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Fintech Usage, Risk Perception, and Data Privacy Concerns on Trust in Digital Financial Services in Indonesia

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ABSTRACT

This study aims to analyze the effect of fintech usage, risk perceptions, and data privacy concerns on trust in digital financial services in Indonesia. The rapid development of financial technology has increased the adoption of digital financial services; however, trust remains a crucial factor influencing user acceptance and continued usage. This research employs a quantitative approach using primary data collected from 150 respondents through structured questionnaires measured on a Likert scale. Data analysis was conducted using SPSS version 25, including validity and reliability tests, classical assumption tests, and multiple linear regression analysis. The results show that fintech usage has a positive and significant effect on trust, indicating that higher levels of usage and familiarity increase user confidence in digital financial services. Conversely, risk perception has a negative and significant effect on trust, suggesting that concerns about financial loss, system errors, and fraud reduce users' willingness to rely on fintech platforms. Similarly, data privacy concerns are found to negatively and significantly influence trust, highlighting that fears related to personal data misuse and security breaches undermine user confidence. Simultaneously, fintech usage, risk perception, and data privacy concerns significantly affect trust, with an R^2 value of 0.465, indicating that 46.5% of the variation in trust is explained by these variables. This study contributes to the literature by providing empirical evidence on the determinants of trust in digital financial services in Indonesia. The findings offer practical implications for fintech providers and policymakers to enhance user trust by improving system security, strengthening data protection measures, and increasing user awareness of fintech services.

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1. INTRODUCTION

The rapid advancement of digital technology has profoundly reshaped the global financial ecosystem, giving rise to the accelerated development of financial technology (fintech). Across emerging economies, fintech has emerged as a transformative force that redefines how financial services are accessed, delivered, and experienced [1], [2]. In Indonesia, this transformation has been particularly pronounced, driven by widespread internet penetration, increasing smartphone adoption, and progressive regulatory initiatives aimed at fostering financial inclusion [3]. Digital financial services—such as mobile banking, e-

wallets, peer-to-peer lending, and integrated payment systems—have become embedded in everyday economic activities, supporting the national agenda toward a cashless society and inclusive financial system [4], [5]. However, despite this rapid diffusion, the sustainability of fintech adoption is not solely determined by technological availability or accessibility, but critically hinges on users' trust in digital financial systems.

Trust represents a central pillar in the adoption and continued use of digital financial services, particularly within virtual environments characterized by the absence of physical interaction. Unlike traditional financial systems, fintech platforms require users to rely heavily on perceived system reliability, security, and institutional integrity [6], [7]. This reliance amplifies the role of trust as a psychological mechanism that reduces uncertainty and perceived vulnerability. In developing contexts such as Indonesia—where digital literacy levels and cybersecurity awareness remain heterogeneous—trust becomes even more crucial in shaping user behavior. Consequently, understanding the multidimensional drivers of trust in fintech is essential not only for advancing theoretical discourse but also for ensuring the long-term viability of digital financial ecosystems.

One of the key determinants influencing trust is the extent of fintech usage itself. From a behavioral perspective, repeated interaction with digital platforms enhances familiarity, perceived usefulness, and user competence, thereby reducing uncertainty and increasing confidence [5]. As users accumulate experience, they are more likely to perceive fintech systems as reliable and beneficial, reinforcing trust through experiential learning mechanisms. This perspective aligns with technology adoption theories, such as the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasize the role of perceived usefulness and behavioral intention in shaping technology acceptance [3], [8]. Nevertheless, the relationship between usage and trust remains complex, as it may be moderated or constrained by users' perceptions of risk and privacy.

Despite its potential benefits, fintech adoption is inherently accompanied by various forms of perceived risk that may undermine user trust. Financial risk, security risk, and performance risk are among the most prominent concerns that influence user decision-making in digital financial environments. The intangible and remote nature of fintech transactions often intensifies users' perceptions of uncertainty, particularly in contexts where cybercrime incidents and digital fraud are prevalent. In Indonesia, the increasing exposure to cybersecurity threats has heightened user sensitivity toward potential risks, which may lead to hesitation or resistance in adopting fintech services. Thus, risk perception functions as a critical barrier that can offset the positive effects of fintech usage on trust.

