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MORALITY BEFORE KNOWLEDGE

A trust-based digital gold pawning model for enhancing financial inclusion

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ABSTRACT

Background: Despite the rapid digitalization of financial services, financial exclusion remains a persistent challenge for low-income households and micro, small, and medium enterprises (MSMEs) in Indonesia. Gold pawning, particularly under Sharia-compliant contracts, has long served as an accessible financing instrument. However, recent studies suggest that digital transformation alone does not necessarily translate into improved financial inclusion. This study therefore examines the role of customer trust as a key mechanism linking the digitalization of gold pawn services and financial inclusion in PT Pegadaian (Persero). **Method:** This research employs an explanatory quantitative design using primary data collected through structured questionnaires from 102 respondents familiar with gold pawn services and digital financial platforms. The relationships among variables were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). **Findings:** The results indicate that the digitalization of gold pawn services significantly increases customer trust ($\beta = 0.593$, $p < 0.001$), while customer trust significantly enhances financial inclusion ($\beta = 0.576$, $p < 0.001$). However, the direct relationship between digitalization and financial inclusion is not statistically significant ($\beta = 0.141$, $p = 0.267$), indicating that customer trust fully mediates this relationship. **Conclusion:** These findings demonstrate that digital financial services contribute to financial inclusion only when supported by strong institutional trust. Digital service quality, transparency, and Sharia-compliant governance play a crucial role in building trust and encouraging sustained engagement with formal financial services. **Novelty/Originality of this article:** This study proposes a trust-based digital gold pawning model that integrates digital service quality, Sharia governance, and institutional trust to explain financial inclusion outcomes within Islamic pawn services.

KEYWORDS: customer trust; digital gold pawning; financial inclusion; Islamic finance; Pegadaian.

1. Introduction

PT Pegadaian (Persero) has long played a strategic role in Indonesia's financial system by providing collateral-based financing accessible to low-income households and micro, small, and medium enterprises (MSMEs). Among its main products, gold pawning holds a central position due to its high liquidity, relatively stable value, and strong cultural acceptance as a store of value. Unlike conventional bank loans, which typically require formal documentation and credit histories, gold pawning allows rapid access to funds

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through tangible collateral, thereby addressing the structural barriers that contribute to financial exclusion. Previous studies consistently show that gold pawning services support income smoothing, working capital financing, and business sustainability for MSMEs underserved by formal financial institutions (Susandi, 2025; Wijaya, 2022).

In the context of Islamic finance, gold pawning is generally structured through rahn contracts, often combined with wadīĀah (safekeeping) arrangements and fee structures related to murābaḥah and governed by fatwas issued by the National Sharia Council–Indonesian Ulema Council (DSN-MUI). These Sharia foundations play an important role in reducing voluntary financial exclusion, a condition in which individuals avoid financial services due to religious considerations. Empirical evidence from Indonesia and Malaysia indicates that compliance with Islamic legal and ethical principles enhances perceived legitimacy, moral acceptance, and trust, which, in turn, encourages public participation in Islamic pawnbroking schemes (Fifin & Halida, 2025; Razak & Asutay, 2022; Wijayanti, 2020).

Alongside Sharia compliance, the digital transformation of pawnshop services has become an increasingly important policy priority. Through the Pegadaian Digital Service (PDS) application, customers can access online pawn transactions, gold-savings accounts, bill payments, and account monitoring. Digitalization is expected to reduce transaction costs, expand geographic outreach, and integrate pawnshop services into the broader digital financial ecosystem. Theoretical perspectives in the digital financial inclusion literature suggest that perceived usefulness, ease of use, and system reliability strongly influence user attitudes and adoption intentions (Avrianto & Murwenie, 2024; Fishbein et al., 1975). However, empirical studies on PDS reveal a more complex reality: although digital services improve convenience, adoption remains constrained by application errors, network instability, limited smartphone ownership, and low levels of financial and digital literacy, particularly among low-income users, who are the primary targets of inclusion policies (Gunawan, 2025; Ozili, 2018). Despite these technological advancements, the expected improvements in financial inclusion have not always materialized. This indicates that the availability of digital financial services alone may not be sufficient to ensure broader participation in formal financial systems.

Within this framework, trust emerges as a unifying theoretical construct linking Sharia compliance, digitalization, and financial inclusion. In financial services, trust reduces perceived risk, encourages repeated use, and lowers resistance to new technologies. In Islamic financial institutions, trust is multidimensional, encompassing confidence in Sharia governance, transparency of pricing and contracts, service quality, and legal protection. Studies on Pegadaian and other Islamic pawn institutions show that transparent fee structures, clear information on gold valuation, responsive customer service, and visible Sharia supervision significantly strengthen customer trust and loyalty (Ferawati, 2022; Wijayanti, 2020). From a regulatory perspective, consumer protection frameworks such as the Consumer Protection Law (UUPK), regulations issued by the Financial Services Authority (*Otoritas Jasa Keuangan* or OJK), and accounting standards such as PSAK 407 for gold pawn transactions further institutionalize trust by ensuring legal certainty, accountability, and transparency in financial reporting (Badar & Mandala, 2025; Rusmariani & Setiawan, 2025).

