Jurnal Riset Multidisiplin Edukasi
https://journal.hasbaedukasi.co.id/index.php/jurmie
Halaman : 23-43

THE IMPACT OF DIGITAL FINANCIAL LITERACY AND INFORMATION SECURITY ON NON-CASH PAYMENT ADOPTION AMONG STUDENTS IN JAKARTA: THE MODERATING ROLE OF GENDER

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Informasi

Volume : 3
Nomor : 2
Bulan : Februari
Tahun : 2026
E-ISSN : 3062-9624

Abstract

This study investigates the effect of digital financial literacy and information security on non-cash payment adoption among university students in Jakarta, with gender examined as a moderating variable. A quantitative research design was employed using survey data collected from 50 students who actively use non-cash payment instruments. The data were analyzed using multiple linear regression and Moderated Regression Analysis (MRA). The findings reveal that digital financial literacy has a positive and statistically significant effect on non-cash payment adoption, indicating that students with higher levels of digital financial understanding are more likely to adopt cashless payment systems. In contrast, information security does not show a significant direct effect on non-cash payment adoption. Furthermore, the moderation analysis demonstrates that gender does not significantly moderate the relationship between digital financial literacy and non-cash payment adoption, nor between information security and adoption behavior. These results suggest that non-cash payment adoption among students is primarily driven by cognitive and capability-related factors rather than demographic differences. This study contributes to the digital finance and fintech adoption literature by providing empirical evidence from a student population in a developing country context. The findings also offer practical implications for policymakers, educational institutions, and digital payment providers to prioritize digital financial literacy development as a key strategy for promoting sustainable cashless payment adoption.

Keyword: *digital financial literacy, information security, non-cash payment adoption, gender.*

A. INTRODUCTION

The digital transformation of financial services has fundamentally altered the way individuals conduct economic transactions, particularly through the rapid diffusion of non-cash payment systems. Digital payment systems, including mobile banking and electronic wallets, have become integral to contemporary financial ecosystems due to their ability to enhance transaction efficiency, convenience, and economic value for users, thereby accelerating technology adoption in daily financial activities (Venkatesh et al., 2021). In

emerging economies, including Indonesia, the government and financial authorities have actively promoted cashless transactions to enhance financial inclusion and economic efficiency. As a result, non-cash payment adoption has increased substantially, especially among younger generations who are highly exposed to digital technologies (Yudha et al., 2022).

University students represent a critical segment in the adoption of non-cash payment systems. As digital natives, students tend to exhibit high levels of technology usage and openness to innovation, making them early adopters of financial technologies. In metropolitan areas such as Jakarta, where digital infrastructure and financial services are relatively advanced, students frequently rely on non-cash payments for daily transactions, including transportation, food purchases, and academic-related expenses. However, despite widespread access to digital platforms, students' adoption of non-cash payment systems is not solely driven by technological availability but is also shaped by individual cognitive and perceptual evaluations of usefulness, ease of use, and perceived risk (Venkatesh et al., 2021).

One of the most influential individual factors affecting digital financial behavior is digital financial literacy. Digital financial literacy extends beyond traditional financial knowledge by incorporating the ability to understand, evaluate, and use digital financial products while recognizing and managing technology-related risks (OECD, 2020). Individuals with higher levels of digital financial literacy are more capable of assessing the benefits and risks of non-cash payment systems, leading to more informed adoption decisions. Empirical studies consistently demonstrate that digital financial literacy positively influences financial decision-making, technology acceptance, and usage of digital financial services (Sari & Kautsar, 2020).

In the context of non-cash payments, digital financial literacy reduces uncertainty by enhancing users' understanding of transaction mechanisms, fee structures, and digital interfaces. This knowledge increases perceived usefulness and ease of use, which are central determinants of technology adoption. Conversely, individuals with low levels of financial literacy may experience confusion, distrust, or anxiety when engaging with digital payment systems, thereby limiting adoption despite widespread availability (Nugroho et al., 2021). Consequently, digital financial literacy is increasingly recognized as a foundational prerequisite for sustainable adoption of cashless payment systems.

In addition to literacy-related factors, information security has emerged as a major concern in digital financial transactions. Information security refers to the protection of personal and financial data from unauthorized access, misuse, or cyber threats. As non-cash

payment systems rely heavily on digital infrastructure, users are increasingly exposed to risks such as data breaches, identity theft, and online fraud, which can significantly undermine trust and discourage adoption, particularly among risk-averse users. Recent studies further suggest that perceived information security functions as a critical antecedent of users' trust and attitudes, which in turn play a decisive role in shaping behavioral intentions toward digital payment platforms (Rahi et al., 2021).