In parallel, data privacy concerns have emerged as a salient issue in the digital economy, further complicating the trust formation process. Fintech platforms inherently rely on the collection and processing of sensitive personal and financial data, raising questions about data security, transparency, and ethical data governance [9], [10]. Users' concerns regarding data misuse, unauthorized access, and inadequate regulatory protection can significantly erode trust in digital financial systems. This issue is particularly relevant in Indonesia, where data protection frameworks are still evolving and public awareness of digital privacy remains uneven. Consequently, data privacy concerns not only represent a technological challenge but also a socio-institutional issue that influences user trust and adoption behavior.

Although prior studies have explored various determinants of trust in fintech—such as perceived usefulness, ease of use, and system security—there remains a notable gap in the literature regarding the integrative examination of fintech usage, risk perception, and data privacy concerns within a unified analytical framework. Existing research tends to investigate these factors in isolation, thereby limiting a comprehensive understanding of how they interact in

shaping trust, particularly in emerging market contexts. Addressing this gap is essential to develop a more holistic and context-sensitive model of fintech trust that reflects real-world complexities.

Accordingly, this study aims to examine the simultaneous and partial effects of fintech usage, risk perception, and data privacy concerns on trust in digital financial services in Indonesia. By employing a quantitative approach based on data collected from 150 respondents and analyzed using SPSS version 25, this research seeks to provide empirical evidence on the interplay between these key variables. The study is guided by four research questions: (1) Does fintech usage significantly influence trust? (2) Does risk perception negatively affect trust? (3) Do data privacy concerns influence trust? and (4) Do these variables jointly affect trust in digital financial services?

This research contributes to the literature in several important ways. Theoretically, it advances the discourse on fintech adoption by integrating behavioral, technological, and risk-related factors into a single conceptual framework, offering a more comprehensive explanation of trust formation. Practically, the findings provide actionable insights for fintech providers, regulators, and policymakers to enhance user trust through improved security measures, stronger data protection policies, and targeted digital literacy initiatives. Ultimately, strengthening trust is a prerequisite for ensuring the sustainable growth and resilience of fintech ecosystems in Indonesia and other emerging economies.

2. LITERATURE REVIEW

2.1 Fintech and Digital Financial Services

Financial technology (fintech) refers to the integration of advanced digital technologies into financial services to enhance efficiency, accessibility, and overall user experience, encompassing a wide spectrum of innovations such as digital payments, mobile banking, peer-to-peer lending, crowdfunding, and blockchain-based financial systems [11], [12]. In the Indonesian context, fintech has emerged as a pivotal driver of financial inclusion by expanding access to financial services for unbanked and underbanked populations, supported by the rapid development of digital infrastructure, proactive regulatory frameworks, and the increasing adoption of digital consumer behavior [13], [14]. At the same time, digital financial services are defined by their ability to facilitate transactions electronically without physical interaction, offering significant advantages in terms of speed, convenience, cost efficiency, and broad accessibility. Nevertheless, the widespread adoption and sustainability of these services are fundamentally shaped by users' perceptions, particularly regarding trust, perceived risk, and security, making the understanding of user behavior a critical factor in ensuring the long-term success and resilience of fintech ecosystems.

2.2 Trust in Digital Financial Services

Trust is defined as the willingness of users to rely on a system or service based on the expectation that it will perform reliably and securely, and in the context of digital financial services, it plays a fundamental role in influencing users' decisions to adopt and continuously use fintech platforms [1], [15]. Unlike traditional financial systems that involve face-to-face interactions, digital platforms operate in a virtual environment where direct human contact is absent, thereby increasing the importance of trust as a mechanism to reduce uncertainty. Drawing on technology adoption theories such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), trust is closely associated with

perceived usefulness, ease of use, and perceived risk, which collectively shape user acceptance [16]. By minimizing perceived vulnerability and uncertainty, trust enables users to engage more confidently with digital financial services, and prior studies consistently demonstrate that higher levels of trust contribute to greater adoption rates, increased usage frequency, and stronger customer loyalty within fintech ecosystems.