Despite the growing body of literature, previous studies remain fragmented. Existing research tends to examine gold pawning, Sharia compliance, digital financial services, consumer protection, or financial literacy separately. As a result, the mechanisms through which these factors interact to influence financial inclusion remain insufficiently understood. In particular, limited attention has been given to how institutional trust is formed in digital pawn services and how such trust translates into sustained financial participation among underserved communities. Moreover, empirical findings indicate a persistent gap between the potential availability of digital services and their effective use, suggesting that digitalization alone is insufficient without complementary trust-building mechanisms and hybrid service designs that combine online and offline channels (Aziz & Naima, 2021; Fachruzi, 2023).

Accordingly, this study aims to examine how the digitalization of gold pawn services influences financial inclusion through the mediating role of customer trust in the context of Pegadaian in Indonesia. To address this objective, the study synthesizes insights from Islamic finance theory, trust theory, and the digital financial inclusion literature to propose a trust-based digital gold pawning model. This study is based on three interrelated theoretical assumptions. First, sharia-compliant contracts and governance positively influence trust by strengthening moral legitimacy and religious acceptance. Second, digital service quality, as reflected in perceived usefulness, ease of use, and system reliability, positively affects trust in digital pawn platforms. Third, trust functions as a mediating mechanism that enhances the adoption and continued use of digital gold pawning services, thereby strengthening the financial inclusion of MSMEs and low-income households.

Based on this theoretical foundation, the objectives of this study are threefold. The primary aim is to pinpoint the key elements that foster trust in digital gold pawning services in Pegadaian, such as adherence to Sharia principles, characteristics of digital services, legal safeguards, and financial literacy. Second, it aims to conceptualize a trust-based digital gold pawning model that explains the link between these factors and financial inclusion outcomes. Third, it formulates policy implications for regulators and Pegadaian management, particularly in designing hybrid service channels, strengthening consumer protection, enhancing Sharia and accounting compliance, and expanding financial and digital literacy programmes.

The originality of this study lies in its integrated perspective. Rather than proposing a new financial product, it advances the state-of-the-art by positioning digital gold pawning as a process of institutional trust-building operating at the intersection of Islamic contracts, digital governance, and inclusion policy. By placing trust as the central analytical lens, this study contributes to the Islamic financial inclusion literature and offers practical policy recommendations for leveraging digital pawnshop services as a sustainable financial inclusion instrument in Indonesia.

This study contributes to the literature in three ways. First, it integrates insights from Islamic finance, digital financial inclusion, and trust theory to develop a trust-based framework for understanding the role of digital pawn services in promoting financial inclusion. Second, it provides empirical evidence on the mediating role of customer trust in the relationship between service digitalization and financial inclusion within the context of Pegadaian. Third, it offers policy-relevant insights for financial institutions and regulators seeking to design trust-oriented digital financial services that can effectively expand access to formal financial systems.

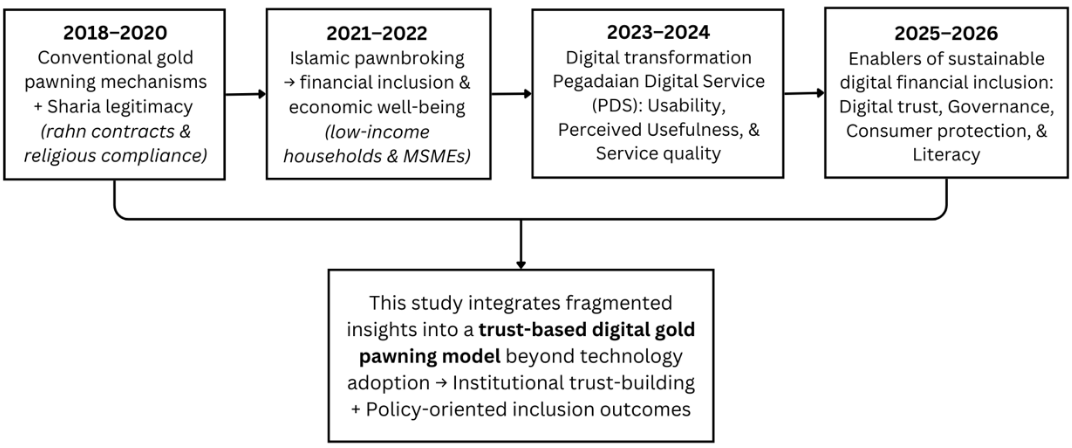

Fig. 1. Research evolution and positioning: Toward a trust-based digital gold pawning model (2018–2026)

Fig. 1. Illustrates the evolution of scholarly research on Pegadaian, gold pawning, and digital financial inclusion from 2018 to 2026. Early studies (2018–2020) predominantly

focused on conventional gold pawning mechanisms and sharia legitimacy, emphasizing rahn contracts and religious compliance. Subsequent research (2021–2022) shifted toward the role of Islamic pawnbroking in enhancing financial inclusion and economic well-being, particularly for low-income households and MSMEs. More recent studies (2023–2024) highlight the digital transformation of Pegadaian through the Pegadaian Digital Service (PDS), with growing attention to usability, perceived usefulness, and service quality. The latest strand of literature (2025–2026) increasingly emphasizes digital trust, governance, consumer protection, and literacy as critical enablers of sustainable digital financial inclusion. Positioned within this latest phase, the present study advances the literature by integrating these fragmented insights into a trust-based digital gold pawning model, thereby extending existing research beyond technology adoption toward institutional trust-building and policy-oriented inclusion outcomes.

