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Factors Influencing E-Loyalty in E-Commerce Platforms: A Case Study of Gen Z and Millennial Users on Tokopedia

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Abstract: This study aims to analyze the factors influencing e-loyalty on Tokopedia by focusing on Gen Z and Millennial users in Jabodetabek. The research investigates e-service quality and perceived value as independent variables, e-satisfaction as a mediating variable, and e-loyalty as the dependent variable. Data were collected through an online survey of 280 respondents who had used Tokopedia between 2021 and 2024. Partial Least Squares-Structural Equation Modeling (PLS-SEM) was applied for analysis. The findings reveal that e-service quality and perceived value significantly affect e-satisfaction; e-service quality directly influences e-loyalty; and e-satisfaction mediates the relationship between both independent variables and e-loyalty. The results highlight the importance of digital service quality and perceived value in building satisfaction and loyalty, particularly among younger generations who are prone to switching platforms. These insights provide strategic implications for Tokopedia to strengthen customer retention in a highly competitive e-commerce landscape.

Keywords: E-commerce, Tokopedia, Generation Z, Millennials, E-service quality, Perceived value, E-loyalty, ECT

INTRODUCTION

Indonesia is currently experiencing rapid digital transformation, particularly in the e-commerce sector. The E-Conomy SEA 2023 report shows that Indonesia recorded e-commerce revenue of USD 62 billion in 2023 and is projected to reach USD 82 billion in 2025, making it the largest market in Southeast Asia (Google et al., 2023). This growth is largely driven by the high adoption of digital technology, broader internet penetration, and changes in consumer behavior that increasingly rely on online platforms for shopping. Among the key consumer groups, Generation Z (Gen Z) and Millennials dominate digital consumption, accounting for more than 52% of Indonesia's population (BPS, 2025). These generations are highly familiar with digital platforms, active in social media, and sensitive to price and service experience. However, their loyalty toward a specific e-commerce platform tends to be unstable, as they are easily influenced by promotions, social trends, and competitors' offerings.

Tokopedia, one of Indonesia's leading e-commerce platforms, is facing intense competition from Shopee. According to Populix (2024), Shopee is the top choice for 76% of Gen Z and 60% of Millennials, while Tokopedia is only chosen by 15% and 26%, respectively. Similarly, the Indonesia Millennial Report 2024 indicates that 47% of Millennials prefer Shopee compared to 33% who prefer Tokopedia. This shift is reflected in Tokopedia's Top Brand Index, which dropped from 16.70 in 2021 to 10.40 in 2024. These findings highlight a decline in customer loyalty to Tokopedia, indicating that customers are more likely to switch platforms for short-term benefits such as discounts or cashback (Kompas, 2022). This phenomenon underscores the urgent need to understand what drives satisfaction and loyalty among Tokopedia's young users.

Previous studies have identified several key determinants of satisfaction and loyalty in e-commerce, notably e-service quality and perceived value. E-service quality refers to the efficiency, fulfillment, system availability, and privacy/security of online platforms (Parasuraman et al., 2005). Research has shown that service quality positively influences satisfaction (Sheu & Chang, 2022; Dewi et al., 2024) and can directly contribute to loyalty (Al-dweeri et al., 2019). On the other hand, perceived value is defined as the consumer's overall evaluation of a product or service based on the trade-off between perceived benefits and sacrifices (Zeithaml, 1988). Studies confirm that when consumers perceive greater value, they are more likely to feel satisfied and remain loyal (Misra et al., 2022; Evelina, 2022). Nevertheless, some inconsistencies remain. For instance, Gaotami et al. (2023) found that service quality does not always result in loyalty, while Wang and Lertbuasin (2022) reported that perceived value is not always a strong predictor of satisfaction. These mixed findings indicate a theoretical gap that needs to be addressed.

From a practical perspective, Tokopedia faces challenges in retaining Gen Z and Millennial customers despite offering user-friendly applications, multiple payment methods, and integration with GoTo services. In contrast, Shopee has successfully positioned itself as a platform that not only provides aggressive promotions but also offers strong perceived value and engaging user experiences. Therefore, there is a practical gap between what Tokopedia provides and what young consumers expect.

