

***The Effect Of Application Quality, Product Variety And E-Servicescape On Tokopedia Customer Satisfaction***

**Pengaruh Kualitas Aplikasi, Variasi Produk Dan E-Servicescape Terhadap Kepuasan Konsumen Tokopedia**

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***Abstract***

*The amount of competition in e-commerce or purchasing applications causes customer to have many choices in determining where to make purchases. This study is motivated to analyze the effect of application quality, product variety and e-servicescape on Tokopedia customer satisfaction. The research method is quantitative. The number of samples sebnayak 130 respondents with convenience sampling techniques. Data analysis techniques using multiple regression analysis. The results of the study showed that the quality of applications, product variations and e-servicescape affect Tokopedia customer satisfaction both partially and simultaneously.*

**Keywords:** Application Quality, Product Variety, E-Servicescape Customer Satisfaction

***Abstrak***

Banyaknya persaingan e-commerce atau aplikasi pembelian menyebabkan konsumen memiliki banyak pilihan dalam menentukan dimana akan melakukan pembelian. Penelitian ini dilatarbelakangi untuk menganalisis pengaruh kualitas aplikasi, variasi produk dan e-servicescape terhadap kepuasan konsumen Tokopedia. Metode penelitian adalah kuantitatif. Jumlah sampel sebnayak 130 responden dengan teknik *sampling convenience*. Teknik analisis data menggunakan analisis regresi berganda. Hasil penelitian memperoleh kualitas aplikasi, variasi produk dan e-servicescape berpengaruh terhadap kepuasan konsumen Tokopedia baik secara parsial maupun bersamaan.

**Kata Kunci:** Kualitas Aplikasi, Variasi Produk, E-Servicescape, Kepuasan Konsumen

**1. Introduction**

Online shopping activities have become commonplace today, the desire of customers to shop online because they get good goods from one marketplace. The emergence of the intention to buy back in one market because customers feel comfortable and satisfied. Tokopedia is one of the largest companies in Indonesia that conducts digital-based sales and purchases. PT Tokopedia has succeeded in becoming one of Indonesia's internet industries with very fast growth. Tokopedia upholds the business model in online malls and marketplaces, Tokopedia allows individuals, brands, and small stores to open and manage online stores. Since its launch until late 2015, basic services on Tokopedia can be used for all users for free. Behind the success achieved by Tokopedia, some Tokopedia customers feel disadvantaged by Tokopedia.

According to Lestari, et al., (2020), customer satisfaction is critical in e-commerce because it can increase loyalty, Customer retention, and drive business growth. Customer satisfaction tends to make repeat purchases, become brand advocates, and recommend businesses to others. In addition, customer satisfaction can also reduce marketing costs because satisfied customers tend to be an effective source of word of mouth marketing. Tokopedia's customer satisfaction has decreased which can be seen from the number of negative complaints and low ratings. Some customer

complaints are dominated by problems of application quality, product variety and e-servicescape which still disappoint customers.

According to Lestari, et al., (2020), application quality is how well an application meets desired functional and non-functional requirements, as well as providing a good user experience. According to Sapitri and Putri (2023), application quality reflects how well the application meets functional and non-functional requirements. Application quality can also be defined as the ability of an application to meet the needs and expectations of users. Indicators of app quality also include reliability, ease of Use, and performance. Application quality is very important because it affects user satisfaction, user retention, application security, and ultimately, the success of the application itself. High-quality apps tend to result in a better user experience, more downloads, more loyal users, and fewer security concerns (Noor, 2022). Research conducted by Safitri and Dewi (2025) that application quality affects customer satisfaction. However, different results obtained Febrianti, et al., (2023) that application quality has no effect on customer satisfaction. The quality of Tokopedia applications that still customer dissatisfaction. Users often complain of problems with the search feature, slow loading, application errors, and product image incompatibilities. As a result, many customers are switching to other e-commerce applications that are more optimal.

Product variety is a business strategy in which a company offers a wide range of products with different features, designs, prices and options to meet the diverse preferences and needs of customers. It is an effort to create product diversification to attract various market segments and increase the attractiveness of the product in the eyes of customers (Pawarti, et al.,2022). According to Pawar, et al., (2022), product variety is a business strategy in which companies offer a wide variety of products with different features, designs, prices, and options to meet the diverse preferences and needs of customers. According to Sisca, et al., (2022), product variety is the diversity or difference in the type, size, price, or appearance of a product offered by a company to customers. It is a marketing strategy to provide customers with more choices and meet the various needs and preferences of customers. Indicators of product variation are product size, price, appearance, and availability. Research conducted by Andawina and Saputra (2024) that product variations affect customer satisfaction. However, different results were obtained by Azizah (2023) that product variations do not affect Customer satisfaction. The problem of product variety in Tokopedia when compared to its competitors, is the lack of completeness of product categories and options available. Then another problem is that descriptions that do not explain the benefits, functions, materials, sizes, colors, and other product details can make buyers unsure of the product. This can make customers feel less satisfied because of limited choices or difficult to find the product they are looking for.

