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The Effect of Trust and Security on Consumer Satisfaction in Utilizing the Dana E-Wallet

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Abstract
The rapid development of technology has heightened the demand for efficient payment systems to facilitate seamless transactions. In Indonesia, digital wallets (E-Wallets) have gained popularity as a convenient cashless payment solution. This study explores the impact of trust and security on consumer satisfaction in using the Dana E-Wallet, with a focus on Iparts customers in Bandar Lampung. Employing a quantitative approach, the research involved 83 respondents determined using Slovin's formula. Data were gathered through a structured questionnaire and analyzed using multiple linear regression. The findings reveal that trust (sincerity, competence, integrity) and security (data protection, transaction safety) have a significant and positive influence on consumer satisfaction. These insights offer valuable guidance for E-Wallet providers like Dana to enhance user experience by strengthening trust and security features.

Keywords
Trust, Security, Consumer Satisfaction, E-Wallet, Dana.

Introduction
The rapid advancement of technology has significantly reshaped the global financial landscape, driving the adoption of innovative payment systems that enable seamless and efficient transactions. One such innovation is the digital wallet or E-Wallet, which has become an essential tool for facilitating cashless payments in Indonesia (Nawawi, 2020). E-Wallets offer users the convenience of conducting financial transactions without the need for physical cash or cards, making them an ideal solution in the digital era (Schneider, 2011). Among the many platforms available, Dana has emerged as a leading player since its introduction in 2018, providing features such as fund transfers, bill payments, and balance top-ups to meet the needs of tech-savvy consumers (Johan, 2023).

Despite the increasing adoption of E-Wallets, consumer trust and perceived security remain key concerns for service providers. Trust plays a crucial role in influencing consumer behavior in the digital economy, incorporating elements such as sincerity, competence, and integrity (Tjiptono, 2019). Without trust, businesses may struggle to retain users and build long-term customer loyalty (Kotler & Keller, 2016). Similarly, security is vital for ensuring user satisfaction, particularly in protecting sensitive personal data and maintaining transaction safety (Darmawan & Putra, 2022).

According to Rinova (2025), enhancing trust and security features in digital applications is essential for boosting consumer confidence and fostering loyalty, especially in markets transitioning to cashless transactions (Jameel, 2022).

Previous studies have explored various aspects of E-Wallet adoption in Indonesia. For instance, Rinuastuti (2020) analyzed the impact of perceived usefulness and ease of use on Ovo adoption in Binjai, while Suhendry (2021) examined user interest in Dana in Pontianak. Furthermore, Rinova (2025) highlighted the importance of consumer satisfaction in driving sustainable growth within the E-Wallet industry, particularly by strengthening data protection and transaction security. While these studies provide valuable insights into consumer behavior, there remains a gap in understanding the specific influence of trust and security on user satisfaction. This research aims to address this gap by examining the effect of trust and security on consumer satisfaction with Dana, specifically among Iparts customers in Bandar Lampung (Prasetya, 2023).

The findings of this study are expected to offer valuable insights for E-Wallet providers seeking to optimize their services by enhancing trust and security features. By addressing consumer concerns and improving user experience, platforms like Dana can strengthen their competitive position within Indonesia's evolving digital payment ecosystem.

Methods

This study utilized a quantitative approach with an associative method to analyze the relationship between variables. The research targeted customers of Iparts, a retail store in Bandar Lampung, who had used the Dana E-Wallet within the three months preceding the study. The research methodology is outlined as follows:

Population and Sample

The population in this study included all Iparts customers in Bandar Lampung who had prior experience using the Dana E-Wallet. The sample size was determined using Slovin's formula with a 10% margin of error, yielding a total of 83 respondents. To ensure the sample accurately represented the population, a non-probability sampling technique was applied (Sugiyono, 2017).

$$n = \frac{N}{1 + Ne^2}$$

$$n = \frac{500}{1 + 500(0,1)^2}$$

$$n = \frac{500}{1 + 5,00}$$

$$n = \frac{500}{6,00}$$

= 83,33 dibulatkan menjadi 83 orang

The sample size was calculated using Slovin's formula with a 10% margin of error, resulting in a total of 83 respondents. To ensure that the selected participants adequately represented the population, a non-probability sampling technique was employed (Sugiyono, 2017).