2. Methods

2.1 Research design

This study employs an explanatory quantitative research design to examine the causal relationships between the Digitalization of Gold Pawn Services (DIG), Customer Trust (TR), and Financial Inclusion (FI) in the implementation of the Trust-Based Digital Gold Pawning Model at PT Pegadaian (Persero) in Indonesia. This design is appropriate for analyzing how the transformation of gold pawn services through digital channels, such as Pegadaian's digital applications, contributes to trust formation while expanding access to and utilization of formal financial services (FI). The research model focuses on testing the direct effect of digitalization on customer trust, the effect of customer trust on financial inclusion, and the indirect effect of digitalization on financial inclusion through customer trust as a mediator.

The proposed mediation model was analyzed using structural equation modeling-partial least squares (SEM–PLS). This method is particularly suitable for examining complex causal relationships involving multiple latent constructs, especially when the study relies on survey data and relatively small to medium sample sizes that may not meet the multivariate normality assumptions. PLS-SEM has been widely applied in studies grounded in the Technology Acceptance Model and digital financial services to assess the role of trust, perceived usefulness, and service quality in shaping user behavior and financial participation (Latif et al., 2025).

Furthermore, recent empirical studies demonstrate that SEM–PLS is effective for modeling trust-based mechanisms in digital finance and gold-based financial services, particularly in emerging markets. For example, research on gold-pawn decision-making and digital gold services confirms the relevance of SEM-based approaches in capturing the behavioral and institutional factors influencing customer decisions (Nasution et al., 2025). In addition, studies on digital financial inclusion highlight that customer trust often functions as a key mediating variable linking digital service adoption to inclusive financial outcomes, especially when moderated by digital financial literacy and user capabilities (Mwange & Mumba, 2025). Accordingly, the use of SEM–PLS in this study enabled a robust examination of both the direct and indirect effects within the proposed trust-based digital gold pawning framework.

The sample size of 102 respondents is considered adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM). Unlike covariance-based SEM, PLS-SEM is suitable for relatively small samples because it focuses on maximizing the explained variance of endogenous constructs rather than reproducing the covariance matrix (Hair et al., 2021). Following the commonly applied "10-times rule," the minimum sample size should be at least ten times the maximum number of structural paths directed at any latent construct in the model. In the present model, the largest number of paths pointing to a construct is two, indicating a minimum requirement of 20 observations. Therefore, the sample size of 102 respondents substantially exceeds this threshold and is considered statistically sufficient for reliable model estimation.

2.2 Data sources and sampling techniques

This study uses primary data obtained through structured questionnaires administered to respondents relevant to Pegadaian's gold pawn services (conventional and sharia) and the use of Pegadaian's digital services. The sampling technique employed was purposive sampling, whereby respondents were required to have used Pegadaian's gold pawn services at least once during the past 1–2 years, have experience using at least one digital financial service (e.g., mobile banking, e-wallets, or digital financial applications), and be at least 17 years of age. Purposive sampling was selected because the study focuses on respondents who possess specific experiences relevant to the research objectives, namely individuals familiar with gold pawn services and digital financial platforms. This approach ensures that the collected data reflect informed perceptions regarding the digitalization of pawn services and trust formation in financial transactions.

Data collection was conducted through an online questionnaire in December 2025–January 2026. The research instrument was adapted from a standardized instrument that measures the Digitalization of Gold Pawn Services (DIG), Customer Trust (TR), and Financial Inclusion (FI) in the context of digital financial services and fintech adoption, and was adjusted to the characteristics of Pegadaian's gold pawn services. All statements were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Likert scale was used to capture respondents' perceptions and attitudes toward digital pawn services, trust in financial institutions, and financial inclusion outcomes. Respondents participated voluntarily and the confidentiality of their data was guaranteed.

2.3 Variables and measurement

This study uses three main constructs, namely Digitalization of Gold Pawn Services (DIG) as the independent variable (X), Customer Trust (TR) as the mediating variable (M), and Financial Inclusion (FI) as the dependent variable (Y). Each construct is measured using several indicators adapted from verified instruments in previous studies to ensure the reliability and validity of the measurements, and adjusted to the context of Pegadaian's gold pawn services and the digital channels used. To operationalize the construct of service digitalization, the study refers to the literature on digital service quality/FinTech service quality, which emphasizes the aspects of convenience, reliability, security, and user experience quality as important components in digital financial services (Rahardjo & Darma, 2025; Sharma et al., 2024).

Digitalization of Gold Pawn Services (DIG) describes the extent to which gold pawn services have been digitized and are perceived as effective by users, particularly in terms of service accessibility, speed and efficiency of processes, system reliability, transaction security, and quality of user experience on digital applications/services. This operational definition is in line with the service quality approach on FinTech platforms that integrates service dimensions (SERVQUAL) and technology acceptance to explain the use of digital financial services (Sharma et al., 2024), as well as studies that place digital service quality as a determinant of sustainable behavior in mobile/digital banking (Rahardjo & Darma, 2025)

Customer Trust (TR) reflects the level of customer confidence in digital gold pawn services, both in terms of the service provider institution and the digital system used. Trust is operationalized through perceptions of data security and confidentiality, transparency of service information (costs, procedures, risks), consistency of service quality, and confidence that the service provider operates the service professionally and responsibly. In the literature on digital financial services, trust is positioned as a key construct related to user confidence in the reliability of services and the credibility of platforms, for example in studies of digital banking that examine e-trust in user behavior (Lumbantobing et al., 2025) and studies that link trust to consumer protection factors and the use of mobile banking services (Aisyah & Wahyuni, 2025).