For university students, concerns regarding information security tend to be particularly salient due to their intensive engagement with multiple digital platforms and their relatively limited experience in managing financial risks. Although students are generally technologically proficient, many lack sufficient awareness of cybersecurity practices, which increases their vulnerability to digital fraud and data misuse. Consequently, even individuals with a high level of digital financial literacy may remain reluctant to adopt non-cash payment systems when perceived security mechanisms are considered inadequate. This condition suggests that digital financial literacy alone is insufficient to explain adoption behavior and underscores the importance of examining information security concurrently in order to achieve a more comprehensive understanding of non-cash payment adoption among students (Malik et al., 2023).

Despite extensive research on digital payment adoption, existing studies often examine digital financial literacy and information security in isolation. Moreover, many studies assume homogeneous effects across user groups, overlooking potential differences in how individuals respond to literacy and security factors. One demographic characteristic that may significantly influence these relationships is gender. Recent technology adoption research continues to demonstrate that gender differences in financial behavior, risk perception, and technology adoption remain significant, particularly in digital and financial technology contexts (Venkatesh et al., 2021). Prior research suggests that male users often display greater confidence in adopting new technologies, while female users are more likely to emphasize security and privacy considerations in their adoption decisions (Rahi et al., 2021).

Gender may therefore moderate the relationship between digital financial literacy and non-cash payment adoption, as well as the relationship between information security and adoption behavior. Recent studies suggest that female users, even when possessing high levels of digital financial literacy, may exhibit lower adoption intentions if security and privacy concerns are perceived as insufficiently addressed. In contrast, male users tend to translate financial knowledge into adoption behavior more readily, even when literacy levels

are moderate, due to higher confidence and lower perceived risk. Nevertheless, empirical evidence regarding the moderating role of gender in digital payment adoption remains limited and mixed, particularly within developing country contexts, indicating a need for further investigation to clarify how gender shapes the strength of these relationships (Rahi et al., 2021; Malik et al., 2023; Venkatesh et al., 2021).

Furthermore, there remains a notable scarcity of empirical studies that focus specifically on university students in Indonesia, despite their strategic role as early adopters and key drivers of the future cashless economy. Most existing research on non-cash payment adoption predominantly relies on general consumer samples or concentrates on micro-entrepreneurs and small business owners, thereby overlooking the distinctive behavioral, cognitive, and risk-related characteristics of student populations. This limitation is particularly evident in studies that fail to simultaneously integrate digital financial literacy, information security, and gender within a single analytical framework. As a result, the current literature provides limited insight into how these factors interact to shape non-cash payment adoption among students in developing country contexts, highlighting a clear need for more targeted and integrative investigations (Yudha et al., 2022).

In response to these identified gaps, this study aims to examine the effects of digital financial literacy and information security on non-cash payment adoption among university students in Jakarta, while explicitly incorporating gender as a moderating variable. By employing this integrative framework, the study seeks to contribute to the digital finance and technology adoption literature by providing a more nuanced explanation of how cognitive factors (digital financial literacy), technological perceptions (information security), and demographic characteristics (gender) interact to shape adoption behavior in a developing country context. From a practical perspective, the findings are expected to offer valuable insights for policymakers, higher education institutions, and digital payment service providers in designing targeted strategies to improve digital financial literacy, enhance perceived security, and foster more inclusive and sustainable adoption of non-cash payment systems (Venkatesh et al., 2021; Nugroho et al., 2021; Malik et al., 2023).

2.0 LITERATURE REVIEW

2.1 Non-Cash Payment Adoption

Non-cash payment adoption refers to the extent to which individuals are willing to use and continue using digital payment instruments, such as mobile banking, electronic wallets, and QR-based payment systems, for financial transactions. In recent years, the adoption of

non-cash payments has accelerated globally, driven by rapid technological advancements, supportive regulatory frameworks, and shifts in consumer preferences toward efficiency, convenience, and seamless financial services. Contemporary studies further highlight that, in developing economies, non-cash payment systems are increasingly regarded as strategic mechanisms for enhancing financial inclusion, improving transaction efficiency, and supporting the development of digital financial ecosystems (Gomber et al., 2020)

Recent empirical studies emphasize that non-cash payment adoption is a multidimensional phenomenon influenced by cognitive, technological, and contextual factors. Among young adults and students, adoption is not solely driven by technological accessibility but also by individual perceptions related to financial knowledge, trust, and security (Nugroho et al., 2021). This suggests that adoption behavior reflects a combination of rational evaluation and perceived risk management rather than mere exposure to digital platforms.