2.3 Fintech Usage and Trust

Fintech usage refers to the extent to which individuals engage with digital financial services in their daily transactions, reflecting their level of familiarity, experience, and perceived benefits derived from fintech platforms. Higher levels of usage typically indicate greater user competence and confidence, which can positively influence the development of trust. From a behavioral perspective, repeated interactions with a system help reduce uncertainty and enhance perceived reliability, as users become more accustomed to its functionality and performance [1], [15], [17]. When users consistently experience positive outcomes from fintech services, they are more likely to perceive the system as effective and dependable, thereby strengthening their trust. Empirical studies further support this relationship, demonstrating that increased engagement with fintech platforms is associated with higher levels of trust and user confidence. Based on this argument, the following hypothesis is proposed:

H1: Fintech usage has a positive and significant effect on trust in digital financial services.

2.4 Risk Perception and Trust

Risk perception refers to an individual's subjective evaluation of the potential negative consequences associated with using a particular technology or service, and in the context of fintech, this includes concerns such as financial loss, data breaches, fraud, system failure, and violations of privacy, all of which can generate uncertainty and discourage users from trusting digital financial services [9], [18]. According to perceived risk theory, individuals tend to avoid actions that involve high uncertainty and potential loss, and in digital financial environments—where transactions are conducted online without direct control—these perceptions of risk can become even more pronounced [19]. Consequently, higher levels of perceived risk are typically associated with lower levels of trust, as users may feel vulnerable to potential threats and system unreliability. Empirical evidence consistently supports this relationship, showing that when users perceive fintech platforms as insecure or unreliable, their willingness to trust and adopt such services decreases significantly, highlighting the importance of effectively managing and mitigating perceived risks to foster user trust. Based on this explanation, the following hypothesis is formulated:

H2: Risk perception has a negative and significant effect on trust in digital financial services.

2.5 Data Privacy Concerns and Trust

Data privacy concerns refer to users' apprehensions regarding how their personal and financial information is collected, stored, and utilized by fintech platforms, particularly as the increasing reliance on digital systems requires users to disclose sensitive data such as identity information, banking details, and transaction histories, thereby raising issues related to unauthorized access, data misuse, and lack of transparency [19], [20]. Drawing on

privacy concern theory, individuals tend to exercise greater caution when they perceive potential threats to their personal information, and within fintech contexts, such concerns can significantly influence trust, as users may fear that their data could be exposed or improperly used. This issue becomes especially critical in countries like Indonesia, where data protection regulations are still evolving and may not fully alleviate user concerns [19], [20]. Empirical studies consistently demonstrate that higher levels of privacy concern are negatively associated with trust in digital platforms, as users who doubt the security of their data are less likely to engage with fintech services despite their potential benefits, underscoring the importance of robust data protection mechanisms and transparent privacy policies in fostering user trust. Based on this argument, the following hypothesis is proposed:

H3: Data privacy concerns have a negative and significant effect on trust in digital financial services.

2.6 Conceptual Framework

This study integrates fintech usage, risk perception, and data privacy concerns as independent variables influencing trust in digital financial services as the dependent variable, positioning trust as a critical outcome of user interaction with fintech ecosystems. Fintech usage is expected to have a positive effect on trust, as increased engagement enhances familiarity, perceived usefulness, and confidence, while risk perception and data privacy concerns are expected to exert negative effects, as they introduce uncertainty and perceived vulnerability in digital transactions. By simultaneously examining these variables, the study seeks to capture a more holistic understanding of the factors shaping trust in fintech adoption.

Several previous studies have investigated the determinants of trust in fintech adoption, primarily focusing on factors such as perceived usefulness, ease of use, security, and service quality. However, limited research has integrated fintech usage, risk perception, and data privacy concerns within a single empirical model, particularly in the Indonesian context. Moreover, existing studies tend to analyze these variables independently, which may not adequately reflect their combined and interactive effects on trust. This study addresses this gap by offering a comprehensive quantitative analysis based on empirical data from Indonesian users of digital financial services. Based on the literature review and theoretical framework, the hypotheses of this study are formulated as follows:

H1: Fintech usage has a positive and significant effect on trust in digital financial services.

