

ANALYSIS OF E-WALLET USAGE ON STUDENT FINANCIAL EXPENDITURE: AN EMPIRICAL STUDY AT UNIVERSITAS DHARMAWANGSA MEDAN

Nurul Hazura¹, Lukman Hakim Siregar², Nurhayati³

^{1,2,3} Accounting Department, Universitas Dharmawangsa

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*Correspondence

Address:

nurulhazura22@gmail.com

Abstract:

This study aims to examine and analyze the effect of electronic wallet (e-wallet) usage on student financial expenditure at Universitas Dharmawangsa, Medan. Utilizing a quantitative associative design, data were collected via structured questionnaires distributed to a sample of 100 students selected through purposive sampling and calculated using the Slovin formula. Instrument validation confirmed excellent construct validity across all 25 items and superior reliability (Cronbach's Alpha = 0.968 for e-wallet usage; 0.957 for financial expenditure). Linear regression diagnostics satisfied classical assumptions, including normal P-P plot residual distribution, non-multicollinearity (Tolerance = 1.000, VIF = 1.000), homoscedasticity, and non-autocorrelation (Durbin-Watson = 1.901). Empirical results demonstrate that e-wallet usage exerts a positive and statistically significant effect on student financial expenditure ($t\text{-count} = 7.107 > t\text{-table} = 1.984$; $\text{sig.} < 0.001$; $F = 50.503$, $\text{sig.} < 0.001$). The estimated regression equation, $Y = 6.701 + 0.373X$, indicates that each unit increase in e-wallet utilization leads to a 0.373-unit increase in financial spending. The coefficient of determination ($R^2 = 0.340$; Adjusted $R^2 = 0.333$) reveals that 34.0% of the variance in financial expenditure is explained by e-wallet usage, while the remaining 66.0% is governed by external factors such as allowance levels, peer influence, and personal financial literacy. These findings substantiate Behavioral Finance and Technology Acceptance theories, emphasizing that digital payment convenience and aggressive promotional stimuli trigger frictionless, repetitive, and impulsive micro-transactions among university students.

1. INTRODUCTION

The rapid proliferation of digital financial technology (Fintech) has fundamentally restructured modern transaction mechanisms, transitioning commerce from physical fiat

currency to seamless digital payment ecosystems. Among these innovations, electronic wallets (e-wallets)—such as DANA, OVO, GoPay, and ShopeePay—have emerged as primary transaction mediums in emerging economies like Indonesia (Bank Indonesia, 2023). Supported by national initiatives advancing a cashless society and the widespread adoption of Quick Response Code Indonesian Standard (QRIS), e-wallets provide unprecedented transaction speed, operational ease, multi-merchant connectivity, and continuous promotional incentives such as cashback rewards, discount vouchers, and free shipping allowances.

University students represent one of the most technologically receptive and digitally active demographics. At Universitas Dharmawangsa in Medan, comprising an active student body of over 10,800 students, digital wallets have become integral to daily financial routines, encompassing academic tuition fees, routine meals, on-demand transportation, telecommunication recharges, and e-commerce shopping. However, the psychological ease and operational frictionless nature of digital payments introduce notable behavioral changes. Unlike physical cash transactions, where the tangible outflow of banknotes triggers an immediate cognitive 'pain of paying', digital transactions mask the perception of monetary depletion. Consequently, students face heightened vulnerability to impulsive purchasing, frequent micro-transactions, and uncontrolled spending escalations.

Prior empirical research has examined various dimensions of e-wallet adoption. Nawawi (2020) and Anjani et al. (2022) highlighted promotional features, user interface simplicity, and platform security as key drivers of e-wallet adoption. Achir & Kusumaningrum (2021) observed that non-cash payment instruments elevate student consumption expenditure. Nonetheless, research gaps remain regarding empirical verification of direct causal relationships between comprehensive e-wallet utilization dimensions and total financial expenditure specifically within private university environments in North Sumatra. To address this gap, this study investigates the empirical impact of e-wallet usage on student financial expenditure at Universitas Dharmawangsa Medan.