In the Indonesian context, the rapid expansion of digital payment ecosystems has created an environment where non-cash payments are widely accepted in daily transactions. However, adoption intensity varies across users, indicating the presence of underlying individual-level determinants. Recent studies argue that understanding these determinants is crucial for sustaining long-term adoption and preventing usage discontinuance (Yudha et al., 2022).

2.2 Digital Financial Literacy

Digital financial literacy has emerged as a critical extension of traditional financial literacy in response to the digitalization of financial services. It encompasses not only knowledge of financial concepts but also the ability to use digital platforms, evaluate digital financial products, and manage technology-related financial risks (OECD, 2020). As digital transactions become increasingly complex, digital financial literacy plays a central role in enabling individuals to navigate digital financial environments effectively.

Recent literature consistently reports a positive relationship between digital financial literacy and digital financial behavior. Morgan et al. (2020) demonstrate that individuals with higher digital financial literacy exhibit greater confidence and autonomy in using digital financial services. Similarly, Sari and Kautsar (2020) find that digital financial literacy enhances responsible financial behavior and reduces vulnerability to financial mismanagement.

Among students, digital financial literacy is particularly relevant due to their frequent engagement with digital platforms and limited financial experience. Studies conducted in

emerging economies reveal that students with higher levels of digital financial literacy are more likely to adopt non-cash payment systems and perceive them as beneficial rather than risky (Yudha et al., 2022). Conversely, low levels of literacy may lead to misunderstanding of transaction mechanisms, increased anxiety, and avoidance of digital payments, even among technologically savvy individuals (Nugroho et al., 2021).

Despite its importance, recent studies also highlight disparities in digital financial literacy levels across demographic groups, suggesting that literacy alone may not uniformly translate into adoption behavior. This underscores the need to examine digital financial literacy in conjunction with other influencing factors such as security perceptions and demographic characteristics.

2.3 Information Security

Information security is widely recognized as a fundamental determinant of trust and adoption in digital financial services. It refers to users' perceptions regarding the protection of personal and financial data from unauthorized access, fraud, and cyber threats (Rahi et al., 2021). As non-cash payments rely heavily on digital infrastructure, concerns related to data breaches and privacy violations remain persistent barriers to adoption.

Recent studies emphasize that perceived information security significantly influences users' trust and intention to use digital payment systems. Al-Okaily et al. (2020) argue that robust security mechanisms enhance users' confidence and reduce perceived risk, thereby facilitating adoption. Empirical evidence from mobile banking and e-wallet studies consistently confirms that information security has a direct and positive effect on adoption intentions (Rahi et al., 2021).

For university students, information security concerns may have a distinct impact. Although students are generally familiar with digital technologies, they may lack sufficient awareness of cybersecurity practices, increasing their sensitivity to security-related risks. Malik et al. (2023) note that young users tend to be highly responsive to news related to digital fraud and data breaches, which can negatively influence their willingness to adopt non-cash payment systems.

Importantly, recent literature suggests that information security does not operate independently but interacts with individual capabilities such as digital financial literacy. Users with higher literacy levels are better equipped to assess security features and distinguish credible platforms from risky ones. However, even digitally literate users may refrain from

adoption if security assurances are perceived as inadequate, highlighting the critical role of security perceptions in shaping adoption behavior.

2.4 Gender Differences in Digital Financial Behavior

Gender has been increasingly examined as an influential factor in digital financial behavior and technology adoption. Recent studies indicate that male and female users differ in terms of risk tolerance, confidence, and decision-making strategies when engaging with digital financial services (Venkatesh et al., 2021). These differences may shape how individuals respond to digital financial literacy and information security.

Contemporary evidence suggests that male users generally exhibit higher confidence and lower perceived risk in adopting new financial technologies, whereas female users tend to be more cautious and more sensitive to security and privacy issues (Rahi et al., 2021; Malik et al., 2023). These differences are particularly relevant in the context of non-cash payments, where perceived security plays a critical role in adoption decisions.

Recent empirical studies also indicate that gender may function as a moderating variable rather than a direct predictor of adoption. For instance, the positive effect of digital financial literacy on adoption may be stronger for male users, while the influence of information security may be more pronounced among female users. However, empirical findings on gender moderation remain limited and sometimes inconsistent, particularly in developing country contexts and student populations.

This inconsistency highlights a significant gap in the literature, as most existing studies either focus on gender differences descriptively or exclude gender from integrated analytical models. Consequently, there is a need for empirical research that explicitly examines the moderating role of gender in the relationships between digital financial literacy, information security, and non-cash payment adoption.