Servicescape is critical to business success because it affects Customer perceptions, emotions, and behavior, and can increase customer satisfaction. In e-commerce, e-servicescape refers to the visual, interactive, and functional elements of a website or online platform that create an experience for Customers (Safira, 2024). According to Rahman and Listryorini (2022), e-servicescape is a virtual environment designed to create a positive experience for Customers when interacting with businesses online. According to Wibisono (2023), e-servicescape is a virtual environment designed to influence the perception and behavior of customers in the context of online services. The three main indicators of e-servicescape that are often

used are aesthetic appeal, layout and functionality and security. Research conducted by Safira (2024) that e-servicescape affects customer satisfaction. However, different results were obtained by Sucahyo and Solovida (2022) that e-servicescape had no effect on Customer satisfaction. Tokopedia's E-Servicescape problem can refer to several aspects that affect the user experience in interacting with the Tokopedia platform online. Some of the problems that may arise related to e-Servicescape include Tokopedia is not intuitive, difficult to navigate, or inconsistent between pages, this can make it difficult for users to find products, complete transactions, or find the information they need. Features such as product search, shopping cart, payment system, or other features may not function properly, causing frustration in users. Users feel the platform is not safe to enter personal information or make transactions, this can reduce their trust in Tokopedia. Then customer support is slow, unhelpful, or unresponsive, this can leave a negative impression on users. As a result, many negative responses due to customer dissatisfaction in using Tokopedia.

The purpose to be achieved in this study is to analyze the effect of application quality, product variety and e-servicescape on Tokopedia customer satisfaction. Based on the explanation above, the author is interested in raising a research title, namely "The Influence Of Application Quality, Product Variation and E-Servicescape on Tokopedia Customer Satisfaction".

### **Implementation Methods**

This research approach based on quantitative approach. Quantitative research is more based on data that can be calculated to produce an interpretation. descriptive research is research that uses correlation research that aims to find the influence between one variable and another. The nature of the research used is descriptive explanatory which aims to explain the position of the variables studied and the relationship between variables with other variables. The population in this study is students and female students of tokopedia customers in Medan who have transacted on tokopedia in 2025.

Researchers used the Hair formula by looking at the number of indicators in this study as many as 13 indicators multiplied by 10 so that the sample number of 130 student Customers in Medan who have transacted on tokopedia in 2025. According to Riyanto and Hatmawan (2020), sampling convenience is based on ease, namely participants who are willing to fill out questionnaires. In this case, participants were chosen because they happened to be in the right place at the right time and were willing to fill out a questionnaire. Data collection techniques used in this study are research questionnaires, interviews, documentation studies. Then the data analysis technique used is multiple linear regression with SPSS version 27.

## **2. Results And Discussion**

### **Descriptive Statistics**

Descriptive statistics in this study are :

**Table 1. Descriptive Statistics**

<b>Descriptive Statistics</b>					
	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Application Quality	130	6	30	20.88	6.230
Product Variations	130	8	40	26.06	8.318

E-Servicescape	130	7	30	18.16	6.183
CustomerSatisfaction	130	6	30	18.29	5.921
Valid N (listwise)	130				

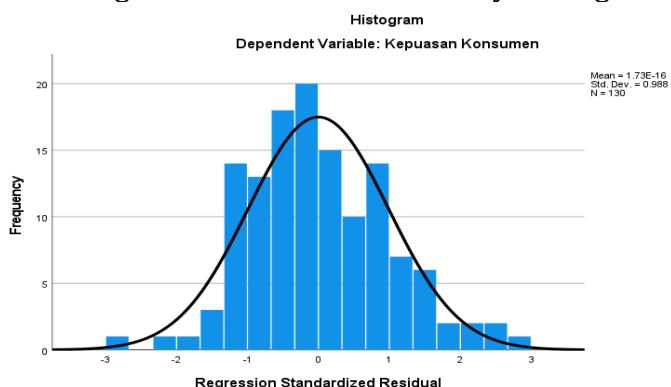
Application quality with sample of 130 respondents and a minimum value of 6 and a maximum of 30 with mean value of 20.88 and standard deviation of 6.230. Product variations with minimum of 8 and maximum of 40 with mean value of 26.06 and standard deviation of 8.318. E-Servicescape with a minimum value of 7 and maximum of 30 with mean value of 18.16 and standard deviation of 6.183. Customer satisfaction with minimum value of 6 people and maximum of 30 with a mean value of 18.29 and standard deviation of 5.921.