H2: Risk perception has a negative and significant effect on trust in digital financial services.

H3: Data privacy concerns have a negative and significant effect on trust in digital financial services.

H4: Fintech usage, risk perception, and data privacy concerns simultaneously have a significant effect on trust in digital financial services.

3. METHODS

3.1 Research Design

This study employs a quantitative research approach with a descriptive and verificative design. The quantitative approach is used to examine the relationship between independent variables—fintech usage, risk perception, and data privacy concerns—and the dependent variable, namely trust in digital financial services. The descriptive method aims to describe the characteristics of

respondents and variables, while the verificative method is used to test the proposed hypotheses through statistical analysis. The study adopts a cross-sectional design, where data are collected at a single point in time from respondents who actively use digital financial services in Indonesia.

3.2 Population and Sample

The population of this study consists of users of digital financial services in Indonesia, including individuals who utilize mobile banking, e-wallets, and various fintech platforms in their daily transactions. Considering the large and undefined nature of this population, this study employs a non-probability sampling technique, specifically purposive sampling, to ensure that respondents meet certain relevant characteristics aligned with the research objectives.

The criteria for selecting respondents include: (1) individuals who have used fintech or digital financial services for at least the last six months, (2) individuals aged 17 years or older, and (3) individuals who have conducted at least one digital financial transaction within the past month. Based on these criteria, a total of 150 respondents were selected as the research sample, which is considered sufficient to support statistical analysis using multiple linear regression.

3.3 Data Types and Sources

This study utilizes primary data collected directly from respondents through a structured questionnaire, which is distributed online via digital platforms to reach a diverse group of fintech users across Indonesia. The data gathered include respondents' perceptions of fintech usage, perceived risks, data privacy concerns, and trust in digital financial services, as well as demographic information such as age, gender, education level, and frequency of fintech usage to provide additional descriptive insights.

3.4 Measurement of Variables

The variables in this study are measured using a Likert scale ranging from 1 to 5, where 1 indicates strongly disagree, 2 indicates disagree, 3 indicates neutral, 4 indicates agree, and 5 indicates strongly agree. This measurement approach is used to capture respondents' perceptions in a structured and quantifiable manner, enabling statistical analysis of the relationships between variables.

The operational definitions of the variables are as follows: Fintech Usage (X1) refers to the extent to which individuals use digital financial services in their daily activities, with indicators including frequency of use, ease of access, perceived usefulness, and transaction convenience; Risk Perception (X2) refers to users' perceptions of potential risks when using fintech services, including financial risk, security risk, system reliability risk, and fraud risk; Data Privacy Concerns (X3) refer to users' concerns regarding the protection and potential misuse of personal and financial data, with indicators such as data security, unauthorized access, transparency of data usage, and privacy protection policies; and Trust (Y) refers to users' confidence in digital financial services to operate reliably and securely, measured through indicators including system reliability, security assurance, credibility, and user confidence.

3.5 Instrument Testing

Before conducting hypothesis testing, the research instrument is first evaluated through validity and reliability tests to ensure the accuracy and consistency of the measurements. The validity test is performed using the Pearson Product Moment correlation, where an item is considered valid if its correlation coefficient (r-value) exceeds the critical value (r-table) at a significance level of 0.05. Meanwhile, reliability is assessed using Cronbach's Alpha, with a variable deemed reliable if it achieves a value greater than 0.70, indicating a satisfactory level of internal consistency among the measurement items.

3.6 Data Analysis Techniques

Data analysis in this study is conducted using SPSS version 25 and involves several systematic stages. The analysis begins

with descriptive analysis, which is used to describe the characteristics of respondents and summarize their responses to each research variable using mean and percentage values. This is followed by classical assumption tests to ensure the validity of the regression model, including the normality test using the Kolmogorov-Smirnov method, the multicollinearity test using the Variance Inflation Factor (VIF), and the heteroscedasticity test using the Glejser method.