Meanwhile, Financial Inclusion (FI) is operationalized as the increasing affordability and utilization of formal financial services through the use of digital services, including digital gold pawn services. The FI construct covers aspects of access (ease of obtaining services), usage (intensity/continuity of service usage), and expansion of participation in digital financial services in a more meaningful way. This operationalization is in line with the digital financial inclusion literature that emphasizes access and usage as important elements of digital-based inclusion (Widyastuti et al., 2024), and is reinforced by studies on digital financial inclusion measurement that compile indicators/indices to capture the progress of digital service-based financial inclusion (Mapurita & Mayoukou, 2024). Additionally, FI is often used as a construct in MSME performance/ecosystem studies that position digital financial inclusion as a variable that can be measured and tested in mediation models (Tandilino et al., 2025). The measurement items were adapted from validated instruments in previous studies related to digital financial services, fintech adoption, and financial inclusion. Minor adjustments were made to ensure contextual relevance to Pegadaian's digital gold pawn services while maintaining the conceptual consistency of the constructs.

2.4 Data collection procedure

The research questionnaire underwent expert validation (expert judgment) by three experts with expertise in digital finance/financial inclusion and/or pawnshop service practitioners to ensure the representativeness of the constructs of gold pawn service digitization (DIG), customer trust (TR), and financial inclusion (FI), as well as the clarity of the wording of the items in the context of pawnshops. Next, a pilot test was conducted on 20 respondents who met the criteria (had used gold pawnbroking and were users of digital financial services) to evaluate the comprehensibility of the items and the initial reliability of the instrument (Cronbach's α value ≥ 0.70).

The main data collection was conducted through the distribution of online questionnaires in the period December 2025–January 2026 through customer/MSME communities, social media (e.g., WhatsApp, Instagram, Telegram), and relevant digital financial service user networks, by applying screening questions at the beginning to ensure that the respondents met the sample criteria. Respondent identities were kept confidential and participation was voluntary to minimize privacy risks, particularly regarding financial information and experiences using gold pawn services, as well as to increase the honesty of respondents' answers. Ethical considerations were taken into account throughout the data collection process. Participation in the survey was entirely voluntary, and respondents were informed about the purpose of the research before completing the questionnaire. No personally identifiable information was collected, and all responses were analyzed anonymously to ensure confidentiality and privacy protection.

2.5 Data analysis technique

Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS–SEM) with SmartPLS 4.0. This method was chosen because it is suitable for predictive models, small to medium sample sizes, and non-normal data distributions (Hair et al., 2021). The analysis process was carried out in three main stages, namely outer model evaluation, inner model evaluation, and mediation testing. The outer model evaluation examined validity and reliability using factor loadings (>0.70), composite reliability (>0.70), Cronbach's alpha (>0.70), and Average Variance Extracted (AVE >0.50). Discriminant validity was assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). The inner model evaluation involved the assessment of R^2 values, path coefficients, effect sizes (f^2), and predictive relevance (Q^2), while the significance of the structural relationships was tested using a bootstrapping procedure with 5,000 resamples. Furthermore, mediation testing was conducted to examine the mediating role of Customer Trust in the relationship between Digitalization of Gold Pawn Services and Financial

Inclusion. Partial mediation was confirmed when both the direct and indirect effects were statistically significant. Mathematically, this research model can be formulated with the following structural equation:

$$M = \beta_1 + \beta_1 X + \mathcal{E}_1 \quad \text{(Eq. 1)}$$

$$Y = \gamma o + M + \gamma_2 X + \mathcal{E}_2 \quad \text{(Eq. 2)}$$

In this model, X represents the Digitalization of Gold Pawn Services, M represents Customer Trust, and Y represents Financial Inclusion. The structural equations capture the direct effect of digitalization on trust, the effect of trust on financial inclusion, and the indirect effect of digitalization on financial inclusion through the mediating role of customer trust. The error terms (ε_1 and ε_2) represent unexplained variance within the model.

2.6 Conceptual framework and research hypotheses

The conceptual framework of this study is based on literature on the digitization of financial services, customer trust, and financial inclusion. The digitization of gold pawn services is expected to improve the convenience, security, and quality of services, thereby building customer trust. This trust then encourages wider and more sustainable use of financial services, which is reflected in financial inclusion. The conceptual model of the study is shown in Fig. 2:

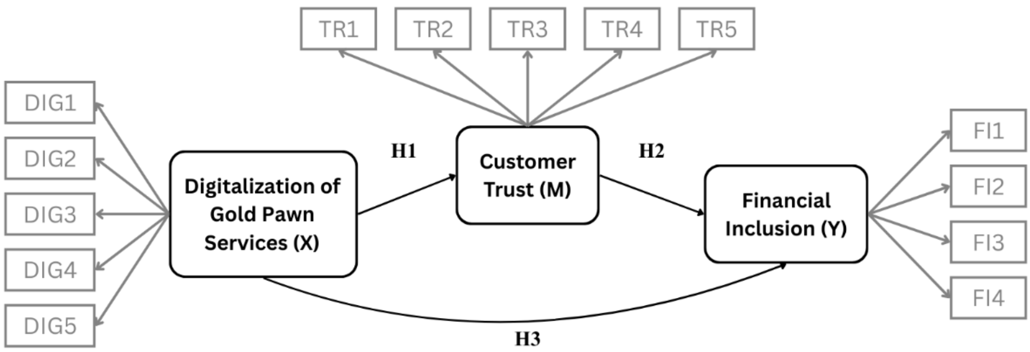

Fig. 2. Research conceptual model

Based on the theoretical framework and prior empirical findings in digital finance and trust literature, the following hypotheses are proposed:
H1: Digitalization of gold pawn services has a significant effect on customer trust.
H2: Customer trust has a significant effect on financial inclusion.
H3: Customer trust mediates the effect of digitalization of gold pawn services on financial inclusion.