This study aims to analyze the factors influencing e-loyalty on Tokopedia by focusing on Gen Z and Millennial users in Jabodetabek. The research integrates four main constructs are e-service quality, perceived value, e-satisfaction, and e-loyalty into a single conceptual framework. The novelty of this study lies in its comprehensive approach, testing the direct and indirect effects of these constructs simultaneously. In particular, the role of e-satisfaction as a mediating variable is examined to better understand how service quality and perceived value translate into loyalty. The results are expected to contribute to the literature on digital consumer behavior and provide strategic insights for Tokopedia to design effective retention strategies.

Expectancy Confirmation Theory (ECT), proposed by Oliver in 1980, explains that consumer satisfaction is determined by the extent to which individual beliefs are confirmed or disconfirmed, as well as their perceptions of the performance of the related entity (Oliver, 1980). This relationship is mediated by the construct of confirmation, indicating that satisfaction arises when consumers' initial expectations toward a product or service are met. This study incorporates the variables of E-Service Quality, Perceived Value, E-Satisfaction, and E-Loyalty into the ECT framework, which is essential for comprehensively understanding consumer behavior in e-commerce. Previous studies have widely applied Expectancy Confirmation Theory in the context of e-commerce, highlighting its relevance (Beura et al., 2023). Several studies further demonstrate that ECT effectively predicts consumer satisfaction and repurchase intentions across various online shopping scenarios, including shopping applications (Wang et al., 2022).

Perceived value is considered an important antecedent of satisfaction because consumers tend to feel satisfied when the benefits gained are equal to or greater than the costs incurred. In the e-commerce context, competitive prices, attractive promotions, and reliable services contribute to higher satisfaction. Previous research supports this positive relationship (Misra et al., 2022; Evelina, 2022). Hence, the first hypothesis is proposed:

H1: Perceived Value has a positive effect on E-Satisfaction.

E-service quality represents the efficiency of processes, the accuracy of order fulfillment, the stability of the system, and the security of online transactions (Parasuraman et al., 2005). When these aspects are well maintained, consumers are more likely to be satisfied with their shopping experiences. Several studies confirm that e-service quality significantly increases satisfaction (Sheu & Chang, 2022; Dewi et al., 2024). Therefore, the second hypothesis is proposed:

H2: E-Service Quality has a positive effect on E-Satisfaction.

Beyond satisfaction, service quality can directly influence loyalty. Customers who perceive a platform as reliable, efficient, and trustworthy are more likely to remain loyal, even if competitors offer aggressive promotions. Previous studies demonstrate that high service quality encourages long-term loyalty (Al-dweeri et al., 2019; Alnaim et al., 2022). Thus, the third hypothesis is proposed:

H3: E-Service Quality has a positive effect on E-Loyalty.

Finally, e-satisfaction plays a crucial role in determining loyalty. Satisfied customers tend to engage in repeat purchases and recommend the platform to others. Prior research has consistently highlighted the strong influence of satisfaction on loyalty (Khan et al., 2019; Hidayah, 2025). In Tokopedia's case, ensuring high satisfaction levels is key to preventing switching behavior among Gen Z and Millennial users. Hence, the fourth hypothesis is proposed:

H4: E-Satisfaction has a positive effect on E-Loyalty.

METHODS

This study employed a quantitative research design with a survey approach to investigate the relationships between e-service quality, perceived value, e-satisfaction, and e-loyalty. The research was conducted between June and August 2025 in the Jabodetabek area, which represents Indonesia's most dynamic e-commerce market with the highest density of Gen Z and Millennial users.The population of this study consisted of Tokopedia users belonging to Generation Z (born 1997–2012) and Millennials (born 1981–1996) who reside in Jabodetabek. A purposive sampling technique was applied with the following criteria: respondents must have used Tokopedia for at least the past three years (since 2021) and belong to the Gen Z or Millennial cohorts. Based on these criteria, a total of 280 valid responses were collected through an online questionnaire distributed via social media platforms and online communities.

The research instrument was a structured questionnaire adapted from established measurement scales. E-service quality was measured using four dimensions from the E-S-QUAL model (Parasuraman et al., 2005), namely efficiency, fulfillment, system availability, and privacy/security. Perceived value items were adapted from Zeithaml (1988), e-satisfaction from Anderson and Srinivasan (2003), and e-loyalty from previous works by Al-dweeri et al. (2019). Each construct was measured using multiple indicators on a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). The data collection procedure involved the distribution of the questionnaire online, preceded by a screening question to

ensure that only qualified respondents participated. Prior to full deployment, the instrument was tested through a pilot survey of 30 respondents to ensure clarity and reliability.