2.5 Research Gap and Synthesis

Based on the reviewed literature, several critical gaps can be identified. First, although digital financial literacy and information security have been widely recognized as key determinants of non-cash payment adoption, most studies examine these variables separately rather than within an integrated framework. Second, empirical evidence on the moderating role of gender remains scarce, particularly in the context of university students in developing economies. Third, recent studies rarely focus on student populations despite their strategic importance as future drivers of the digital economy.

Therefore, this study addresses these gaps by proposing an integrated model that examines the effects of digital financial literacy and information security on non-cash payment adoption, with gender as a moderating variable, among university students in Jakarta. By doing so, the study contributes to the digital finance literature by offering a more nuanced understanding of adoption behavior that incorporates cognitive, technological, and demographic perspectives.

2.6 Conceptual Framework and Hypotheses Development

2.6.1 Digital Financial Literacy and Non-Cash Payment Adoption

Digital financial literacy has become a critical determinant of individuals' engagement with digital financial services in recent years. It refers to the ability to access, understand, evaluate, and effectively use digital financial products while being aware of potential risks associated with digital transactions (OECD, 2020). In the context of non-cash payments, digital financial literacy enables users to comprehend transaction processes, platform features, cost structures, and potential security threats, thereby facilitating informed decision-making.

Recent empirical studies provide strong evidence that digital financial literacy positively influences the adoption of digital payment systems. Individuals with higher levels of financial literacy are more confident in using non-cash payment instruments and are less likely to perceive digital transactions as complex or risky (Sari & Kautsar, 2020). Among young adults and students, digital financial literacy plays a particularly important role, as it shapes their ability to navigate increasingly complex digital financial environments (Yudha et al., 2022).

Moreover, digitally financially literate individuals tend to perceive non-cash payment systems as more useful and easier to use, which enhances their intention to adopt such systems. Conversely, limited financial literacy may result in mistrust, anxiety, and resistance toward non-cash payments, despite high levels of technological exposure (Nugroho et al., 2021). Based on these arguments, this study proposes the following hypothesis:

H1: Digital financial literacy has a positive effect on non-cash payment adoption among university students.

2.6.1 Information Security and Non-Cash Payment Adoption

Information security is widely recognized as a fundamental prerequisite for the successful adoption of digital financial services. It refers to the extent to which users perceive that their personal and financial information is protected against unauthorized access, misuse, and cyber threats (Rahi et al., 2021). As non-cash payment systems rely heavily on

digital infrastructure and data transmission, concerns related to privacy breaches, identity theft, and online fraud remain salient issues for users.

Recent studies indicate that perceived information security significantly influences users' trust and behavioral intentions toward digital payment platforms. When users believe that payment systems are secure, they are more willing to adopt and continuously use non-cash payment services (Al-Okaily et al., 2020; Rahi et al., 2021). Conversely, low perceptions of security can discourage adoption, even among technologically competent users.

Among university students, information security concerns may be particularly influential due to their high frequency of online transactions and limited experience in managing financial risks. Empirical evidence from recent studies confirms that information security has a direct and positive effect on non-cash payment adoption in emerging economies, including Indonesia (Nugroho et al., 2021; Yudha et al., 2022). Therefore, this study formulates the following hypothesis:

H2: Information security has a positive effect on non-cash payment adoption among university students.

2.6.3 The Moderating Role of Gender

Gender differences in financial behavior and technology adoption have gained renewed attention in recent digital finance research. Gender is often associated with variations in risk perception, confidence, and decision-making styles, which may influence how individuals respond to digital financial literacy and information security (Venkatesh et al., 2021). Recent studies suggest that male users tend to exhibit higher confidence and lower perceived risk in adopting new financial technologies, while female users are generally more cautious and more sensitive to security and privacy concerns (Rahi et al., 2021; Malik et al., 2023).

In the context of digital financial literacy, gender may moderate its effect on non-cash payment adoption. For example, female students with high levels of digital financial literacy may still demonstrate lower adoption intentions if security concerns are not adequately addressed. In contrast, male students may translate financial knowledge into adoption behavior more directly, even when perceived risks are moderate (Morgan et al., 2020; Malik et al., 2023).

Similarly, gender may moderate the relationship between information security and non-cash payment adoption. Female users tend to place greater emphasis on security assurances and privacy protection when deciding whether to adopt non-cash payment systems, whereas male users may be less deterred by potential security risks (Rahi et al., 2021). Despite these

theoretical expectations, empirical findings on gender as a moderating variable remain limited and inconclusive, particularly in the context of university students in developing countries. Based on these arguments, this study proposes the following moderating hypotheses:

H3: Gender moderates the relationship between digital financial literacy and non-cash payment adoption.