3. Results and Discussion

3.1 Respondents' characteristics

Table 1 presents the demographic and usage characteristics of the respondents. Out of 102 respondents, 72.55% already have an account on the Pegadaian Digital Service (PDS) application, and 70.59% have conducted at least one digital transaction, indicating a relatively high level of exposure to digital pawn services. This supports the relevance of the sample for analyzing digital gold pawning adoption.

Table 1. Characteristics of respondents

Respondent characteristics	Number of Respondents	Percentage (%)
Do you have an account on the Pegadaian Digital application?		
No	28	27.45
Yes	74	72.55
Total	102	100.00
Have you conducted at least one transaction (gold savings/pawn/payment) using the application?		
No	30	29.41
Yes	72	70.59
Total	102	100.00
Gender		
Male	45	44.12
Female	57	55.88
Total	102	100.00
Age (years)		
17-20	8	7.84
21-30	23	22.55
31-40	43	42.16
41-50	23	22.55
> 50	5	4.90
Total	102	100.00
Level of education		
Bachelor's Degree (S1)	51	50.00
Master's Degree (S2)	21	20.59
Doctoral Degree (S3)	5	4.90
High School / Equivalent	23	22.55
Junior High School / Equivalent	2	1.96
Total	102	100.00
Customer type		
Conventional Pawn Customer	10	9.80
Sharia Pawn Customer	38	37.25
Digital Pawn Service User	33	32.35
Non-customer (General Public)	21	20.60
Total	102	100.00
Occupation		
Civil Servant (ASN)	14	13.73
Private Sector Employee	30	29.41
MSME Owner	23	22.55
Self-employed / Freelancer	17	16.67
Entrepreneur	10	9.80
Homemaker	3	2.94
College Student	5	4.90
Total	102	100.00
Digital financial service usage frequency		
Less than once a month	7	6.86
1–2 times per month	16	15.69
3–5 times per month	33	32.35
6–10 times per month	27	26.47
More than 10 times per month	19	18.63
Total	102	100.00

In terms of gender, female respondents slightly dominate the sample (55.88%), while the largest age group falls within 31–40 years (42.16%), followed by 21–30 years and 41–50 years (each 22.55%). This suggests that digital gold pawning users are predominantly of productive age, aligning with Pegadaian's target market of MSMEs and working adults. Regarding education, more than 75% of respondents hold at least a bachelor's degree, reflecting sufficient cognitive capacity to evaluate digital financial services. Customer segmentation shows that sharia pawn customers (37.25%) and digital pawn service users (32.35%) constitute the majority, reinforcing the relevance of trust and digitalization in the Islamic pawnshop context.

Finally, the frequency of digital financial service usage indicates that over 77% of respondents use digital financial services at least three times per month, suggesting familiarity with digital platforms and strengthening the validity of behavioral responses in the SEM model. These characteristics indicate that the respondents possess sufficient exposure to digital financial services, making them suitable participants for examining perceptions related to digital pawn services, trust formation, and financial inclusion.

3.2 Measurement model (Outer model)

Fig. 3. Illustrates the estimated measurement (outer) model using the PLS-SEM approach, showing the relationships between the latent constructs and their corresponding indicators. The model depicts the constructs of Digitalization of Gold Pawn Services, Customer Trust, and Financial Inclusion along with the loading values of each indicator used to measure these constructs.

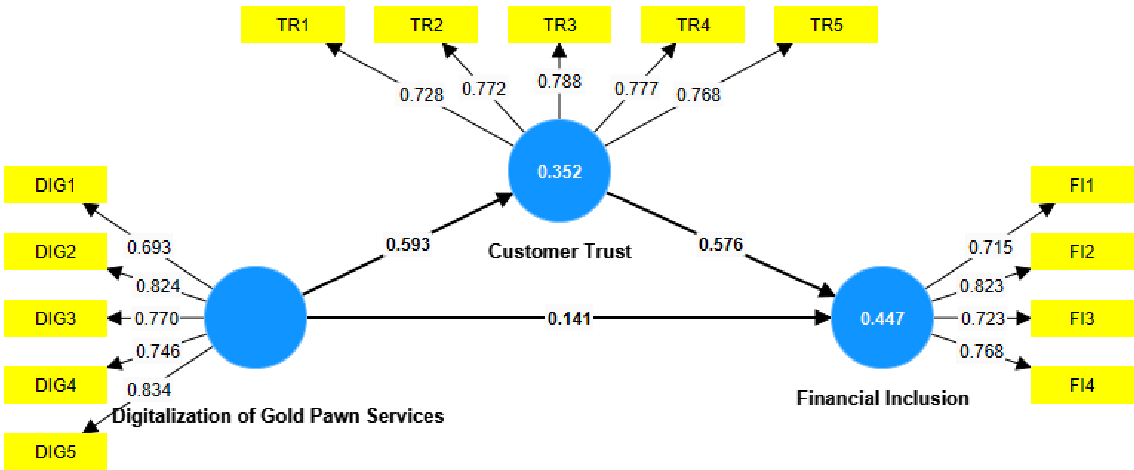

Fig. 3. PLS-SEM calculation

Table 2. Reports the outer loading values for each measurement indicator. Overall, the results indicate that all indicators load adequately on their respective constructs. Most indicators exhibit loading values above the recommended threshold of 0.70, suggesting strong indicator reliability. One indicator within the Digitalization of Gold Pawn Services construct (DIG1 = 0.693) shows a slightly lower loading. However, this value remains acceptable in exploratory and policy-oriented research, particularly when the indicator is theoretically meaningful (Hair et al., 2021). These results confirm that the indicators used in this study appropriately represent the latent constructs of Digitalization of Gold Pawn Services, Customer Trust, and Financial Inclusion.

