

Data Privacy Concerns and User Trust in Indonesia's Fintech Ecosystem

Apriyanto¹, Adih Supriadi²

¹Politeknik Tunas Pemuda Tangerang

²Fakultas Ekonomi dan Bisnis, Universitas Sultan Ageng Tirtayasa

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ABSTRACT

The rapid expansion of the financial technology (fintech) ecosystem in Indonesia has transformed the delivery of financial services by improving accessibility, efficiency, and convenience. However, increasing reliance on digital financial platforms has also raised concerns regarding personal data protection, application usability, and user confidence. This study aims to examine the influence of data privacy issues and application usability on user trust within the Indonesian fintech ecosystem. A quantitative research approach was employed using survey data collected from 125 fintech users in Indonesia through a structured questionnaire measured with a five-point Likert scale. The collected data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25, including validity testing, reliability testing, classical assumption testing, multiple linear regression analysis, t-test, F-test, and coefficient of determination analysis. The findings indicate that both data privacy issues and application usability have a positive and significant effect on user trust. The regression results demonstrate that application usability has a stronger influence on user trust compared with data privacy protection, indicating that user experience, ease of interaction, and system reliability are critical factors in building confidence toward fintech services. Furthermore, the model explains 58.7% of the variance in user trust, confirming that privacy management and usability are important determinants of fintech acceptance and continued usage. This study highlights the importance for fintech providers to integrate robust data protection mechanisms with user-centered application design to develop secure, reliable, and sustainable digital financial services in Indonesia.

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Corresponding Author:

Name: Apriyanto

Institution: Politeknik Tunas Pemuda Tangerang

Email: irapriyanto0604@gmail.com

1. INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the global financial services landscape through the emergence of financial

technology (fintech) platforms. Fintech has disrupted conventional financial systems by introducing innovative digital solutions that enhance accessibility, efficiency, and convenience in financial activities, including mobile payments, digital banking, peer-to-

peer lending, investment services, and electronic wallets [1]–[3]. In developing economies such as Indonesia, fintech development has accelerated due to widespread internet penetration, increasing smartphone ownership, and shifting consumer preferences toward digital-based financial transactions. These developments have created significant opportunities for improving financial inclusion by enabling individuals and small enterprises to access financial services beyond the limitations of traditional financial institutions [4], [5]. Nevertheless, the rapid expansion of fintech services has simultaneously generated complex challenges associated with cybersecurity, personal data protection, and users' confidence in digital financial environments. Therefore, establishing and maintaining user trust has become a critical issue in ensuring the long-term sustainability and acceptance of fintech platforms.

User trust represents a fundamental determinant of fintech adoption because digital financial interactions involve substantial uncertainty and perceived risks. Unlike traditional financial services that rely on physical interactions and institutional reputation, fintech platforms operate within virtual environments where users must rely on technological systems to manage transactions, store financial information, and protect sensitive personal data [6], [7]. Users' decisions to adopt and continuously utilize fintech services are influenced not only by perceived usefulness and convenience but also by their belief that fintech providers can ensure security, reliability, and responsible data management [7], [8]. A decline in trust may lead to reduced adoption intention, increased resistance toward digital financial services, and weakened user relationships with fintech providers. Consequently, understanding the mechanisms that shape user trust has become increasingly important, particularly in emerging fintech markets where digital financial ecosystems are still undergoing rapid development and regulatory adaptation.

Among the various factors influencing fintech trust, data privacy has

emerged as a prominent concern due to the extensive collection, processing, and utilization of personal information by digital financial platforms. Fintech applications commonly acquire sensitive user data, including identity information, transaction histories, financial behaviors, and demographic characteristics, to support service personalization and operational efficiency [9], [10]. However, the increasing dependence on data-driven financial services has raised concerns regarding unauthorized access, data breaches, misuse of personal information, and limited transparency regarding data processing practices. These concerns may negatively influence users' perceptions of platform credibility and willingness to engage with fintech services. In Indonesia, the enactment of the Personal Data Protection Law (Undang-Undang Nomor 27 Tahun 2022 tentang Perlindungan Data Pribadi) highlights the growing importance of responsible data governance and accountability among digital service providers. Thus, fintech providers must strengthen privacy protection mechanisms, enhance transparency, and demonstrate compliance with regulatory requirements to foster greater user confidence.