### Classical Assumption Test

A Classical Assumption Test is a mandatory statistical diagnostic for Ordinary Least Squares (OLS) regression models to ensure that estimates are accurate, unbiased, and consistent (BLUE - Best Linear Unbiased Estimator).

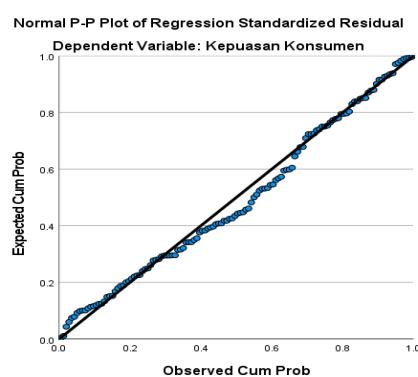
### Normality Test

Normality testing is a statistical procedure to test whether a data spreads normally. The following are the results of normality testing::



**Figure 1. Normality Test with Histogram**

Figure 1. A Histogram showing a symmetrical bell shape, with a peak in the middle and an even distribution of data on both sides, is an indication that the data may be normally distributed.



**Figure 2. Normality Test with P-P Plot**

Figure 2. Data spreads around the diagonal line and spreads close to the diagonal line. This means that the data is normally distributed.

**Table 2. Kolmogorov Smirnov**  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		130
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	3.75136297
Most Extreme Differences	Absolute	.078
	Positive	.078
	Negative	-.043
Test Statistic		.078
Asymp. Sig. (2-tailed) <sup>c</sup>		.051
Monte Carlo Sig. (2-tailed) <sup>d</sup>	Sig.	.055
	99% Confidence Interval	Lower Bound Upper Bound
		.050 .061

a. Test distribution is Normal.  
b. Lilliefors Significance Correction.  
c. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 1535910591.

Table 2. shows significant values of  $0.051 > 0.05$ . Thus, the results of the Kolmogorov Smirnov test show that the data are normally distributed.

### Multicollinearity Test

Multicollinearity test is a statistical test to detect the high correlation between independent variables in multiple linear regression models. Multicollinearity test results are:

**Table 3 Multicollinearity Test**

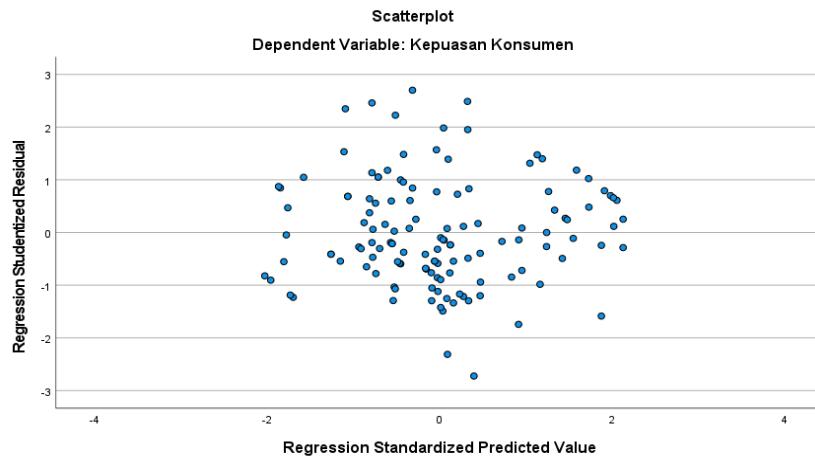
Model	Coefficients <sup>a</sup>			Collinearity Statistics			
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
	B	Std. Error	Beta				
1 (Constant)	1.363	1.349		1.010	.314		
Application Quality	.165	.068	.174	2.434	.016	.624	1.602
Product Variations	.172	.046	.242	3.722	.000	.754	1.326
E-Servicescape	.495	.067	.517	7.413	.000	.655	1.527

a. Dependent Variable: CustomerSatisfaction

Table 3. shows that the tolerance value for the independent variable  $> 0.1$  while the value of VIF for the independent variable  $< 10$ . Thus in multicollinearity test there is no correlation between independent variables..