The data analysis technique used was Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software. The analysis proceeded in two stages: (1) evaluation of the measurement model (outer model) to assess validity and reliability through factor loadings, Cronbach's alpha, composite reliability, and Average Variance Extracted (AVE) and (2) evaluation of the structural model (inner model) to test hypotheses by examining path coefficients, t-values, and p-values. Model fit was further examined using R^2 and predictive relevance (Q^2) values. This methodological approach was chosen because PLS-SEM is particularly suitable for predictive and exploratory research involving multiple constructs and mediating variables. It allows robust testing of direct and indirect effects within a relatively complex model, aligning with the objectives of this study.

RESULTS AND DISCUSSION

In evaluating both the measurement and structural models, this study adopted the latest recommendations in confirmatory and explanatory research. This research applies Partial Least Squares (PLS) analysis in two stages. First, the measurement model is assessed to test the validity and reliability of the indicators for each construct. We assessed all constructs except E-Service Quality, which were all modeled as reflective: perceived value, satisfaction, loyalty, and the four dimensions of E-Service Quality. Finally, in the second stage, we assessed the fit of the model containing the second-order composite.

The initial step in data processing involved conducting a preliminary study (pre-test) to ensure that the measurement instruments used in the main study would yield accurate and reliable results. A total of 35 respondents who met the predetermined criteria participated in this stage. The findings from the first pre-test indicated that 4 out of 28 items did not meet the minimum factor loading threshold of 0.40, specifically ESQ2, FSQ1, PV1, and PV4. Although several other items demonstrated values near the lower bound of 0.40, they were retained since they met the minimal statistical requirements and the overall construct reliability was still acceptable (Hair et al., 2022).

The descriptive results indicate that Tokopedia demonstrates strong performance across most dimensions of electronic service quality, particularly in efficiency (M = 4.205) and system availability (M = 4.201), highlighting the platform's ability to provide fast, accessible, and reliable services. These findings are consistent with Parasuraman et al. (2005), who identified efficiency and technical reliability as central determinants of perceived e-service quality. Similarly, the strong evaluation of fulfillment (Mean = 4.184), especially in terms of timely delivery, aligns with prior studies emphasizing the role of logistical accuracy in fostering trust in online shopping platforms (Rita et al., 2019). However, the relatively lower rating for privacy and security (Mean = 4.112) suggests lingering user concerns about data protection and transaction risks, resonating with Ramanathan et al. (2022), who noted that digital trust is significantly influenced by perceptions of information security. Beyond service quality, the favorable ratings of perceived value (Mean = 4.171) and e-satisfaction (Mean = 4.212) reinforce Zeithaml's (1988) conceptualization that customer value perceptions directly enhance satisfaction. Lastly, the positive evaluation of e-loyalty (Mean = 4.159), particularly in willingness to recommend Tokopedia, reflects a generally strong loyalty base, yet the gap in privacy/security indicates a potential vulnerability where competitors could capitalize. Taken together, these findings suggest that while Tokopedia has effectively addressed efficiency, fulfillment, and accessibility, sustained user loyalty will depend on strengthening consumer confidence in data protection and online transaction security.

Validity in this study is measured through convergent validity and Average Variance Extracted (AVE). The results show that all factor loadings for each construct are above the

recommended threshold of 0.7. Factor loadings between 0.4 and 0.7 may still be acceptable under certain conditions, particularly when the AVE and the construct's composite reliability remain within acceptable thresholds (Hair et al., 2022). Based on the data processing results, there are some factor loadings below 0.4, namely for the indicators ESQ2, FSQ1, PV1, and PV4. Therefore, these indicators were excluded from the research model, and a re-test of the factor loadings was conducted. After re-testing, all indicators in the research model are now above 0.6. The lowest factor loading is for the ESQ2 indicator at 0.624, while the highest is for the ES4 indicator at 0.860.