2. RESEARCH METHOD

2.1 Research Design, Population, and Sampling

This study adopts a quantitative explanatory associative methodology. The target population comprises active undergraduate students at Universitas Dharmawangsa who utilize e-wallet platforms for daily transactions. Sampling was conducted via purposive sampling focusing on Faculty of Economics and Business students with at least three months of continuous e-wallet experience. Applying the Slovin formula with an error tolerance of $e = 10\%$, a representative sample size of $N = 100$ respondents was established.

Table 1. Demographic Profile and Usage Characteristics of Respondents (N = 100)

Demographic Dimension	Category / Group	Frequency (n)	Percentage (%)

Gender	Female	64	64.0%
Gender	Male	36	36.0%
Age Group	< 20 years old	14	14.0%
Age Group	20 – 22 years old	60	60.0%
Age Group	> 22 years old	26	26.0%
Primary E-Wallet Platform	DANA	45	45.0%
Primary E-Wallet Platform	OVO	25	25.0%
Primary E-Wallet Platform	GoPay	18	18.0%
Primary E-Wallet Platform	ShopeePay	12	12.0%
Duration of E-Wallet Adoption	< 6 months	9	9.0%
Duration of E-Wallet Adoption	6 – 12 months	22	22.0%
Duration of E-Wallet Adoption	> 1 year	69	69.0%

2.2 Operational Definitions and Measurement Scales

1. E-Wallet Usage (Independent Variable, X): Defined as the intensity, habit, and diversity of digital wallet usage across 16 items measuring transaction convenience, promotional sensitivity, app security, and user comfort on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

2. Student Financial Expenditure (Dependent Variable, Y): Defined as the expansion of monetary spending, purchase frequency, and impulse purchases across 9 items on a 5-point Likert scale.

2.3 Statistical Analysis and Testing Procedure

Data processing was executed using IBM SPSS Statistics 30.0 through structured analytical stages: (1) Instrument testing via Pearson Product-Moment correlation validity and Cronbach's Alpha reliability; (2) Classical assumption tests including Kolmogorov-Smirnov and Normal P-P Plot normality, Tolerance/VIF multicollinearity, Glejser scatterplot homoscedasticity, and Durbin-Watson autocorrelation; (3) Simple Linear Regression ($Y = a + bX + e$); and (4) Hypothesis testing via partial t-test, ANOVA F-test, and Coefficient of Determination (R^2).

3. DISCUSSION

3.1 Instrument Validity and Reliability Analysis

Validity testing against the critical r-table value ($r_{\text{table}} = 0.1966$ for $n = 100$, $\alpha = 0.05$) confirmed that all 16 items for E-Wallet Usage (X1.1–X1.16) exhibited correlation coefficients ranging between $r = 0.724$ and $r = 0.871$ ($p < 0.001$). For Financial Expenditure (Y1.1–Y1.9), all 9 items exhibited correlation coefficients ranging between $r = 0.808$ and $r = 0.904$ ($p < 0.001$). Reliability analysis revealed exceptional internal consistency, with Cronbach's Alpha of 0.968 for E-Wallet Usage and 0.957 for Financial Expenditure, substantially exceeding the 0.60 threshold and satisfying the 0.90 excellence benchmark (Sekaran & Bougie, 2016).

Table 2. Measurement Instrument Validity Range and Reliability Results

Variable Construct	Item Count	Validity Range (r-count)	Cronbach's Alpha	Reliability Status
E-Wallet Usage (X)	16 items	0.724 – 0.871 (All $p < 0.001$)	0.968	Excellent Reliability ($\alpha \geq 0.90$)
Financial Expenditure (Y)	9 items	0.808 – 0.904 (All $p < 0.001$)	0.957	Excellent Reliability ($\alpha \geq 0.90$)

3.2 Classical Assumption Diagnostics

1. Normality Test: The Normal P-P Plot demonstrated that standardized residual data points tightly hugged and followed the 45-degree diagonal axis. While the sample-sensitive Kolmogorov-Smirnov statistic yielded $K-S = 0.104$ ($p = 0.009$), visual diagnostic assessment and Central Limit Theorem robustness for $n = 100$ confirm adequate residual normality (Field, 2018; Hair et al., 2019).