Data Collection

Primary data were obtained through a structured questionnaire distributed to the respondents. The questionnaire applied a Likert scale to assess key variables, including trust (sincerity, capability, integrity), security (data protection, transaction safety), and consumer satisfaction (service quality, transaction experience). Participants rated their level of agreement with various statements related to these variables on a scale from 1 to 5, where 1 signified strong disagreement and 5 indicated strong agreement (Rani, 2024).

Instrument Testing

a. Validity Test:

To verify the accuracy of each questionnaire item, a Pearson correlation analysis was performed. Questionnaire items were deemed valid if their correlation coefficient exceeded 0.215, which corresponds to the r-table value for 83 respondents at a 5% significance level (Sugiyono, 2019).

b. Reliability Test:

The reliability of the questionnaire was evaluated using Cronbach's Alpha. An instrument was considered reliable if it achieved a Cronbach's Alpha value greater than 0.60 (Sugiyono, 2019).

Data Analysis

The collected data were processed and analyzed using SPSS 23 software. The analysis consisted of the following steps:

1. Descriptive Analysis – Used to summarize respondents' demographic characteristics and their perceptions of the study variables.
2. Classical Assumption Tests – Conducted to ensure the validity of the regression model:
   a. Normality Test – The Shapiro-Wilk test was applied, where a significance value greater than 0.05 indicated that the data followed a normal distribution.
   b. Multicollinearity Test – Variance Inflation Factor (VIF) values below 10 confirmed the absence of multicollinearity.
   c. Heteroscedasticity Test – A scatterplot analysis was used to detect heteroscedasticity, ensuring no discernible patterns were present.

Multiple Linear Regression Analysis

Multiple linear regression analysis was conducted to examine the effect of trust and security on consumer satisfaction. The regression model was formulated as follows:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \varepsilon$$

Hypothesis Testing

1. T-Test (Partial Test): This test assesses the significance of each independent variable on the dependent variable. A variable is considered significant if the t-value exceeds the t-table value or if $p < 0.05$.
2. F-Test (Simultaneous Test): This test evaluates the overall significance of all independent variables combined. The model is deemed significant if the F-value is greater than the F-table value or if $p < 0.05$.
3. Coefficient of Determination (R^2): This measures the extent to which the independent variables explain the variation in the dependent variable.

Results and Discussion

Result

Descriptive Statistics

The demographic data indicate that the majority of respondents were female (55%), with the most common age being 22 years (36%). Regarding the research variables:

1. Trust (*X*1) had a high overall average score of 4.3, with sincerity rated the highest at 4.5, demonstrating users' confidence in Dana's integrity.
2. Security (*X*2) obtained an overall mean score of 4.2, with data protection receiving the highest rating (4.4), emphasizing the significance of safeguarding user information.
3. Consumer Satisfaction (*Y*) achieved the highest overall average of 4.4, with transaction experience scoring 4.6, highlighting users' positive interactions with Dana.

These findings suggest that trust, security, and consumer satisfaction play a crucial role in strengthening user loyalty. The results are consistent with previous studies that highlight the importance of transparency, reliability, and strong data protection in digital financial services (Kotler & Keller, 2016; Rinova, 2025).

Normality Test

Table 1. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		83
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.26454011
Most Extreme Differences	Absolute	.096
	Positive	.089
	Negative	-.096
Test Statistic		.096
Asymp. Sig. (2-tailed)		.056[c]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

a. P-P Plot of Standardized Residuals: The data points in the P-P plot are closely positioned along the diagonal line, suggesting that the residuals exhibit a normal distribution.

b. Histogram of Residuals: The histogram presents a bell-shaped curve, reinforcing the assumption of normality. The residuals are symmetrically distributed around the mean, indicating no substantial deviation from normality.

Multicollinearity Test

Table 2. Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.376	1.745		1.935	.057		
	Kepercayaan	.467	.118	.434	3.961	.000	.331	3.023
	Keamanan	.401	.102	.432	3.937	.000	.331	3.023

a. Dependent Variable: Kepuasan Konsumen

a. Both independent variables, Trust (X^1) and Security (X^2) have VIF values below 10 and Tolerance values above 0.1.
b. This indicates the absence of multicollinearity between the independent variables.
c. The regression model is considered reliable and valid for interpretation.