To ensure clarity in interpreting the constructs used in this study, the following operational definitions are provided. E-Service Quality (E-SQ) represents the overall quality of service provided by the Tokopedia platform and is modeled as a higher-order construct consisting of four reflective dimensions. The first dimension, Efficiency (ESQ), refers to the ease and speed with which users can navigate Tokopedia, search for products, and complete transactions. The second dimension, Fulfillment (FSQ), reflects the accuracy and timeliness of order delivery, ensuring that customers receive the correct products within the promised timeframe. The third dimension, Privacy/Security (PSQ), relates to Tokopedia's ability to protect users' personal and payment information and provide safe transactions. The fourth dimension, System Availability (SSQ), measures the reliability and stability of Tokopedia's platform, including accessibility, technical performance, and smooth functionality. Perceived Value (PV) refers to the consumer's evaluation of the benefits gained from using Tokopedia relative to the monetary and non-monetary costs incurred. E-Satisfaction (ES) denotes the overall satisfaction experienced by users in relation to their online shopping interactions with Tokopedia. Finally, E-Loyalty (EL) describes users' behavioral intentions to continue shopping on Tokopedia, recommend it to others, and maintain a preference for Tokopedia over competing platforms.

Table 1. First Order Validity and Reliability Analysis

Construct	Item	Factor Loading	Average Variance Extracted (AVE)	Cronbach's Alpha	Composite Reliability
Efficiency	ESQ_1	0,847	0,727	0,874	0,914
	ESQ_2	0,867			
	ESQ_3	0,852			
	ESQ_4	0,843			
Fulfillment	FSQ_1	0,818	0,710	0,844	0,895
	FSQ_2	0,865			
	FSQ_3	0,851			
	FSQ_4	0,837			
Privacy/Security	PSQ_1	0,832	0,733	0,878	0,916
	PSQ_2	0,879			
	PSQ_3	0,868			
	PSQ_4	0,844			
System Availability	SSQ_1	0,840	0,717	0,755	0,845
	SSQ_2	0,851			
	SSQ_3	0,843			
	SSQ_4	0,854			
Perceived Value	PV_1	0,816	0,682	0,844	0,895
	PV_2	0,845			

	PV_3	0,819			
	PV_4	0,822			
E-Satisfaction	ES_1	0,718	0,557	0,734	0,834i
	ES_2	0,756			
	ES_3	0,771			
	ES_4	0,739			
E-Loyalty	EL_1	0,801	0,578	0,755	0,845
	EL_2	0,720			
	EL_3	0,743			
	EL_4	0,773			

Source: Output SmartPLS 4.0

In the first stage, we evaluated four reflectively measured constructs, including efficiency, fulfillment, privacy/security, and system availability as dimensions of E-Service Quality, along with perceived value, e-satisfaction, and e-loyalty. To ensure measurement quality, we assessed construct reliability, convergent validity, and discriminant validity (Hair et al., 2022). Indicator reliability was established by verifying that each item's loading on its construct exceeded 0.70 (Hair et al., 2022). Construct reliability was supported when both Composite Reliability (CR) and Cronbach's alpha were above 0.70, while convergent validity was confirmed when the Average Variance Extracted (AVE) for each construct exceeded 0.50 (Hair et al., 2022). These results indicated that the measurement model was internally consistent and reliable.

Table 2. First Order Heterotrait-Monotrait (HTMT) Analysis

	EL	ES	ESQ	FSQ	PV	PSQ	SSQ
EL							
ES	0,867						
ESQ	0,801	0,775					
FSQ	0,765	0,805	0,780				
PV	0,713	0,857	0,660	0,775			
PSQ	0,790	0,780	0,800	0,785	0,688		
SSQ	0,812	0,790	0,765	0,849	0,722	0,720	