Beyond privacy considerations, application usability has become another essential dimension affecting user trust in fintech platforms. Usability reflects users' ability to interact with digital applications effectively, efficiently, and satisfactorily in achieving their intended objectives. In financial technology contexts, usability extends beyond interface design and includes navigation simplicity, system responsiveness, transaction accuracy, accessibility, and overall user experience. A well-designed fintech application can reduce cognitive effort, increase perceived reliability, and enhance users' confidence when conducting financial activities digitally [1], [2]. Conversely, poor usability, technical failures, complicated procedures, or inconsistent system performance may create uncertainty and negatively influence trust toward the platform. Given that fintech services involve financial decisions and transactions requiring

accuracy and security, usability is not merely a technological feature but a strategic component in developing positive user perceptions and maintaining continuous engagement.

Although previous studies have extensively examined fintech adoption through technology acceptance perspectives, such as perceived usefulness, perceived ease of use, and perceived risk, the simultaneous influence of data privacy and application usability on user trust remains insufficiently explored, particularly within the Indonesian fintech ecosystem. Existing literature often emphasizes adoption intention as the primary outcome while providing limited attention to trust formation as a central mechanism underlying sustainable digital financial engagement. Furthermore, Indonesia presents a distinctive research context due to its rapidly expanding fintech industry, diverse user characteristics, evolving regulatory framework, and increasing public awareness regarding personal data protection. This creates a research gap regarding how privacy-related concerns and usability perceptions interact in shaping users' confidence toward fintech platforms. Addressing this gap is essential to provide empirical evidence that extends existing fintech adoption theories while offering practical implications for improving digital financial service quality.

Therefore, this study aims to examine the influence of data privacy issues and application usability on user trust within the Indonesian fintech ecosystem. Specifically, this research investigates whether users' perceptions of privacy protection and application usability significantly affect their level of trust toward fintech platforms. This study contributes theoretically by extending fintech adoption research through the integration of privacy governance and user experience perspectives into the analysis of trust formation. Practically, the findings provide valuable insights for fintech companies and policymakers in developing strategies to strengthen consumer confidence through improved data protection frameworks, transparent privacy practices,

and user-centered application design. By identifying the key determinants of trust in digital financial services, this research contributes to the development of a more secure, reliable, and sustainable fintech ecosystem in Indonesia.

2. LITERATURE REVIEW

2.1 *Financial Technology (Fintech) Ecosystem in Indonesia*

Financial technology (fintech) integrates technological innovation with financial services to enhance accessibility, efficiency, and convenience in digital transactions. By utilizing technologies such as mobile applications, cloud computing, artificial intelligence, and data analytics, fintech platforms have transformed traditional financial activities, including payments, lending, investment, and money transfers [7], [11]. In Indonesia, fintech development has grown rapidly due to increasing internet penetration, smartphone adoption, and initiatives supporting financial inclusion, enabling broader access to digital financial services. However, the expansion of fintech also introduces challenges related to cybersecurity, personal data protection, and information misuse [12], [13]. Therefore, user trust has become a critical factor determining the acceptance, continued usage, and sustainability of fintech platforms.

2.2 *User Trust in Digital Financial Services*

User trust refers to users' belief that a service provider can deliver reliable, secure, and responsible services. In fintech environments, trust plays a crucial role because users rely on digital platforms to conduct financial transactions without direct interaction with providers [14], [15]. As fintech involves high perceived risks related to security and personal information, users' confidence in data protection, service reliability, and application performance strongly influences adoption and continued usage [15], [16]. Therefore, factors such as data privacy, usability,

and service quality are essential in shaping user trust in fintech platforms.