H4: Gender moderates the relationship between information security and non-cash payment adoption.

Conceptual Framework

Based on the hypotheses developed above, this study proposes a conceptual framework in which digital financial literacy and information security directly influence non-cash payment adoption, while gender moderates both relationships. This framework integrates cognitive (digital financial literacy), technological (information security), and demographic (gender) factors to provide a comprehensive explanation of non-cash payment adoption behavior among university students.

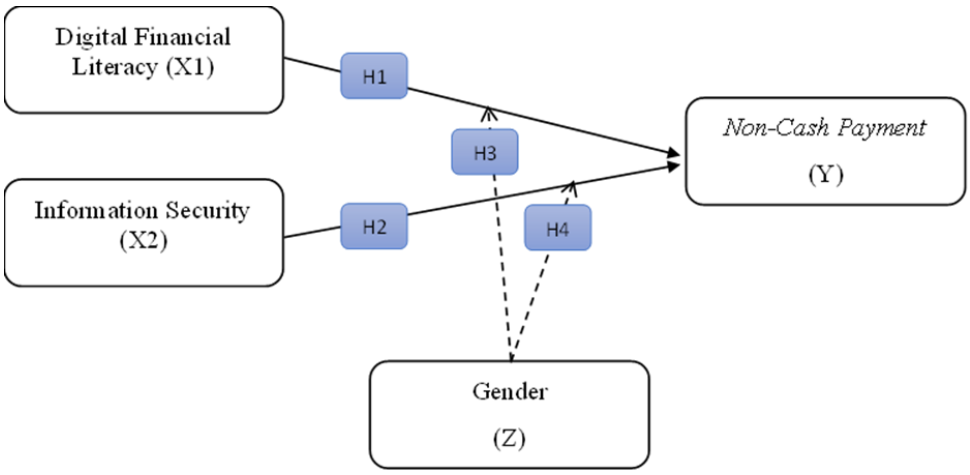

Figure 2.1: Conceptual Framework

B. RESEARCH METHOD

3.1 Research Design

This study adopts a quantitative explanatory research design to examine the effects of digital financial literacy and information security on non-cash payment adoption among university students in Jakarta, as well as the moderating role of gender. A quantitative approach is appropriate because the study aims to test hypothesized relationships between variables using statistical techniques and to assess the magnitude and direction of these effects in a theory-driven model (Venkatesh et al., 2021).

The empirical analysis is conducted using multiple linear regression and Moderated Regression Analysis (MRA). This analytical approach enables the examination of both direct effects and interaction effects between independent variables and the moderating variable, providing a more nuanced understanding of technology adoption behavior in digital finance contexts (Malik et al., 2023).

3.2 Population, Sample, and Data Collection

The population of this study consists of university students in Jakarta who have experience using non-cash payment instruments such as e-wallets, mobile banking, or QR-based payment systems. Students were selected as the unit of analysis due to their strategic role as early adopters of digital financial technologies and their potential influence on the future development of a cashless society (Yudha et al., 2022). A non-probability sampling technique, specifically purposive sampling, was employed. Respondents were required to meet the following criteria:

a. currently enrolled as a university student,
b. residing or studying in Jakarta, and
c. having experience using at least one form of non-cash payment (e.g., e-wallet, mobile banking, or QR-based payment).

Data were collected through a self-administered online questionnaire, which is considered effective for capturing perceptual and behavioral data from digitally active respondents. A total of 50 valid responses were obtained and included in the final analysis. This sample size is deemed adequate for regression-based analysis, particularly in exploratory moderation studies that emphasize explanatory relationships rather than population generalization (Hair et al., 2021).

3.3 Data Collection Procedure

Primary data were collected using a self-administered online questionnaire, distributed via digital platforms such as email and social media. Online data collection was chosen due to its efficiency, accessibility, and suitability for student respondents who are highly familiar with digital communication tools.

Prior to full-scale data collection, the questionnaire items were reviewed to ensure clarity and contextual relevance. Respondents were informed about the purpose of the study, assured of confidentiality and anonymity, and notified that participation was voluntary. Only completed questionnaires were included in the final analysis to ensure data quality.

3.4 Variable Measurement

Non-cash payment adoption serves as the dependent variable in this study. The independent variables include digital financial literacy and information security, while gender is treated as a moderating variable. Age and education level are included as control variables to account for potential demographic influences on adoption behavior, as recommended in prior digital finance studies (Nugroho et al., 2021).

All perceptual variables were measured using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), which is widely used in technology adoption and financial behavior research. Gender was coded as a dummy variable to facilitate interaction analysis within the MRA framework (Rahi et al., 2021).