Table 2. Outer loadings

	Customer trust	Digitalization of gold pawn services	Financial inclusion
DIG1		0.693	
DIG2		0.824	
DIG3		0.770	
DIG4		0.746	
DIG5		0.834	
FI1			0.715
FI2			0.823

	Customer trust	Digitalization of gold pawn services	Financial inclusion
FI3			0.723
FI4			0.768
TR1	0.728		
TR2	0.772		
TR3	0.788		
TR4	0.777		
TR5	0.768		

Table 3. Presents the assessment of internal consistency reliability and convergent validity. The Cronbach's alpha values for all constructs exceed 0.70, indicating satisfactory internal consistency among indicators. Similarly, composite reliability values (both ρa and ρc) are well above the minimum threshold of 0.70, further confirming construct reliability. In terms of convergent validity, all Average Variance Extracted (AVE) values surpass the recommended level of 0.50, implying that each construct explains more than half of the variance of its indicators. Collectively, these findings demonstrate that the measurement model fulfills the criteria for reliability and convergent validity.

Table 3. Construct reliability & convergent validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Customer trust	0.825	0.826	0.877	0.588
Digitalization of gold pawn services	0.834	0.846	0.882	0.601
Financial inclusion	0.753	0.763	0.844	0.575

Discriminant validity is evaluated using the Fornell–Larcker criterion, as reported in Table 4. The square root of the AVE for each construct is higher than the correlations with other constructs, indicating that each latent variable is empirically distinct (Hair et al., 2021). This result suggests that Customer Trust, Digitalization of Gold Pawn Services, and Financial Inclusion capture conceptually different phenomena, despite being theoretically related within the proposed model.

Table 4. Fornell-Larcker Criterion

	Customer trust	Digitalization of gold pawn services	Financial inclusion
Customer trust	0.767		
Digitalization of gold pawn services	0.593	0.775	
Financial inclusion	0.659	0.482	0.758

To further strengthen discriminant validity assessment, Table 5. Reports the Heterotrait–Monotrait (HTMT) ratios. All HTMT values are below the conservative threshold of 0.90, confirming the absence of discriminant validity issues. This finding reinforces the robustness of the measurement model and supports the suitability of proceeding to the structural model analysis.

Table 5. Heterotrait—Monotrait (HTMT)

	Customer trust	Digitalization of gold pawn services	Financial inclusion
Customer trust			
Digitalization of gold pawn services	0.706		
Financial inclusion	0.823	0.596	

3.3 Structural model (Inner model)

Table 6. Reports the results of the multicollinearity assessment using the Variance Inflation Factor (VIF). All VIF values are below the critical threshold of 5, indicating that multicollinearity does not pose a concern in the model (Hair et al., 2021). This result confirms that the estimated path coefficients are not biased due to high intercorrelations among exogenous variables.

Table 6. Multicollinearity assessment (VIF) – Inner model

	VIF
Customer trust -> Financial inclusion	1.543
Digitalization of gold pawn services -> Customer trust	1.000
Digitalization of gold pawn services -> Financial inclusion	1.543

Table 7. Presents the coefficient of determination (R^2) for the endogenous constructs. The R^2 value for Customer Trust is 0.352, indicating that Digitalization of Gold Pawn Services explains approximately 35.2% of the variance in customer trust. Meanwhile, the R^2 value for Financial Inclusion is 0.447, suggesting that Customer Trust and Digitalization of Gold Pawn Services jointly explain 44.7% of the variance in financial inclusion. These values indicate a moderate explanatory power, which is considered acceptable in social science research, particularly in studies examining behavioral and perceptual constructs. This indicates that the proposed model explains a meaningful portion of the variance in financial inclusion outcomes, highlighting the importance of customer trust as a mediating mechanism in the digital financial services context.

Table 7. R-Square

	R-square	R-square adjusted
Customer trust	0.352	0.346
Financial inclusion	0.447	0.436

The hypothesis testing results based on the bootstrapping procedure are reported in Table 8. The path from Digitalization of Gold Pawn Services to Customer Trust is positive and statistically significant, with a path coefficient of 0.593 and a p-value below 0.001. This finding indicates that improvements in digital service quality, such as perceived usefulness, ease of use, and system reliability, significantly enhance customer trust in Pegadaian's digital gold pawning services. Thus, Hypothesis 1, which proposes a positive effect of digitalization on customer trust, is supported.

Table 8. Path coefficient (Bootstrapping)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Digitalization of gold pawn services -> Customer trust	0.593	0.609	0.099	5.992	0.000
Customer trust -> Financial inclusion	0.576	0.564	0.104	5.517	0.000
Digitalization of gold pawn services -> Financial inclusion	0.141	0.163	0.127	1.110	0.267

Furthermore, the relationship between Customer Trust and Financial Inclusion is also found to be positive and statistically significant, with a path coefficient of 0.576 and a p-value below 0.001. This result suggests that higher levels of trust encourage greater access to and continued use of formal financial services, reinforcing the role of trust as a key driver of financial inclusion within the digital pawnshop context.