Source: Output SmartPLS 4.0

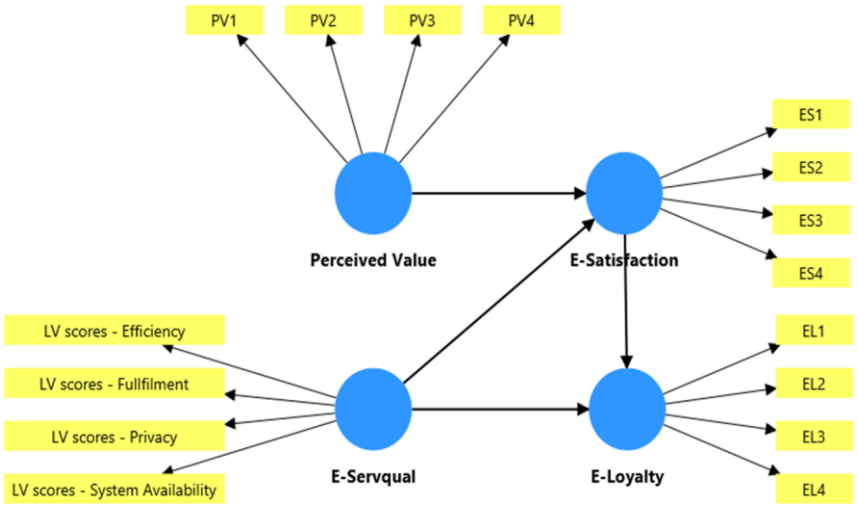
Table 3. First Order Fornell-Larcker Criterion Analysis

	EL	ES	ESQ	FSQ	PV	PSQ	SSQ
EL	0,760						
ES	0,649	0,746					
ESQ	0,651	0,621	0,852				
FSQ	0,617	0,641	0,678	0,843			
PV	0,570	0,677	0,567	0,663	0,826		
PSQ	0,643	0,627	0,701	0,683	0,592	0,856	
SSQ	0,658	0,633	0,667	0,736	0,620	0,629	0,847

Source: Output SmartPLS 4.0

For discriminant validity, we applied both the Fornell-Larcker criterion and the Heterotrait–Monotrait ratio (HTMT) (Hair et al., 2022). The Fornell-Larcker criterion requires that a construct's AVE is greater than the squared correlations with other constructs, while HTMT values should remain well below one, with 0.85 or 0.90 commonly used as thresholds. Tables 2 and 3 present the results of these tests. Although the AVE for Attention was lower

than its squared correlation with Absorption, we followed recent methodological recommendations that prioritize HTMT over the Fornell-Larcker criterion in assessing discriminant validity (Hair et al., 2022). Since all HTMT values were significantly below 0.90, discriminant validity was confirmed.



Figures 1. Second Order Model
Source: Output SmartPLS 4.0

Further, *E-Service Quality* was modeled as a second-order composite encompassing efficiency, fulfillment, privacy/security, and system availability. The reflective specification of the second-order construct resulted in a significant deterioration of model fit, whereas the composite specification provided acceptable fit, supporting the conceptualization of *E-Service Quality* as a higher-order construct (Hair et al., 2022).

Table 4. Second Order Validity and Reliability Analysis

Construct	Item	Factor Loadings	Average Variance Extracted (AVE)	Cronbach's Alpha	Composite Reliability
E-S-QUAL	Efficiency	0,873	0,762	0,896	0,927
	Fulfillment	0,886			
	Privacy/Security	0,863			
	System Availability	0,869			
Perceived Value	PV_1	0,816	0,682	0,844	0,895
	PV_2	0,845			
	PV_3	0,819			
	PV_4	0,822			
E-Satisfaction	ES_1	0,719	0,557	0,734	0,834
	ES_2	0,756			
	ES_3	0,770			
	ES_4	0,739			
E-Loyalty	EL_1	0,803	0,578	0,755	0,845
	EL_2	0,722			
	EL_3	0,741			
	EL_4	0,772			

Source: Output SmartPLS 4.0

To assess E-Service Quality as a second-order composite, both validity and reliability were carefully examined. Convergent validity was established by analyzing the factor loadings of the four first order dimensions—efficiency, fulfillment, system availability, and privacy/security—on the higher-order construct. All loadings exceeded the recommended threshold of 0.70, confirming that each dimension contributes meaningfully to the overall construct of e-service quality (Hair et al., 2022). This result indicates that the second-order construct adequately captures the common variance shared by its dimensions. For reliability, composite reliability (CR) values for the second-order construct were above 0.70, demonstrating that the construct consistently captures the variance of its first-order dimensions. Cronbach's alpha values were also greater than 0.70, confirming internal consistency reliability across the measurement items. Together, these findings indicate that the higher-order specification of e-service quality is both valid and reliable, providing a robust basis for subsequent hypothesis testing.