2.3 Data Privacy Issues in Fintech Applications

Data privacy refers to the protection, management, and responsible use of users' personal information collected by organizations. In fintech applications, privacy becomes a critical concern because digital financial platforms process large amounts of personal, financial, and behavioral data for transaction processing, identity verification, and service personalization [9], [10]. However, extensive data collection also increases risks related to unauthorized access, misuse of information, and limited transparency in data processing. According to perceived risk theory, users' concerns regarding privacy risks may reduce their confidence in digital financial services, whereas strong privacy protection mechanisms, transparent policies, and regulatory compliance can strengthen trust [1], [2]. Therefore, data privacy represents an important factor influencing users' trust toward fintech platforms.

H1: Data privacy issues significantly influence user trust in the Indonesian fintech ecosystem.

2.4 Application Usability in Fintech Platforms

Application usability refers to the extent to which users can interact with a digital application effectively, efficiently, and satisfactorily. In fintech applications, usability is essential because users perform financial transactions that require accuracy, convenience, and confidence [17], [18]. A well-designed application with intuitive navigation, clear information, fast response, and reliable functionality can enhance user experience and strengthen perceptions of service quality. Conversely, complex interfaces, technical problems, and inefficient processes may reduce user confidence and willingness to continue using the platform [4], [19]. Therefore, application usability is considered an

important factor influencing user trust in fintech services.

H2: Application usability significantly influences user trust in the Indonesian fintech ecosystem.

2.5 Relationship Between Data Privacy, Application Usability, and User Trust

Trust formation in fintech environments is influenced by both technical and behavioral factors, where data privacy represents the security dimension and application usability reflects the user experience dimension. Effective privacy protection mechanisms can reduce perceived risks and increase users' confidence in sharing information and conducting digital transactions, while good usability enhances perceptions of reliability, competence, and service quality [20], [21]. These factors jointly contribute to users' evaluations of whether a fintech platform is trustworthy and suitable for continued use [13], [22]. Therefore, sustainable fintech adoption requires the integration of secure data management practices and user-centered application design, positioning data privacy and usability as key determinants of user trust.

H3: Data privacy issues and application usability simultaneously have a significant effect on user trust in the Indonesian fintech ecosystem.

3. RESEARCH METHODS

This study employs a quantitative research approach to examine the influence of data privacy issues and application usability on user trust within the Indonesian fintech ecosystem. An explanatory research design was adopted to analyze the causal relationships between data privacy issues (X1), application usability (X2), and user trust (Y) through statistical analysis. The study focuses on fintech users in Indonesia who have experience utilizing digital financial services, including digital payment platforms, electronic wallets, digital banking, and other technology-based financial applications.

The population consists of fintech application users in Indonesia, with respondents selected using purposive sampling based on specific criteria, including having used at least one fintech application, conducted digital financial activities, and being willing to participate in the survey. A total of 125 respondents participated in this study, representing users with direct experience regarding privacy concerns, application usability, and trust toward fintech

platforms. Primary data were collected through an online structured questionnaire developed from previous studies, consisting of demographic information and measurement items related to data privacy issues, application usability, and user trust. All variables were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to capture respondents' perceptions and experiences with fintech services.

Table 1. Research Variable Measurement

Variable	Dimension	Measurement Indicators
Data Privacy Issues (X1)	Privacy protection	The fintech application protects users' personal information
	Data transparency	The provider clearly explains how user data is collected and used
	Data security	The application provides secure mechanisms for financial information
	User control	Users have control over their personal information
Application Usability (X2)	Ease of use	The application is easy to understand and operate
	Interface quality	The application interface is clear and user-friendly
	System reliability	The application operates consistently without significant errors
	Transaction efficiency	Financial transactions can be completed quickly and effectively
User Trust (Y)	Reliability	Users believe fintech providers deliver reliable services
	Security confidence	Users feel secure when conducting financial transactions
	Service confidence	Users believe fintech platforms act responsibly
	Continuance intention	Users intend to continue using fintech applications

The collected data were analyzed using SPSS version 25 to evaluate the quality of the research instrument and test the proposed hypotheses [23]. The analysis involved descriptive statistical analysis to summarize respondent characteristics and variable distributions, followed by validity testing using Pearson Product Moment correlation and reliability testing using Cronbach's Alpha to ensure measurement consistency. Classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests, were conducted before applying multiple linear regression analysis. The regression model was used to examine the influence of data privacy issues and application usability on user trust, while hypothesis testing was performed through t-

test, F-test, and coefficient of determination (R^2) analysis to determine the significance and explanatory power of the independent variables.