### Heteroscedasticity Test

A heteroscedasticity test is a statistical diagnostic procedure used in regression analysis to determine if the error terms (residuals) have non-constant variance across all observations.



**Figure 3. Heteroscedasticity test with Scatterplot**

The points spread out in an indistinct pattern on the Y axis, do not converge in one place that does not occur heteroscedasticity in the regression model. This random distribution pattern is one of the main visual indicators in the classical assumption test, which shows that the best Linear unbiased Estimator (BLUE) regression model is fulfilled.

**Table 4. Heteroscedasticity Test with Glejser**

Model	Coefficients <sup>a</sup>						
	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	3.277	.793		4.130	.000	3.277	.793
Application Quality	.078	.040	.217	1.965	.052	.078	.040
Product Variations	-.046	.027	-.170	-1.695	.093	-.046	.027
E-Servicescape	-.040	.039	-.110	-1.021	.309	-.040	.039

a. Dependent Variable: RES2

Table 4. the above shows the significant value of the application quality variables of  $0.974 > 0.05$ , product variation variables of  $0.799 > 0.05$  and e-Servicescape variables of  $0.205 > 0.05$ . Thus, from the results of Glejser test, it can be said that there is no heteroscedasticity problem..

### Multiple Linear Regression Analysis

Multiple regression analysis is:

**Table 5. Multiple regression Analysis**

Model	Coefficients <sup>a</sup>						
	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1.363	1.349		1.010	.314	1.363	1.349
Application Quality	.165	.068	.174	2.434	.016	.165	.068
Product Variations	.172	.046	.242	3.722	.000	.172	.046
E-Servicescape	.495	.067	.517	7.413	.000	.495	.067

a. Dependent Variable: CustomerSatisfaction

$$\text{Customer Satisfaction} = 1.363 + 0.270 \text{ Application Quality} + 0.165 \text{ Product Variety} + 0.242 \text{ E-Servicescape}$$

1. The constant value of 1.363 which indicates the application quality, product variations, and e-servicescape is considered zero (0) then the customer satisfaction of 1.363.
2. If the increase is 1% for the quality of the application, then customer satisfaction will increase by 16.5%.
3. If the increase is 1% for product riasi, then customer satisfaction will increase by 17.2%.
4. If the increase is 1% for e-servicescape, then customer satisfaction will increase by 49.5%.

### Coefficient of Determination

Determination of results is:

**Table 6. Determination**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774 <sup>a</sup>	.599	.589	3.796

Table 6. customer satisfaction can be explained by the variation of application quality variables, product variations, and e-servicescape of 58.9% while the remaining 41.1% (100% - 58.9%) is explained by other variables that are not studied in this study, such as promotional programs, product completeness, security and so on..

### Simultaneous Test

The results of simultaneous hypothesis testing can be seen in the table below:

**Table 7. Simultaneous Test**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2707.511	3	902.504	62.640	.000 <sup>b</sup>
	Residual	1815.381	126	14.408		
	Total	4522.892	129			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), E-Servicescape, Product Variation, Application Quality

Table 7 show that the calculated F count (62.640) > F table (2.68) and the probability of significance of 0.000 < 0.05, it means that Ha is accepted Ho rejected, so it is concluded that simultaneously the application quality, product variations, and e-servicescape have positive and significant effect on Tokopedia customer satisfaction.

### Partial Test

**Table 8. Partial Test**

Model	Coefficients <sup>a</sup>						
	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1.363	1.349		1.010	.314	1.363	1.349
Application Quality	.165	.068	.174	2.434	.016	.165	.068

Product Variations	.172	.046	.242	3.722	.000	.172	.046
E-Servicescape	.495	.067	.517	7.413	.000	.495	.067

a. Dependent Variable: CustomerSatisfaction

Partial test results for application quality variables obtained a value of  $t$  count  $>$   $t$  table and  $2.434 > 1.979$  and significantly obtained  $0.016 < 0.05$ , means that  $H_1$  is accepted that partially the application quality has an effect positive and significant effect on Tokopedia customer satisfaction.

Partial test results for product variation variables obtained a value of  $t$  count  $>$   $t$  table and  $3.722 > 1.979$  and significant obtained  $0.000 < 0.05$ , means that  $H_2$  is accepted that partially product variations has an effect positive and significant effect on Tokopedia customer satisfaction.