Table 5. Second Order Heterotrait-Monotrait (HTMT) Analysis

	EL	ES	ESQ	PV
EL				
ES	0,867			
ESQ	0,895	0,890		
PV	0,713	0,857	0,803	

Source: Output SmartPLS 4.0

Table 6. Second Order Fornell-larcker criterion Analysis

	EL	ES	ESQ	PV
EL	0,760			
ES	0,648	0,746		
ESQ	0,736	0,722	0,873	
PV	0,571	0,677	0,700	0,826

Source: Output SmartPLS 4.0

Discriminant validity was also confirmed. The correlations between the second-order construct and its dimensions were stronger than its correlations with other constructs in the model, fulfilling the Fornell–Larcker criterion. In addition, the Heterotrait–Monotrait ratio (HTMT) values were below the conservative threshold of 0.85, further supporting the distinctiveness of the second-order construct from other latent variables (Hair et al., 2022).

This confirms that E-Service Quality is inherently multidimensional and cannot be captured by a single dimension alone. Each of its components contributes uniquely to shaping users' perceptions of service quality. This multidimensional view is consistent with the E-S-QUAL model (Parasuraman et al., 2005), which conceptualizes service quality as an integration of efficiency, fulfillment, system availability, and privacy/security. For Tokopedia, this finding implies that achieving high customer satisfaction and loyalty requires holistic improvements across all four service quality dimensions, rather than focusing on isolated aspects.

Hypothesis Test Result

The path coefficient's significance is evaluated to examine the relevance of the relationship between constructs (Hair et al., 2022). Hair (2022) stated that path coefficient value ranges from -1 to +1, indicating a strong negative or positive relationship. In marketing research, significance level is typically assumed to be 5% (Hair et al., 2022). To measure the significance of relationship between constructs at that level, the p-value must be less than 0.05

and the t-value must exceed 1.65 in a one-tailed test (Hair et al., 2022). Data analysis was done by bootstrapping 5000 samples as recommended by Hair (2022) with a one-tailed test since the hypothesis in this study has a negative or positive direction.

Table 7. Result of Hypothesis Testing

Hypothesis	Hypothesis Direction	Path Coefficients	T statistics	P values	Results
H1	PV → ESQ	0.337	6.017	0.000	Accepted
H2	ESQ → ES	0.486	9.554	0.000	Accepted
H3	ESQ → EL	0.560	10.168	0.000	Accepted
H4	ES → EL	0.244	3.963	0.000	Accepted

Source: Output SmartPLS 4.0

The hypothesis testing results presented in Table 7 demonstrate that all proposed hypotheses were supported.

1. For H1, Perceived Value (PV) was found to have a significant positive effect on E-Service Quality (ESQ) ($\beta = 0.337$, $t = 6.017$, $p < 0.001$). This indicates that when users perceive greater value from Tokopedia, they also evaluate its service quality more positively.
2. For H2, E-Service Quality significantly influenced E-Satisfaction ($\beta = 0.486$, $t = 9.554$, $p < 0.001$). This result highlights that higher levels of efficiency, fulfillment, system availability, and privacy/security contribute to greater satisfaction among users.
3. For H3, E-Service Quality also showed a strong and significant impact on E-Loyalty ($\beta = 0.560$, $t = 10.168$, $p < 0.001$). This finding emphasizes that consistent and reliable service quality directly fosters user loyalty toward Tokopedia.
4. Finally, for H4, E-Satisfaction was found to positively affect E-Loyalty ($\beta = 0.244$, $t = 3.963$, $p < 0.001$). This suggests that satisfied users are more likely to remain loyal, continue shopping, and recommend Tokopedia to others.

The explanatory power of the model was substantial, with R^2 values of 0.580 for e-satisfaction and 0.570 for e-loyalty, indicating that over half of the variance in these constructs was explained by the predictors. Effect size analysis revealed that E-S-QUAL exerted the strongest influence on both e-satisfaction ($f^2 = 0.287$, medium) and e-loyalty ($f^2 = 0.350$, large). In comparison, perceived value had a small effect on satisfaction ($f^2 = 0.138$), and satisfaction itself had a small effect on loyalty ($f^2 = 0.066$). Predictive validity tests (PLS-Predict) confirmed that the model possessed strong predictive relevance, with Q^2 values above 0 and consistently lower RMSE and MAE values in the PLS model compared to linear regression benchmarks. This result reinforces the robustness of the proposed structural model in predicting e-satisfaction and e-loyalty across contexts.