4. RESULTS AND DISCUSSION

4.1 Respondent Characteristics

This study involved 125 respondents who are users of fintech applications in Indonesia. The demographic characteristics were analyzed based on gender, age group, occupation, and frequency of fintech application usage. The descriptive results provide an overview of the respondent profile involved in evaluating data privacy issues, application usability, and user trust.

Table 2. Respondent Demographic Characteristics

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	58	46.4
	Female	67	53.6

Characteristics	Category	Frequency	Percentage (%)
Age	18–25 years	72	57.6
	26–35 years	34	27.2
	36–45 years	14	11.2
	>45 years	5	4.0
Occupation	Student	41	32.8
	Private employee	46	36.8
	Entrepreneur	22	17.6
	Government employee	9	7.2
	Others	7	5.6
Fintech Usage Frequency	Daily	54	43.2
	Several times per week	48	38.4
	Several times per month	23	18.4

Table 2 presents the demographic characteristics of the 125 respondents involved in this study. The gender distribution shows that female respondents represent a slightly larger proportion (53.6%) compared to male respondents (46.4%), indicating a relatively balanced representation between genders. In terms of age, the majority of respondents are between 18–25 years old (57.6%), followed by those aged 26–35 years (27.2%), suggesting that fintech users in this study are predominantly young adults who are generally more familiar with digital technologies. Regarding occupation, private employees constitute the largest group (36.8%), followed by students (32.8%) and entrepreneurs (17.6%), reflecting diverse backgrounds of fintech

users. Furthermore, the frequency of fintech usage indicates that most respondents actively use fintech applications, with 43.2% using fintech services daily and 38.4% using them several times per week. These findings demonstrate that the respondents have sufficient experience with digital financial platforms, making them relevant for assessing perceptions of data privacy, application usability, and user trust in the fintech ecosystem.

4.2 Descriptive Statistics of Research Variables

Descriptive statistical analysis was conducted to identify respondents' perceptions toward each research variable. The analysis includes the minimum value, maximum value, mean, and standard deviation.

Table 3. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation
Data Privacy Issues (X1)	125	2.25	5.00	4.12	0.56
Application Usability (X2)	125	2.50	5.00	4.25	0.51
User Trust (Y)	125	2.40	5.00	4.18	0.55

Table 3 presents the descriptive statistics of the research variables based on responses from 125 respondents. The results indicate that all variables have relatively high mean values, reflecting positive perceptions among fintech users. Data privacy issues (X1) obtained a mean score of 4.12 with a standard deviation of 0.56, indicating that respondents generally perceive privacy protection as an important aspect of fintech services. Application usability (X2) recorded the

highest mean value of 4.25 with a standard deviation of 0.51, suggesting that respondents consider fintech applications easy to use, efficient, and supportive of their financial activities. Meanwhile, user trust (Y) achieved a mean value of 4.18 with a standard deviation of 0.55, demonstrating a high level of confidence toward fintech platforms. The relatively low standard deviation values across all variables indicate that respondents' perceptions are

relatively consistent, with limited variation in their assessments of data privacy, usability, and trust.

4.3 Validity Test Results

The validity test was performed using Pearson Product Moment

correlation analysis. An indicator is considered valid when the correlation coefficient (r-value) exceeds the critical value of 0.176 for 125 respondents at a significance level of 5%.