Heteroscedasticity Test

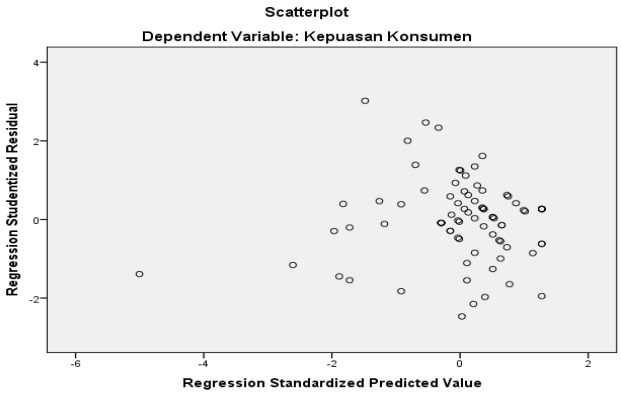

Figure 1. Heteroscedasticity Test Result
Source: Data Processing Result, 2024

The heteroscedasticity test was conducted using a scatterplot of standardized residuals versus predicted values. The results revealed a random distribution of residuals without any noticeable patterns, such as clustering or funnel shapes. This suggests that the variance of the residuals remains constant across different levels of predicted values. Based on visual inspection, there is no indication of heteroscedasticity in the regression model (Larangeira, 2024). Consequently, the assumption of homoscedasticity is met, confirming the model's suitability for further analysis.

Multiple Linear Regression

The multiple linear regression model analyzes the relationship between the dependent variable (Y) and the independent variables (X1, X2, X3, X4).

Table 3. Multiple Linear Regression Analysis Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.376	1.745		1.935	.057		
	Kepercayaan	.467	.118	.434	3.961	.000	.331	3.023
	Keamanan	.401	.102	.432	3.937	.000	.331	3.023

a. Dependent Variable: Kepuasan Konsumen

Sources: Data Processing Results, 2024

Regression Equation:

$$Y = 3.376 + 0.467X_1 + 0.401X_2 + \varepsilon$$

1. The constant (α) = 3.376 Constant value indicates the level of consumer satisfaction when X^1 and X^2 are zero.
2. $\beta 1(X1) = 0.467$ Regression coefficient for trust, indicating that a one-unit increase in trust leads to a 0.467-unit increase in consumer satisfaction, assuming other variables are constant.
3. $\beta 2(X2) = 0.401$ Regression coefficient for security, indicating that a one-unit increase in security leads to a 0.401-unit increase in consumer satisfaction, assuming other variables are constant.

Partial Test (t-Test)

Table 4. Result Of t-Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.376	1.745		1.935	.057		
	Kepercayaan	.467	.118	.434	3.961	.000	.331	3.023
	Keamanan	.401	.102	.432	3.937	.000	.331	3.023

a. Dependent Variable: Kepuasan Konsumen

Sources: Data Processing Results, 2024

1. H1 (First Hypothesis)

The t-test showed that trust (X1) had a t-count value of 3.961 with a significance level (p) of 0.000. Since t count>t table(1.990) and p<0.05, the null hypothesis (H0) was rejected, and the alternative hypothesis (H1) was accepted. This indicates that trust has a **positive and significant effect** on consumer satisfaction. An increase in trust, as reflected by sincerity, ability, and integrity, contributes significantly to higher consumer satisfaction with the Dana E-wallet.

2. H2 (Second Hypothesis)

The t-test results for security (X2) revealed a t-count value of 3.937 and a significance level (p) of 0.001. Since t count>t table (1.990) and p<0.05, the null hypothesis (H0) was rejected, and the

alternative hypothesis (H2) was accepted. This demonstrates that security has a **positive and significant effect** on consumer satisfaction. Enhanced security measures, such as robust data protection and safe transaction processes, improve consumer satisfaction.