Discussion

The findings of this study provide empirical evidence regarding the relationships among perceived value, e-service quality (E-S-QUAL), e-satisfaction, and e-loyalty in the context of Tokopedia users in Greater Jakarta, focusing specifically on Generation Z and Millennial consumers. The structural model confirms that all four hypotheses are supported, yet the magnitude of their effects reveals meaningful insights into the dynamics of consumer behavior in Indonesia's e-commerce industry.

The first hypothesis examined the influence of perceived value on e-satisfaction. The results demonstrate a statistically significant and positive relationship, with a path coefficient of 0.337 and a t-statistic of 6.017, although the effect size ($f^2 = 0.138$) falls within the small category. This finding aligns with prior research which conceptualizes perceived value as the consumer's overall evaluation of trade-offs between benefits received and costs incurred

(Zeithaml, 1988). Consistent with studies by Misra et al. (2022), Evelina (2022), and Ciputra and Prasetya (2020), the results indicate that when users perceive that Tokopedia provides value congruent with the price paid, they tend to report higher satisfaction. However, the relatively weaker effect compared to E-S-QUAL suggests that perceived value alone is not sufficient to drive satisfaction in this context. This nuance may be explained by the characteristics of Generation Z and Millennial consumers, who are highly price-sensitive and inclined to compare promotions across competing platforms. As such, their perception of value is often shaped by temporary discounts and promotions rather than holistic assessments of quality, which diminishes the long-term influence of perceived value on satisfaction. While this confirms the theoretical expectation that value matters, it also highlights that in highly competitive e-commerce markets, perceived value plays a secondary role to service quality in shaping customer satisfaction.

The relationship between e-service quality (E-S-QUAL) and e-satisfaction. The findings provide strong support, with a path coefficient of 0.486, a t-statistic of 9.554, and a medium effect size ($f^2 = 0.287$). These results validate the E-S-QUAL framework proposed by Parasuraman et al. (2005), which emphasizes efficiency, system availability, fulfillment, and privacy/security as the key dimensions of e-service quality. The empirical evidence from this study is consistent with previous work by Khan (2019), Kaur (2020), and Sheu and Chang (2022), who argued that digital service quality is a primary driver of customer satisfaction. Moreover, the context-specific findings demonstrate that Tokopedia users, particularly from younger generations, place significant emphasis on efficiency and system stability. This is consistent with Sheu and Chang (2022), who observed that digital natives are more likely to evaluate their satisfaction based on convenience and transaction speed rather than solely on product price. Importantly, the study also confirms insights from Dewi (2024) and Mofokeng (2021), showing that shortcomings in any single service dimension, particularly privacy/security, can erode satisfaction despite high performance in other areas. Together, these results emphasize that Tokopedia's digital service quality is more influential than perceived value in driving satisfaction, underscoring the necessity of maintaining consistent, reliable, and secure services to ensure a positive consumer experience.

The third hypothesis tested whether E-S-QUAL directly influences e-loyalty, and the findings confirm this relationship with the strongest effect observed in the model (path coefficient = 0.560, t-statistic = 10.168, effect size $f^2 = 0.350$). This suggests that consumers' perceptions of Tokopedia's service quality translate directly into loyalty behaviors, such as repeat usage and word-of-mouth recommendations. The finding is consistent with studies by Al-dweeri et al. (2019), Alnaim (2022), and Sheu and Chang (2022), which establish that superior service quality fosters loyalty by enhancing both trust and satisfaction. What is notable in this study is that the direct effect of service quality on loyalty is stronger than the indirect effect mediated by satisfaction. This aligns with the conclusions of Harazneh et al. (2020) and Ferdinand et al. (2021), who highlighted that service quality can influence loyalty through both direct and mediated pathways.