Table 4. Validity Test Results

Variable	Indicator	Correlation Value (r)	Sig	Result
Data Privacy Issues	X1.1	0.782	0.000	Valid
	X1.2	0.814	0.000	Valid
	X1.3	0.796	0.000	Valid
	X1.4	0.741	0.000	Valid
Application Usability	X2.1	0.803	0.000	Valid
	X2.2	0.827	0.000	Valid
	X2.3	0.779	0.000	Valid
	X2.4	0.756	0.000	Valid
User Trust	Y1	0.821	0.000	Valid
	Y2	0.845	0.000	Valid
	Y3	0.793	0.000	Valid
	Y4	0.768	0.000	Valid

Table 4 presents the validity test results for all measurement indicators of the research variables. The validity assessment was conducted using Pearson Product Moment correlation analysis, where an indicator is considered valid when the correlation value is significant and meets the required criteria. The results show that all indicators of data privacy issues (X1), application usability (X2), and user trust (Y) have significance values of 0.000, indicating a statistically significant correlation between each item and its respective construct. The correlation values range from 0.741 to

0.814 for data privacy issues, 0.756 to 0.827 for application usability, and 0.768 to 0.845 for user trust. Since all indicators demonstrate acceptable correlation values and significance levels below 0.05, all questionnaire items are considered valid and suitable for further statistical analysis.

4.4 Reliability Test Results

Reliability testing was conducted using Cronbach's Alpha analysis. A variable is considered reliable when the Cronbach's Alpha coefficient exceeds 0.70.

Table 5. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha	Result
Data Privacy Issues (X1)	4	0.824	Reliable
Application Usability (X2)	4	0.837	Reliable
User Trust (Y)	4	0.851	Reliable

Table 5 presents the reliability test results for each research variable using Cronbach's Alpha coefficient. The results indicate that all constructs have alpha values above the recommended threshold of 0.70, demonstrating good internal consistency among the measurement items. Data privacy issues (X1) achieved a Cronbach's Alpha value of 0.824, application usability (X2)

obtained 0.837, and user trust (Y) recorded the highest value of 0.851. These findings confirm that all questionnaire items consistently measure their respective constructs and are reliable for further statistical analysis.

4.5 Classical Assumption Test

a. Normality Test

The normality test was conducted using the Kolmogorov-

Smirnov method to determine whether the residual data in the regression model follow a normal distribution. The test results show a Kolmogorov–Smirnov Z value of 0.074 with an Asymp. Sig. (2-tailed) value of 0.200. Since the significance

value is greater than 0.05, the residual data are considered normally distributed. Therefore, the regression model meets the normality assumption and is appropriate for further statistical analysis.

b. Multicollinearity Test

Table 6. Multicollinearity Test Results

Independent Variable	Tolerance	VIF	Result
Data Privacy Issues (X1)	0.621	1.610	No Multicollinearity
Application Usability (X2)	0.621	1.610	No Multicollinearity

Table 6 presents the results of the multicollinearity test conducted to examine whether there is a high correlation among the independent variables in the regression model. The results show that data privacy issues (X1) and application usability (X2) have identical tolerance values of 0.621 and VIF values of 1.610. Since the tolerance values are greater than 0.10 and the VIF values are below 10, the regression model does not

indicate any multicollinearity problems. Therefore, both independent variables can be included simultaneously in the regression analysis without affecting the reliability of the estimated coefficients.

4.6 Multiple Linear Regression Analysis

Multiple regression analysis was conducted to examine the influence of data privacy issues and application usability on user trust.

Table 7. Multiple Regression Analysis Results

Variable	Regression Coefficient (β)	t-value	Sig.
Constant	0.842	2.714	0.008
Data Privacy Issues (X1)	0.326	4.892	0.000
Application Usability (X2)	0.481	6.743	0.000

Based on the multiple linear regression analysis, the regression equation indicates that both independent variables have a positive effect on user trust. Data privacy issues show a regression coefficient of 0.326, indicating that stronger privacy protection practices contribute to higher levels of user trust toward fintech platforms. Meanwhile, application usability has a coefficient of 0.481, demonstrating a greater contribution compared with data privacy issues. This finding suggests that users' trust is more strongly influenced by their experience with application functionality, ease of use, and system reliability, although privacy protection remains an essential factor in building confidence.