Simultaneous Test (F Test)

Table 5. F Test Result

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	901.131	2	450.565	85.718	.000[b]
	Residual	420.508	80	5.256		
	Total	1321.639	82			

a. Dependent Variable: Kepuasan Konsumen

b. Predictors: (Constant), Keamanan, Kepercayaan

Sources: Data Processing Results, 2024

This indicates that trust and security collectively have a positive and significant simultaneous effect on consumer satisfaction. The adjusted R^2 value of 0.682 suggests that 68.2% of the variation in consumer satisfaction can be explained by trust and security together. In comparison, the remaining 31.8% is influenced by other factors not included in this study (Fatimah, 2024).

These findings emphasize the importance of simultaneously addressing trust and security to enhance consumer satisfaction, particularly in the context of the Dana E-wallet.

Coefficient Of Determination

Table 6. Results Of Coefficient Of Determination Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.826[a]	.682	.674	2.293

a. Predictors: (Constant), Keamanan, Kepercayaan

b. Dependent Variable: Kepuasan Konsumen

Sources: Data Processing Results, 2024

The coefficient of determination (R2) Analysis revealed an adjusted (R) value of 0.682. This indicates that 68.2% of the variation in consumer satisfaction (Y) can be explained by the independent variables trust (X1) and security (X2). The remaining 31.8% is attributed to other factors not included in this study. The high (R2) value suggests that the regression model effectively explains the relationship between the variables (Lim, 2024).

Discussion

The study's findings indicate that trust (X1) and security (X2) have a significant and positive impact on consumer satisfaction (Y) in the context of the Dana E-wallet. These results are consistent with previous research highlighting the essential role of trust and security in improving user satisfaction with digital payment services (Kotler & Keller, 2016; Tjiptono, 2019).

Trust and Consumer Satisfaction (X1 → Y)

Trust was found to have a significant positive effect on consumer satisfaction (t = 3.961, p = 0.000). This finding underscores that users' perceptions of sincerity, competence, and integrity play a crucial role in shaping their satisfaction. When users believe that the platform operates transparently and dependably, they are more likely to conduct repeated transactions. These results align with Rinova (2025), who highlighted trust as a key factor in fostering consumer loyalty within the digital payment ecosystem.

Security and Consumer Satisfaction (X2→ Y)

Security also had a significant positive impact on consumer satisfaction (t = 3.937, p = 0.000). Critical factors such as data protection and transaction safety were identified as essential contributors. Consumers prioritize platforms that safeguard their personal information and provide secure transactions. These findings align with Darmawan and Putra (2022), who emphasized that perceived security plays a key role in consumers' willingness to adopt digital payment technologies.

Simultaneous Effect of Trust and Security (X1 + X2 → Y)

The F-test results (F = 85.718, p = 0.000) demonstrate that trust and security together explain a significant portion of consumer satisfaction. The adjusted R^2 value of 0.682 indicates that these variables account for 68.2% of the variation in satisfaction. This highlights the importance of focusing on both factors simultaneously to enhance the user experience and foster loyalty.

Practical Implications

The results suggest that strategies should prioritize improving transparency, reliability, and strong security measures for e-wallet providers like Dana. Clear communication of data protection policies and a demonstrated commitment to secure transactions can enhance consumer trust and satisfaction. Furthermore, educating users about the platform's security features could alleviate concerns and boost confidence in the application.

Theoretical Contributions

This study contributes to the expanding body of literature on consumer behavior within the digital payment sector. It reinforces the significance of trust and security as essential drivers of satisfaction and underscores their combined role in encouraging user engagement with e-wallets.

Conclusion

This study concludes that trust (X1) and security (X2) have a significant and positive impact on consumer satisfaction (Y) when using the Dana E-wallet. Trust is crucial for building user confidence through sincerity, capability, and integrity, while security contributes to satisfaction by ensuring data protection and safe transactions. Together, trust and security explain 68.2% of the variation in consumer satisfaction, underscoring their combined role in shaping user experiences.

These findings suggest that e-wallet providers like Dana should prioritize transparency, reliability, and strong security measures to enhance user trust and satisfaction. Additionally, educating users about the platform's security features and consistently delivering quality service can further strengthen user confidence and loyalty.

Future research could investigate other factors influencing consumer satisfaction, such as user interface design, promotional strategies, and additional features, to offer a more complete understanding of the dynamics in the e-wallet industry.

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