Partial test results for e-Servicescape variables obtained a value of  $t$  count  $>$   $t$  table and  $7.413 > 1.979$  and significant obtained  $0.000 < 0.05$ , meaning that  $H_3$  is accepted that partially e-Servicescape has an effect positive and significant effect on Tokopedia customer satisfaction

## Discussion

### Effect of Application Quality on Customer Satisfaction

The test results partially show that application quality has an effect positive and significant effect on Tokopedia customer satisfaction. The results of this study are in line with research conducted by Noor (2022), that partially application quality affects customer satisfaction. According to Lestari and Wahyuni (2020), application quality is an important factor that can affect customer satisfaction. A quality app will provide a positive user experience, increase loyalty, and ultimately contribute to business success. The quality of Tokopedia applications that still do not satisfy customer s. Users often complain of problems with the search feature, slow loading, application errors, and product image incompatibilities. As a result, many customer s are switching to other e-commerce applications that are more optimal.

### Effect Of Product Variations on Customer Satisfaction

Partial test results show that product variations has an effect positive and significant effect on Tokopedia customer satisfaction. The results of this study are in line with research conducted by Finthariasari, et al., (2020), partially product variations affect customer satisfaction. According to Pawart, et al., (2022), product variety can increase customer satisfaction because it provides more choice and the possibility to find products that match their preferences and needs. Satisfied customers are more likely to make repeat purchases. Therefore, the variety of products that can increase customer satisfaction also has the potential to increase customer loyalty and repeat purchases. The problem of product variety in Tokopedia when compared to its competitors, is the lack of completeness of product categories and options available. Then another problem is that descriptions that do not explain the benefits, functions, materials, sizes, colors, and other product details can make buyers unsure of the product.

### Effect of E-Servicescape on Customer Satisfaction

Partial test results that e-servicescape has an effect positive and significant effect on Tokopedia customer satisfaction. The results of this study are in line with research

conducted by Safira (2024), that partially e-servicescape affects customer satisfaction. According to Wijaya (2025), e-servicescape plays an important role in shaping customer satisfaction in the digital age. By understanding and managing the elements of e-servicescape well, businesses can create an attractive, efficient, and secure online environment, which will ultimately increase customer satisfaction, loyalty, and overall business success. Tokopedia's e-servicescape problem can refer to several aspects that affect the user experience in interacting with the Tokopedia platform online. Some of the problems that may arise related to e-servicescape include Tokopedia is not intuitive, difficult to navigate, or inconsistent between pages, this can make it difficult for users to find products, complete transactions, or find the information they need. Features such as product search, shopping cart, payment system, or other features may not function properly, causing frustration in users. Then customer support is slow, unhelpful, or unresponsive, this can leave a negative impression on the user. As a result, many negative responses due to customer dissatisfaction in using Tokopedia.

### **Effect of Application Quality, Product Variety and E-Servicescape on Customer Satisfaction**

The results of simultaneous testing that application quality, product variations, and e-servicescape have positive and significant effect on Tokopedia customer satisfaction. The results of this study are in line with research conducted by Wijaya (2025), Pawart, et al., (2022), that application quality, product variety and e-servicescape affect customer satisfaction. App quality refers to how good, reliable, and easy to use an app is. Users will feel satisfied if the application used meets or exceeds customer expectations. Product variety refers to the variety of products offered by a business. The more choices available, customer s will feel more free to choose the product that best suits the needs and preferences of customer s. E-servicescape is a visual and functional display of a digital or online service environment, such as layout, colors, and navigation on an application or website.

### **3. Conclusion**

The conclusion in this study obtained that the application quality has an effect positive and significant effect on Tokopedia customer satisfaction, product variations has an effect positive and significant effect on Tokopedia customer satisfaction, -servicescape has an effect positive and significant effect on Tokopedia customer satisfaction and application quality, product variations, and e-servicescape have positive and significant effect on Tokopedia customer satisfaction.

The implication in this study is that to improve the quality of Tokopedia applications in the form of removing unused code, compressing Tokopedia resources needs to focus on ensuring the application can work effectively and efficiently, so that users can complete their tasks smoothly. To increase product variety by making it easier for sellers to add products in large quantities and manage product variants to be more efficient. Tokopedia needs to develop a system that recommends relevant products based on users 'Search and purchase history. It can introduce new products to buyers. To improve E-Servicescape by ensuring customer security such as safeguarding sensitive customer data with stronger encryption technology. Suggestions for previous research is to use variables moderating or intervening.

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