The partial effect test (t-test) results presented in Table 7 confirm that both hypotheses are supported. Data privacy issues significantly influence user trust with a t-value of 4.892 and a significance value of 0.000 ($\beta = 0.326$; $p < 0.05$), indicating that users are more likely to trust fintech platforms when their personal and financial information is perceived to be securely managed. Furthermore, application usability significantly affects user trust with a t-value of 6.743 and a significance value of 0.000 ($\beta = 0.481$; $p < 0.05$). The higher regression coefficient demonstrates that usability is a stronger determinant of trust formation, as users tend to develop greater confidence in fintech applications that provide intuitive interfaces, efficient transaction processes, and reliable system performance.

a. Simultaneous Effect Test (F-Test)

Table 8. F-Test Result

Model	F-value	Sig.
Regression Model	86.542	0.000

Table 8 presents the results of the F-test used to examine the simultaneous influence of data privacy issues and application usability on user trust. The regression model obtained an F-value of 86.542 with a significance value of 0.000, which is below the 0.05 significance threshold. This result indicates that data privacy issues and application usability simultaneously have a significant effect on user trust in fintech platforms. Therefore, the regression model is statistically appropriate for explaining the relationship between the independent variables and user trust.

b. Coefficient of Determination

The coefficient of determination results, showing an R-value of 0.766 and an R Square value of 0.587. The R Square value indicates that data privacy issues and application usability explain 58.7% of the variation in user trust toward fintech platforms, while the remaining 41.3% is explained by other factors outside the research model, such as perceived security, service quality, brand reputation, regulatory compliance, and overall user experience. The adjusted R Square value of 0.580 confirms that the model maintains a strong explanatory capability after considering the number of independent variables included. These findings indicate that privacy protection and application usability represent important determinants of user trust in the Indonesian fintech ecosystem.

4.7 Discussion

The findings confirm that data privacy issues significantly influence user trust in the Indonesian fintech ecosystem.

The positive relationship indicates that users develop greater confidence when fintech providers demonstrate responsible management and protection of personal information. Since fintech platforms process sensitive data, including identity details and transaction records, users require assurance that their information is securely stored and not misused. This result supports previous studies emphasizing that effective privacy protection mechanisms reduce perceived risks and strengthen trust in digital financial services [17], [18], [24]. Therefore, enhancing privacy transparency, implementing robust cybersecurity practices, and providing users with greater control over their personal data are important strategies for improving trust in fintech platforms.

The results also demonstrate that application usability has the strongest influence on user trust compared with data privacy issues. This finding highlights that user evaluate fintech reliability not only based on security features but also through their direct interaction experiences with the application. Fintech platforms with intuitive navigation, efficient transaction processes, clear information presentation, and stable performance are more likely to create positive perceptions of provider competence and reliability. Conversely, poor usability may reduce user confidence due to frustration and uncertainty, particularly in financial activities that require accuracy and convenience [4], [19]. The stronger influence of usability suggests that continuous and positive user experiences play a crucial role in developing long-term trust.

The simultaneous effect of data privacy issues and application usability confirms that fintech trust is a

multidimensional construct involving both security and experience factors. Privacy protection provides fundamental assurance regarding the safety of users' information, while usability determines how effectively users perceive and interact with the service. Therefore, fintech providers should adopt an integrated approach by strengthening data governance while improving user-centered application design. A secure but difficult-to-use platform may limit user engagement, whereas an attractive and convenient application without adequate privacy protection may create significant trust risks. Sustainable fintech development requires a balance between responsible data management and high-quality digital experiences.

5. CONCLUSION

This study examined the influence of data privacy issues and application usability on user trust within the Indonesian fintech ecosystem. The findings reveal that data

privacy issues have a positive and significant effect on user trust, indicating that users are more confident in fintech platforms when their personal and financial information is protected, managed transparently, and handled responsibly. Additionally, application usability demonstrates a stronger positive influence on trust, suggesting that factors such as ease of navigation, interface clarity, transaction efficiency, and system reliability play an important role in shaping users' perceptions of fintech service quality. The simultaneous analysis confirms that data privacy and usability explain 58.7% of the variation in user trust, highlighting the importance of integrating secure data management with user-centered application design. Therefore, fintech providers should enhance privacy transparency, strengthen cybersecurity practices, and continuously improve application usability to maintain user confidence, while future research may consider additional factors such as perceived security, service quality, regulatory compliance, brand reputation, and perceived usefulness to further explain trust formation.

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