Subsequently, multiple linear regression analysis is employed to examine the effect of independent variables on the dependent variable, with the model formulated as $Y=\alpha+\beta1X1+\beta2X2+\beta3X3+\varepsilon$, where Y represents trust, X1 represents fintech usage, X2 represents risk perception, X3 represents data privacy concerns, α is the constant, $\beta1,\beta2,\beta3$ are the regression coefficients, and ε is the error term. Hypothesis testing is conducted through the t-test (partial test) to assess the individual effect of each independent variable on trust and the F-test (simultaneous test) to evaluate the joint effect of all independent variables. Additionally, the coefficient of determination (R^2) is used to measure the proportion of variance in trust that can be explained by the independent variables included in the model.

4. RESULT AND DISCUSSION

4.1 Respondent Characteristics

A total of 150 respondents participated in this study. Based on demographic analysis, 54% of respondents were male and 46% were female. The majority of respondents (62%) were aged between 21–30 years, followed by 25% aged 31–40 years, and 13% above 40 years. In terms of education, 68% held a bachelor's degree, while the rest had diploma or postgraduate qualifications. Regarding fintech usage frequency, 72% of respondents reported using digital financial services more than three times per week, indicating a relatively high level of familiarity with fintech platforms.

4.2 Descriptive Statistics

The descriptive analysis provides an overview of respondents' perceptions of each variable.

Table 1. Descriptive Statistics of Variables

Variable	Mean	Std. Deviation	Category
Fintech Usage (X1)	4.12	0.56	High
Risk Perception (X2)	3.45	0.63	Moderate
Data Privacy Concerns (X3)	3.58	0.60	Moderate
Trust (Y)	3.87	0.59	High

The descriptive statistics indicate that respondents generally exhibit a high level of fintech usage (mean = 4.12), suggesting that digital financial services have been widely adopted and are frequently utilized in daily transactions, which reflects strong familiarity and perceived usefulness among users. Trust in digital financial services is also relatively high (mean = 3.87), indicating that users tend to feel confident in the reliability and security of fintech platforms. However, both risk perception (mean = 3.45) and data privacy concerns (mean = 3.58) fall within the moderate category, implying that although users actively engage with fintech services, they still maintain a certain level of concern regarding potential risks and the protection of their personal data. This pattern suggests a nuanced user behavior in which high adoption and trust coexist with ongoing caution, highlighting the importance for fintech providers to continuously address security and privacy issues to sustain and further strengthen user trust.

4.3 Validity and Reliability Test

All questionnaire items showed correlation coefficients (r-count) greater than the r-table value (0.160), indicating that all items are valid. Reliability testing using Cronbach's Alpha produced the following results:

Table 2. Reliability Test Results

Variable	Cronbach's Alpha	Threshold	Result
Fintech Usage (X1)	0.812	0.70	Reliable
Risk Perception (X2)	0.789	0.70	Reliable
Data Privacy Concerns (X3)	0.821	0.70	Reliable
Trust (Y)	0.845	0.70	Reliable

The reliability test results indicate that all variables in this study demonstrate strong internal consistency, as reflected by Cronbach's Alpha values exceeding the threshold of 0.70. Specifically, fintech usage (0.812), risk perception (0.789), data privacy concerns (0.821), and trust (0.845) are all categorized as reliable, confirming that the measurement items for each construct are consistent and dependable. Notably, the trust variable exhibits the highest reliability coefficient, suggesting that the indicators used to measure user confidence in digital financial services are particularly stable. Overall, these findings validate that the research instrument is reliable and suitable for further statistical analysis, including regression and hypothesis testing.

4.4 Classical Assumption Tests

The results of the classical assumption tests indicate that the regression model meets the required statistical criteria. The normality test using the Kolmogorov-Smirnov method shows a significance value of 0.087, which is greater than 0.05, indicating that the data are normally distributed. The multicollinearity test reveals that all variables have Variance Inflation Factor (VIF) values below 10 and tolerance values above 0.10, suggesting no multicollinearity issues among the independent variables. Additionally, the heteroscedasticity test using the Glejser method shows significance values above 0.05 for all variables, indicating the absence of heteroscedasticity. Overall, these findings confirm that the regression model satisfies the classical assumptions and is appropriate for further analysis.