The fourth hypothesis assessed the relationship between e-satisfaction and e-loyalty. The results confirm a significant relationship, with a path coefficient of 0.244, a t-statistic of 3.963, and a small effect size ($f^2 = 0.066$). This supports the theoretical assertion of Anderson and Srinivasan (2003) that higher satisfaction leads to higher loyalty and corroborates findings by Sheu and Chang (2022) and Al Amin (2023) in similar digital contexts. Nevertheless, the relatively small effect observed here suggests that satisfaction plays a supportive but not decisive role in fostering loyalty. This contrasts with studies such as Nawastuty (2022) and Misra (2022), which identified satisfaction as a primary mediator between corporate communication, service, and loyalty. One possible explanation is the highly competitive Indonesian e-commerce environment, where consumers are offered abundant alternatives and

are motivated by price-based promotions. As Kristanto (2022) argued, even satisfied customers may exhibit declining loyalty if switching costs are low and competitors provide more attractive offers.

When integrating these findings, a clear pattern emerges: E-S-QUAL stands out as the dominant determinant of both e-satisfaction and e-loyalty, overshadowing the effects of perceived value and satisfaction itself. This aligns with the Expectation Confirmation Theory (Oliver, 1980), which posits that satisfaction arises when expectations of service are confirmed, yet also extends the theory by suggesting that in digital commerce contexts, direct evaluations of service quality can bypass satisfaction and directly influence loyalty. Such results are particularly relevant in the case of Generation Z and Millennial consumers, whose digital nativity makes them more attentive to the speed, reliability, and security of service delivery than to the traditional balance of cost and benefit. While perceived value remains significant, its smaller effect highlights that price-based strategies alone cannot guarantee satisfaction or loyalty in an intensely competitive market. Similarly, while satisfaction positively contributes to loyalty, its weaker effect suggests that consumer loyalty in Indonesia's e-commerce sector is fragile and conditional, heavily dependent on the consistent delivery of superior digital service quality.

Although perceived value and satisfaction contribute positively, they play supporting roles compared to the decisive influence of E-S-QUAL. The findings provide both theoretical and practical implications: theoretically, they confirm the primacy of service quality in shaping digital consumer behavior, and practically, they suggest that Tokopedia should invest in reinforcing trust and system reliability as strategic levers for securing long-term loyalty among Gen Z and Millennial users in a highly contested e-commerce landscape.

CONCLUSION

This study was conducted to investigate the influence of e-service quality and perceived value on e-satisfaction and e-loyalty among Generation Z and Millennial users of Tokopedia in the Jabodetabek area. The findings confirm that both e-service quality and perceived value significantly enhance e-satisfaction, which in turn plays an important role in strengthening customer loyalty. Moreover, the results demonstrate that e-service quality has not only an indirect effect through satisfaction but also a direct positive effect on e-loyalty. These findings highlight that while perceived value serves as a critical determinant of satisfaction, e-service quality remains the most decisive factor in shaping and maintaining long-term loyalty to Tokopedia.

In relation to the research objectives, the study provides clear evidence that satisfaction functions as a mediating construct that links service quality and perceived value with loyalty. This indicates that in order to build stronger loyalty among Gen Z and Millennials, Tokopedia must prioritize not only pricing strategies and value perception but also consistent service excellence that ensures efficiency, reliability, system stability, and data security. The results emphasize that the decline in loyalty experienced by Tokopedia in recent years cannot be addressed solely through aggressive promotions, but rather through sustainable improvements in both technological infrastructure and customer experience.

From a scientific perspective, this research contributes to the broader literature on digital consumer behavior and e-commerce loyalty by integrating and empirically testing the relationships between service quality, perceived value, satisfaction, and loyalty within a single structural model. The study reinforces prior theoretical assumptions while also addressing inconsistencies in earlier findings regarding the direct effect of service quality and perceived value on loyalty. Specifically, it demonstrates that satisfaction continues to serve as a pivotal construct in mediating the loyalty formation process among young digital consumers.

In practical terms, the study advances knowledge in the field of e-commerce management by providing insights that can be applied not only to Tokopedia but also to other digital platforms operating in highly competitive markets. By confirming the significance of both service quality and perceived value, the study highlights the importance of balancing functional excellence with perceived benefits in order to achieve sustainable loyalty. This contributes to the ongoing development of customer-centric strategies in digital business and strengthens the alignment of marketing practices with the expectations of digitally savvy generations.

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