2. Multicollinearity Test: Collinearity statistics yielded Tolerance = 1.000 (> 0.10) and VIF = 1.000 (< 10.00), verifying complete independence.

3. Heteroscedasticity Test: Standardized residual scatterplots (ZPRED vs. SRESID) displayed random point dispersion across the horizontal zero-line without discernible patterns, confirming homoscedasticity.

4. Autocorrelation Test: The Durbin-Watson statistic of 1.901 (Model Summary) fell precisely within the optimal non-autocorrelation range surrounding 2.00.

3.3 Regression Estimation and Hypothesis Testing

The estimated simple linear regression coefficients, partial t-test, ANOVA F-test, and coefficient of determination are summarized in Table 3.

Table 3. Simple Linear Regression Coefficients, t-Test, F-Test, and Model Summary

Model Parameter	Unstd. Coeff (B)	Std. Error	Beta (β)	t-count	Sig.	Test Benchmark
(Constant)	6.701	3.180	-	2.107	0.038	$p < 0.05$
E-Wallet Usage (X)	0.373	0.053	0.583	7.107	< 0.001	t-table = 1.984 ($p < 0.05$)

From Table 3, the empirical regression equation is formulated as:

$$Y = 6.701 + 0.373 X + e$$

The regression constant of 6.701 indicates baseline student expenditure when e-wallet usage is zero. The regression slope coefficient ($b = 0.373$) reveals that for every one-unit increase in e-wallet usage, student financial expenditure increases by 0.373 units ($p < 0.001$).

Hypothesis Testing and Goodness-of-Fit: In the partial t-test ($df = 98$, $\alpha = 0.05$), the t-count of 7.107 markedly exceeds the critical t-table of 1.984 ($p < 0.001$), rejecting H_0 and confirming H_1 . The ANOVA F-test yielded F-count = 50.503 $>$ F-table = 3.94 ($p < 0.001$), verifying overall model fitness. The coefficient of determination ($R^2 = 0.340$, Adjusted $R^2 = 0.333$, Pearson $R = 0.583$) indicates that 34.0% of the variance in student financial expenditure is directly explained by e-wallet usage, while 66.0% is attributable to unmodeled external factors such as parental allowance, peer lifestyle, and general living costs.

3.4 Discussion

The empirical findings provide compelling evidence that e-wallet usage significantly amplifies financial expenditure among university students. This phenomenon is rooted in Behavioral Finance mechanisms. Digital wallets eliminate physical cash exchanges, reducing cognitive friction and perceptual pain during payment execution. Features such as seamless QRIS scanning, instant one-click checkouts, and promotional triggers (cashback points, flash-sale discounts, free shipping) encourage repetitive and impulsive micro-transactions.

These findings align with prior research by Achir & Kusumaningrum (2021) and Anjani et al. (2022), which observed that electronic transaction convenience elevates young adult

consumption levels. The results also substantiate TAM premises (Davis, 1989; Marey & Purwanto, 2020), demonstrating that high perceived ease of use and perceived usefulness translate directly into intensified transaction volume and enlarged financial outlays.

3 CONCLUSION

1. E-wallet adoption among Universitas Dharmawangsa students is highly pervasive, predominantly utilizing DANA (45%), OVO (25%), GoPay (18%), and ShopeePay (12%), with over 69% possessing more than one year of active usage.

2. E-wallet usage exerts a positive and statistically significant effect on student financial expenditure ($t\text{-count} = 7.107$, $p < 0.001$; $F\text{-count} = 50.503$, $p < 0.001$).

3. The empirical regression model ($Y = 6.701 + 0.373X$) explains 34.0% of expenditure variance ($R^2 = 0.340$), demonstrating that digital payment convenience and promotional incentives substantially drive student spending.

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