034/jidt.v5i1.276>
- Rama, A., & Barusman, P. (2019). The Effect of Security, Service Quality, Operations and Information Management, Reliability & Trustworthiness on E-Loyalty moderated by Customer Satisfaction on the Online Shopping Website. In *Int. J Sup. Chain. Mgt* (Vol. 8, Issue 6). <http://excelingtech.co.uk/>
- Sekaran, U. & bougie. (2016). *Research Method for Business* (7th ed). Wiley.
- Sulistiyawati, U. (2022). Pengaruh Privacy (Security) Settings, Application Design dan E-Trust Terhadap E-Relationship Satisfaction Dan E-Loyalty Pada Konsumen Grabfood Di Surabaya. *SKETSA BISNIS*, 9(2), 136–152. <https://doi.org/10.35891/jsb.v9i2.3211>