In contrast, the direct relationship between Digitalization of Gold Pawn Services and Financial Inclusion is not statistically significant, as indicated by a path coefficient of 0.141 and a p-value of 0.267. This finding implies that digitalization alone does not directly lead to improved financial inclusion outcomes. Instead, its effect operates indirectly through customer trust. Taken together, this result indicates that digitalization contributes to financial inclusion only through the development of institutional trust, highlighting the critical role of trust as a behavioral mechanism in digital financial services.

This mediation result provides an important theoretical implication. It suggests that the presence of digital financial services alone does not automatically lead to inclusive financial outcomes. Instead, users must first develop confidence in the reliability, transparency, and institutional credibility of digital platforms before they are willing to adopt and continuously use these services. Therefore, trust acts as a critical mechanism that translates technological innovation into meaningful financial participation.

Table 9. Model fit

	Saturated model	Estimated model
SRMR	0.082	0.082
NFI	0.759	0.759

Model fit is evaluated using the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI), as reported in Table 9. The SRMR value of 0.082 falls within the acceptable range (< 0.10), indicating that the model demonstrates an adequate overall fit (Hair et al., 2021). Although the NFI value of 0.759 does not reach the ideal threshold of 0.90, this result is common in PLS-SEM studies focused on prediction and theory development rather than strict model fit, and therefore does not undermine the validity of the proposed model. These results suggest that the proposed model demonstrates an acceptable level of goodness-of-fit for PLS-SEM analysis.

3.4 Discussion

The empirical findings of this study strongly support the proposed trust-based digital gold pawning model and provide empirical evidence on the mediating role of customer trust in the relationship between service digitalization and financial inclusion. First, the significant effect of digitalization on customer trust confirms that perceived usefulness, ease of use, and system reliability are critical trust-building mechanisms in digital pawn services. This aligns with technology adoption theory (Fishbein et al., 1975) and recent empirical studies on Pegadaian Digital Service (PDS) adoption (Avrianto & Murwenie, 2024; Pratiwi et al., 2025).

These findings are consistent with previous research in digital finance literature, which emphasizes that trust is a key determinant of users' willingness to adopt and continue using digital financial platforms. Studies in emerging markets have shown that users often hesitate to adopt digital financial services when they perceive risks related to security, transparency, or institutional credibility (Appiah & Agblewornu, 2025; Ozili, 2018). Therefore, the role of trust observed in this study aligns with broader fintech adoption frameworks that highlight trust as a central factor in reducing perceived risk and enhancing financial participation. This study extends these findings by demonstrating that the trust mechanism is also crucial in the context of digital pawn services, particularly within Islamic financial institutions such as Pegadaian.

Second, the strong positive relationship between customer trust and financial inclusion reinforces the central role of trust in reducing perceived risk and encouraging sustained engagement with formal financial services. In the context of Islamic pawnshops, trust extends beyond technological reliability to include Sharia compliance, transparency of contracts, and institutional legitimacy, which have been consistently shown to influence participation in Islamic financial services (Razak & Asutay, 2022; Wijayanti, 2020).

The absence of a significant direct effect of digitalization on financial inclusion suggests that digital transformation alone is insufficient to achieve inclusive financial outcomes, confirming the mediating role of customer trust identified in this study. This finding supports Ozili (2018) and Aziz & Naima (2021), who argue that digital finance must be accompanied by trust-building, consumer protection, and literacy initiatives to effectively include marginalized populations. For Pegadaian, this implies that technical improvements in the PDS application must be complemented by transparent gold valuation, clear fee disclosure, responsive customer support, and visible Sharia supervision.

Moreover, the mediating role of trust explains the persistent gap between the availability of digital services and their effective use among low-income users, as reported in previous studies on Pegadaian Digital Service adoption (Gunawan, 2025). A hybrid service model combining digital platforms with offline assistance may therefore be more effective in strengthening trust and expanding financial inclusion.

From a practical perspective, these findings suggest that financial institutions should prioritize trust-building strategies when implementing digital financial services. For Pegadaian, this may include improving transparency in gold valuation, strengthening consumer protection mechanisms, enhancing the reliability of digital platforms, and ensuring visible Sharia governance practices. Such measures can help reduce perceived risk among users and encourage greater engagement with formal financial services. Overall, these findings highlight that digital financial inclusion is not solely a technological issue but also an institutional and behavioral challenge, where trust plays a pivotal role in bridging the gap between digital innovation and meaningful financial participation.

3.5 Model development

Building on the empirical findings of this study, the proposed model explains how the digitalization of gold pawning services contributes to financial inclusion through users' psychological and behavioral mechanisms. In the context of digital financial services, digital transformation does not automatically translate into financial inclusion. While many users may gain access to digital applications, not all are willing to adopt them continuously or experience tangible financial benefits. Accordingly, this model positions Customer Trust (TR) as the central mechanism that links the digitalization of gold pawning services with improved financial inclusion outcomes.

The model is structured as a sequential causal process in which trust precedes adoption and sustained use. Specifically, the causal pathway is conceptualized as follows: trust drivers shape Customer Trust (TR), which subsequently influences Intention to Use (ITU), leading to Actual Use and Continuance (AUC), and ultimately resulting in Financial Inclusion (FI). While the empirical analysis in this study focuses on the mediating role of customer trust, the proposed conceptual model extends this relationship by illustrating how trust may influence subsequent behavioral stages such as intention to use and continued service adoption. This structure emphasizes that trust is a necessary precondition for meaningful and sustained adoption of digital financial services, while actual and continuous usage constitutes the most proximal channel through which financial inclusion materializes.