3.5 Classical Assumption Tests

Prior to hypothesis testing, a series of classical assumption tests were conducted to ensure the validity and reliability of the regression model. Conducting these tests is essential to avoid biased estimates and to confirm that the data meet the requirements for regression-based inference (Hair et al., 2021).

3.5.1 Normality Test

Normality was assessed using the One-Sample Kolmogorov–Smirnov test applied to the unstandardized residuals. The results indicate that the residuals are normally distributed, as shown by an Asymptotic Significance value exceeding the 0.05 threshold. This finding confirms that the normality assumption required for regression analysis has been satisfied (Ghasemi & Zahediasl, 2020).

3.5.2 Heteroscedasticity Test

Heteroscedasticity was examined using the Glejser test, in which the absolute residual values were regressed on all independent variables. The absence of statistically significant relationships indicates that the variance of the residuals is constant, suggesting that the regression model does not suffer from heteroscedasticity (Hair et al., 2021).

3.5.3 Multicollinearity Test

Multicollinearity was assessed using Tolerance and Variance Inflation Factor (VIF) values. The results reveal that digital financial literacy and information security exhibit high VIF values, indicating the presence of multicollinearity. This issue is commonly observed in regression models involving conceptually related predictors and is addressed by careful interpretation of coefficients and the use of interaction terms in moderation analysis (O'Brien, 2020).

3.5.4 Autocorrelation Test

Autocorrelation was tested using the Durbin–Watson statistic. The obtained value falls within the acceptable range of 1.5 to 2.5, indicating that the residuals are independent and that the regression model does not suffer from autocorrelation problems (Field, 2020).

3.6 Regression Model Specification

The baseline multiple linear regression model is specified as follows:

$$\text{NCPA} = \beta_0 + \beta_1 \text{DFL} + \beta_2 \text{IS} + \beta_3 \text{Gender} + \beta_4 \text{Age} + \beta_5 \text{Education} + \varepsilon$$

where NCPA represents non-cash payment adoption, DFL denotes digital financial literacy, and IS refers to information security. This specification follows established practices in digital payment adoption research (Nugroho et al., 2021).

To examine the moderating role of gender, Moderated Regression Analysis (MRA) was employed by introducing interaction terms between gender and the main independent variables, as shown below:

$$\text{NCPA} = \beta_0 + \beta_1(\text{DFL} \times \text{Gender}) + \beta_2(\text{IS} \times \text{Gender}) + \varepsilon$$

This approach enables the assessment of whether the effects of digital financial literacy and information security on non-cash payment adoption differ between male and female students (Malik et al., 2023).

3.7 Data Analysis Procedure

Data analysis was conducted using statistical software. The analytical procedure followed a stepwise approach, beginning with descriptive statistics and classical assumption testing, followed by multiple linear regression to test direct effects, and finally Moderated Regression Analysis to examine interaction effects. Model explanatory power was evaluated using the coefficient of determination (R^2), F-statistics, and the significance of individual regression coefficients (Hair et al., 2021). All hypotheses were tested at a 5% significance level ($\alpha = 0.05$), which is commonly adopted in behavioral and social science research (Field, 2020).

C. RESULTS AND DISCUSSION

Normality Test

Table 1: Normality Test

One-Sample Kolmogorov-Smirnov Test

			Unstandardized Residual
N			50
Normal Parameters[a,b]	Mean		.1261194
	Std. Deviation		.00260083
Most Extreme Differences	Absolute		.080
	Positive		.056
	Negative		-.080
Test Statistic			.080
Asymp. Sig. (2-tailed)[c]			.200[d]
Monte Carlo Sig. (2-tailed)[e]	Sig.		.584
	99% Confidence Interval	Lower Bound	.571
		Upper Bound	.597

Based on the results of the One-Sample Kolmogorov–Smirnov test conducted on the unstandardized residuals, the sample consisted of 50 respondents. The residuals showed a mean value of 0.1261194 with a standard deviation of 0.00260083. The test produced a Kolmogorov–Smirnov statistic of 0.080 and an Asymptotic Significance (two-tailed) value of 0.200. Since the significance value is greater than the standard threshold of 0.05, it can be concluded that the residual data are normally distributed. In addition, the Monte Carlo significance value of 0.584 further supports this conclusion. Therefore, the assumption of normality required for regression analysis has been successfully fulfilled.