4.5 Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Results

Variable	Coefficient (β)	t-value	Sig.
Constant	1.215	3.102	0.002
Fintech Usage (X1)	0.438	5.876	0.000
Risk Perception (X2)	-0.276	-3.954	0.000
Data Privacy Concerns (X3)	-0.193	-2.987	0.004

The regression equation is formulated as follows:

$$\boldsymbol{Y = 1.215 + 0.438X_1 - 0.276X_2 - 0.193X_3}$$

The multiple linear regression results indicate that all independent variables significantly influence trust in digital financial services. Fintech usage (β = 0.438, t = 5.876, p < 0.001) has a positive and statistically significant effect on trust, suggesting that increased usage enhances user confidence and familiarity with fintech platforms. In contrast, risk perception (β = -0.276, t = -3.954, p < 0.001) negatively affects trust, indicating that higher perceived risks reduce users' willingness to rely on digital financial services. Similarly, data privacy concerns (β = -0.193, t = -2.987, p = 0.004) also have a significant negative impact, implying that concerns over personal data security weaken user trust. The constant value (1.215, p = 0.002) reflects the baseline level of trust when all independent variables are held constant. Overall, these findings highlight that while increased fintech usage strengthens trust, perceived risks and privacy concerns remain critical barriers that must be addressed to sustain user confidence.

4.6 Hypothesis Testing

4.6.1 t-Test (Partial Test)

The hypothesis testing results show that fintech usage has a t-value of 5.876 with a significance level of 0.000 (< 0.05), indicating a positive and significant effect on trust, meaning that increased usage enhances user confidence in digital financial services. In contrast, risk perception has a t-value of -3.954 with a significance of 0.000 (< 0.05), demonstrating a negative and significant effect on trust, which implies that higher perceived risks reduce user trust. Similarly, data privacy concerns have a t-value of -2.987 with a significance of 0.004 (< 0.05), indicating a negative and significant impact on trust, suggesting that concerns over data security weaken users' confidence in fintech platforms. Therefore, all proposed hypotheses (H1, H2, and H3) are supported.

4.6.2 F-Test (Simultaneous Test)

Table 4. F-Test Results

Model	F-value	Sig.
Regression	42.673	0.000

The F-test results indicate that the regression model is statistically significant, as evidenced by an F-value of 42.673 with a significance level of 0.000 (< 0.05). This finding demonstrates that fintech usage, risk perception, and data privacy concerns simultaneously have a significant effect on trust in digital financial services. In other words, the combination of these independent variables provides a strong explanatory power in predicting user trust, confirming that the model is appropriate and meaningful for understanding the determinants of trust within the fintech context.

4.6.3 Coefficient of Determination (R^2)

Table 5. Model Summary

R	R^2	Adjusted R^2
0.682	0.465	0.454

The model summary results indicate that the regression model has a moderate to strong explanatory power, as reflected by an R value of 0.682, which suggests a substantial correlation between the independent variables and trust. The coefficient of determination (R^2) of 0.465 implies that 46.5% of the variance in trust in digital financial services can be explained by fintech usage, risk perception, and data privacy concerns. Meanwhile, the adjusted R^2 value of 0.454 indicates that, after accounting for the number of predictors in the model, approximately 45.4% of the variation in trust is still explained, demonstrating the robustness and stability of the model. However, the remaining variance suggests that other factors not included in this study may also influence trust, providing opportunities for future research.

4.7 Discussion

The findings of this study provide robust empirical evidence that fintech usage plays a pivotal role in shaping trust in digital financial services, reinforcing the argument that experiential interaction is a key driver of user confidence. The positive and significant effect of fintech usage suggests that repeated engagement with digital platforms enhances familiarity, reduces uncertainty, and strengthens perceived reliability. This aligns with established technology adoption frameworks such as the Technology Acceptance Model (TAM), which posits that perceived usefulness and ease of use drive behavioral acceptance [21], [22]. Beyond mere adoption, this study extends prior research by demonstrating that sustained usage not only facilitates acceptance but also deepens trust formation through experiential validation. In the Indonesian context, where fintech adoption is rapidly expanding, this finding underscores the importance of continuous

user engagement strategies in building long-term trust relationships.