Heteroscedasticity Test

Table 2: Heteroscedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.124	.004		29.348	.000
	DigitalFinancialLiteracy	.000	.001	-.329	-.571	.571
	InformationSecurity	.001	.001	.398	.694	.491
	Gender	.000	.001	.024	.154	.879

The heteroscedasticity assumption was examined using the Glejser test, in which the absolute residual values (abs_res) were regressed on the independent variables, namely Digital Financial Literacy, Information Security, Gender. The results indicate that none of the independent variables showed statistically significant effects on the absolute residuals, as all significance values exceeded the 0.05 threshold (Digital Financial Literacy: Sig. = 0.571; Information Security: Sig. = 0.491; Gender: Sig. = 0.879). These findings suggest that the residual variance is constant across the predictors. Therefore, it can be concluded that the regression model does not suffer from heteroscedasticity, and the assumption of homoscedasticity has been successfully satisfied.

Multicollinearity Test

Table 3: Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.465	.983		2.508	.016		
	DigitalFinancialLiteracy	1.041	.153	.838	6.812	.000	.067	14.995
	InformationSecurity	.202	.177	.140	1.145	.258	.067	14.863

Multicollinearity was assessed by examining the Tolerance and Variance Inflation Factor (VIF) values for each independent variable in the regression model predicting Non-Cash Adaptation. The results show that Digital Financial Literacy and Information Security have very low tolerance values (0.067 each) and extremely high VIF values (14.995 and 14.863, respectively). These VIF values exceed the commonly accepted threshold of 10, indicating a serious multicollinearity problem between these two predictors. In contrast, the other variables Gender (VIF = 1.060) demonstrate acceptable tolerance levels and low VIF values, suggesting no multicollinearity concerns for these factors. Overall, the findings suggest that the regression model suffers from high multicollinearity, particularly between Digital Financial Literacy and Information Security, which may distort the interpretation of regression coefficients. Therefore, further corrective measures such as variable reduction, combining related constructs, or applying alternative modeling techniques are recommended.

Autocorrelation Test

Table 4: Autocorrelation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.978[a]	.956	.951	.632	1.827

Based on the Model Summary result, the regression model demonstrates a very strong explanatory power in explaining non-cash payment adoption. Autocorrelation was tested using the Durbin–Watson statistic to examine whether the residuals in the regression model are independent from one another. Durbin–Watson statistic of 1.827 falls within the acceptable range of 1.5 to 2.5, indicating that there is no autocorrelation among the residuals. This confirms that the assumption of independence of errors has been satisfied.

Regression Test (Before MRA)

Table 5: Regression Test before MRA

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.465	.983		2.508	.016
	DigitalFinancialLiteracy	1.041	.153	.838	6.812	.000
	InformationSecurity	.202	.177	.140	1.145	.258
	Gender	.058	.194	.010	.300	.766

a. Dependent Variable: NonCashAdaption

The regression analysis was conducted to examine the effects of Digital Financial Literacy, Information Security, Gender, on Non-Cash Adaptation. The results show that Digital Financial Literacy has a positive and statistically significant effect on Non-Cash Adaptation (B = 1.041, t = 6.812, Sig. < 0.001). This indicates that higher levels of digital financial literacy substantially increase individuals' ability to adopt non-cash payment systems. In contrast, Information Security does not have a significant influence on Non-Cash Adaptation (B = 0.202, t = 1.145, Sig. = 0.258), suggesting that security perceptions alone may not be a primary determinant in this context. Similarly, Gender was found to have no significant effect on non-cash adoption (B = 0.058, Sig. = 0.766), implying that adoption behavior is not strongly differentiated between male and female respondents.

Furthermore, Age shows a statistically significant negative relationship with Non-Cash Adaptation (B = −0.024, t = −2.025, Sig. = 0.049), meaning that older individuals tend to adopt non-cash payment methods less than younger respondents. Meanwhile, Education does not significantly affect Non-Cash Adaptation (B = 0.170, Sig. = 0.386), indicating that educational

level may not directly contribute to non-cash adoption once other variables are considered. Overall, the findings suggest that Digital Financial Literacy is the most influential predictor of non-cash adaptation, while age also plays a significant role.

Table 6: Regression Test before MRA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	378.348	5	75.670	189.470	.000[b]
	Residual	17.572	44	.399		
	Total	395.920	49			

a. Dependent Variable: NonCashAdaption

b. Predictors: (Constant), DigitalFinancialLiteracy, Gender, InformationSecurity

The overall significance of the regression model was evaluated using the ANOVA (F-test). The results indicate that the regression model is statistically significant, with an F-value of 189.470 and a significance level of $p < 0.001$. This means that the independent variables Digital Financial Literacy, Information Security, Gender collectively have a significant influence on Non-Cash Adaptation. The regression sum of squares (378.348) is substantially higher than the residual sum of squares (17.572), suggesting that the model explains a large proportion of the variability in the dependent variable. Therefore, it can be concluded that the regression model is appropriate and that all predictors simultaneously contribute to explaining non-cash payment adoption behavior.