In contrast, risk perception emerges as a significant inhibiting factor, exerting a negative influence on trust. This finding substantiates the theoretical premise of perceived risk, which suggests that individuals tend to avoid technologies associated with uncertainty and potential loss. The negative coefficient indicates that concerns related to financial loss, fraud, and system unreliability continue to undermine user confidence, despite increasing familiarity with fintech services. This tension between usability and perceived risk highlights a critical paradox in digital financial ecosystems: while technological exposure promotes trust, persistent perceptions of vulnerability can offset these gains. Particularly in Indonesia, where incidents of cybercrime and digital fraud are increasingly visible, risk perception remains a salient determinant that cannot be overlooked. This suggests that trust-building strategies must go beyond usability enhancements to include robust risk mitigation and communication mechanisms [9], [18], [20].

Similarly, data privacy concerns are found to significantly and negatively affect trust, emphasizing the growing importance of data governance in digital financial ecosystems. As fintech platforms rely heavily on the collection and processing of sensitive user data, concerns regarding data misuse, unauthorized access, and lack of transparency can erode user confidence. This finding reflects a broader shift in user awareness, where privacy is no longer a peripheral issue but a central component of trust evaluation. In emerging markets such as Indonesia, where regulatory frameworks for data protection are still evolving, users may perceive higher levels of vulnerability, further amplifying privacy concerns. This study contributes to the literature by empirically confirming that privacy concerns operate as a critical barrier to trust, reinforcing the need for transparent data practices and stronger institutional safeguards [1], [23], [24].

The simultaneous analysis further reveals that fintech usage, risk perception, and data privacy concerns jointly influence trust, with fintech usage exerting the strongest positive effect, followed by the negative impacts of risk perception and privacy concerns. This integrative finding offers a more nuanced understanding of trust formation, demonstrating that trust is not shaped by a single factor but rather by the dynamic interplay between enabling and inhibiting forces. While positive user experiences can significantly enhance trust, their impact may be diminished if users simultaneously perceive high levels of risk or privacy threats. This highlights the importance of adopting a balanced approach that not only promotes user engagement but also systematically addresses underlying concerns related to security and privacy.

Overall, this study advances the theoretical discourse on fintech adoption by presenting a comprehensive model that integrates behavioral (usage), cognitive (risk perception), and socio-technical (data privacy) dimensions of trust. Practically, the findings suggest that fintech providers must adopt a dual strategy: enhancing user experience to strengthen positive perceptions while simultaneously mitigating perceived risks and reinforcing data protection mechanisms. Policymakers and regulators also play a critical role in establishing clear and enforceable data governance frameworks to enhance public confidence. Ultimately, fostering trust requires a holistic approach that aligns technological innovation with user-centric security and privacy assurance, ensuring the sustainable growth of digital financial services in Indonesia and beyond.

5. CONCLUSION

This study concludes that trust in digital financial services in Indonesia is significantly influenced by fintech usage, risk perception, and data privacy concerns, where fintech usage has a positive effect on trust, indicating that increased familiarity and engagement with digital financial platforms enhance user confidence, while risk perception and data privacy concerns have negative effects, demonstrating that perceived risks and concerns over data security remain

critical barriers to trust. Simultaneously, these variables exert a significant combined influence on trust, with fintech usage identified as the most dominant factor, suggesting that although positive user experiences are essential in building trust, efforts to mitigate perceived risks and ensure data privacy are equally crucial in sustaining it. Therefore, fintech providers are encouraged to improve system reliability, strengthen cybersecurity measures, and implement transparent data protection policies to reduce user concerns, while policymakers should reinforce regulatory frameworks related to data privacy and digital security to foster a more trustworthy digital financial ecosystem. Furthermore, future research is recommended to incorporate additional variables such as perceived usefulness, ease of use, and service quality to provide a more comprehensive understanding of trust in fintech services.

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