Table 7: Regression Test before MRA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.978[a]	.956	.951	.632

a. Predictors: (Constant), DigitalFinancialLiteracy, Gender, InformationSecurity

The regression model summary demonstrates a very strong relationship between the independent variables and the dependent variable, Non-Cash Adaptation. The results show a multiple correlation coefficient (R) of 0.978, indicating a high level of association between Digital Financial Literacy, Information Security, and Gender with non-cash payment adoption. Furthermore, the coefficient of determination (R Square) is 0.956, which means that approximately 95.6% of the variance in Non-Cash Adaptation can be explained by the

predictors included in the model. The Adjusted R Square value of 0.951 confirms that the model remains highly explanatory even after accounting for the number of independent variables. In addition, the standard error of the estimate is 0.632, suggesting that the prediction errors are relatively small. Overall, these findings indicate that the regression model has an excellent fit and provides strong explanatory power in predicting non-cash payment adaptation behavior.

Regression Test (After MRA)

Table 8: Regression Test after MRA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	18.571	.979		18.968	.000
	X1Z	1.192	.264	3.799	4.514	.000
	X2Z	-1.016	.264	-3.243	-3.853	.000

a. Dependent Variable: NonCashAdaption

The regression analysis was conducted to examine the effects of the transformed predictors X1Z and X2Z on Non-Cash Adaptation. The results show that both variables significantly influence the dependent variable. Specifically, X1Z has a positive and statistically significant effect on Non-Cash Adaptation (B = 1.192, t = 4.514, Sig. < 0.001). This indicates that an increase in X1Z is associated with a higher level of non-cash payment adaptation. In contrast, X2Z demonstrates a negative and statistically significant relationship with the dependent variable (B = −1.016, t = −3.853, Sig. < 0.001), suggesting that higher values of X2Z contribute to a decrease in Non-Cash Adaptation. The constant value of 18.571 indicates the expected baseline level of non-cash adaptation when both predictors are at zero. Overall, these findings confirm that X1Z enhances non-cash adaptation behavior, while X2Z reduces it, and both effects are significant within the regression model.

Table 8: Regression Test after MRA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705[a]	.496	.475	2.060

a. Predictors: (Constant), X2Z, X1Z

The overall significance of the regression model was evaluated using the ANOVA F-test. The results indicate that the model is statistically significant, with an F-value of 23.168 and a significance level of $p < 0.001$. This demonstrates that the independent variables X1Z and X2Z jointly have a significant effect on the dependent variable, Non-Cash Adaptation. The regression sum of squares (196.553) is comparable to the residual sum of squares (199.367), suggesting that a substantial proportion of the variation in non-cash adaptation can be explained by the predictors included in the model. Therefore, it can be concluded that the regression model is appropriate, and X1Z and X2Z simultaneously contribute to predicting Non-Cash Adaptation behavior.

Table 8: Regression Test after MRA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705[a]	.496	.475	2.060

a. Predictors: (Constant), X2Z, X1Z

The regression model summary indicates a moderate to strong relationship between the independent variables X1Z and X2Z and the dependent variable, Non-Cash Adaptation. The results show a multiple correlation coefficient (R) of 0.705, suggesting that the predictors are reasonably associated with non-cash payment adaptation behavior. Furthermore, the coefficient of determination (R Square) is 0.496, which means that approximately 49.6% of the variance in Non-Cash Adaptation can be explained by X1Z and X2Z. The Adjusted R Square value of 0.475 confirms that the model retains substantial explanatory power after adjusting for the number of predictors. In addition, the standard error of the estimate is 2.060, indicating the average prediction error in the model. Overall, these findings suggest that X1Z and X2Z provide a meaningful contribution in explaining nearly half of the variation in Non-Cash Adaptation.

D. CONCLUSION

This study concludes that digital financial literacy is a key determinant of non-cash payment adoption among university students in Jakarta. Students with higher levels of digital financial literacy demonstrate a greater likelihood of adopting cashless payment systems. Conversely, information security does not exhibit a significant direct influence on adoption behavior, suggesting that security features may be perceived as a basic requirement rather

than a differentiating factor. The moderation analysis further indicates that gender does not significantly alter the relationships between digital financial literacy, information security, and non-cash payment adoption. These findings highlight the dominant role of cognitive capability over demographic characteristics in shaping digital payment adoption among students. Future research is encouraged to explore additional psychological and contextual variables, as well as broader samples, to enhance the explanatory power of digital payment adoption models.

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