At the initial stage, the model identifies a set of trust drivers that function as the key determinants of customer trust in digital gold pawning services. These drivers reflect an integrated combination of technological quality, institutional processes, Sharia-based values, and legal protection mechanisms. This conceptualization is consistent with trust-based technology acceptance models, which emphasize that trust emerges from both system-related attributes and institutional credibility (Appiah & Agblewornu, 2025; Budiyanto et al., 2025).

The first driver, Digital Service Quality (DSQ), captures the quality of digital gold pawning services from the user's perspective, including ease of use, system reliability, transaction speed, functional usefulness, and clarity of information. High digital service quality reduces transactional friction and perceived uncertainty, thereby enhancing users' confidence in the provider's technical competence and professionalism. This mechanism aligns with technology acceptance and e-commerce literature, which highlights perceived usefulness and reliability as foundational antecedents of trust in digital financial services (Appiah & Agblewornu, 2025; Budiyanto et al., 2025).

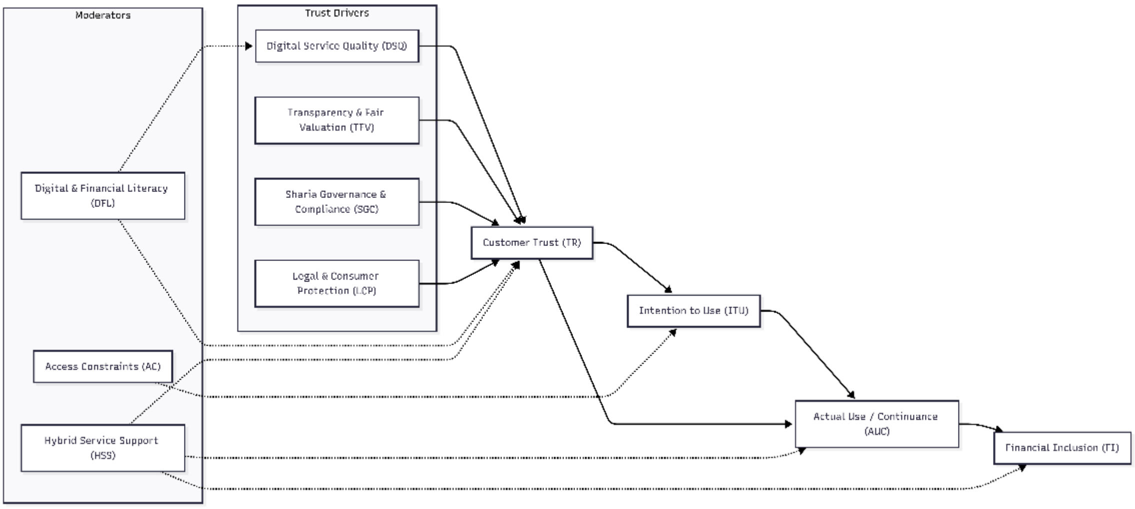

Fig. 4. Proposed model

The second driver, Transparency and Fair Valuation (TFV), refers to the openness of information and perceived fairness in gold valuation and pricing mechanisms. In gold pawning services, aspects such as service fees, valuation procedures, renewal, and redemption terms are particularly sensitive. When information is clearly communicated and valuation processes are perceived as fair, perceived risk diminishes and institutional trust increases. Transparency therefore functions as a legitimacy-enhancing factor that reduces information asymmetry and strengthens trust-based engagement in financial services.

The third driver, Sharia Governance and Compliance (SGC), emphasizes the value-based dimension of trust rooted in religious and ethical principles. SGC encompasses the clarity of contractual structures (such as *rahn*), the alignment of fees and operational procedures with Sharia principles, and the credibility of Sharia supervisory mechanisms. In Islamic financial services, trust is not derived solely from technical performance, but also from the belief that the institution operates in accordance with religious norms and moral expectations. This value-based trust dimension differentiates Islamic gold pawning services from conventional counterparts and reinforces their role in inclusive and ethical finance (Avdukić & Smolo, 2024; Rahman, 2010).

The fourth driver, Legal and Consumer Protection (LCP), captures users' perceptions of legal certainty and institutional safeguards within digital transactions. This construct includes data security, transaction protection, complaint resolution mechanisms, and the clarity of terms and conditions. In digital financial environments, concerns over data misuse and contractual ambiguity often hinder adoption. Strong perceptions of legal and consumer protection therefore reduce perceived risk and reinforce user trust, supporting safer and more sustainable participation in digital financial services (Appiah & Agblewornu, 2025).

Collectively, these four drivers exert direct effects on Customer Trust (TR), reflecting the assumption that trust emerges from the combined influence of service quality, transparency, Sharia governance, and legal protection. Customer trust occupies a central position within the model and functions as the core linking mechanism between trust drivers and user behavior. Trust is conceptualized as users' belief that the service provider is reliable, secure, transparent, user-oriented, and compliant with Sharia and regulatory standards. Once trust reaches a sufficient level, it not only shapes behavioral intentions but may also directly motivate actual usage and continued engagement with digital gold pawning services (Budiyanto et al., 2025).

Intention to Use (ITU) represents the psychological readiness of users to adopt and expand their use of digital gold pawning services, including the intention to increase transaction frequency and recommend the service to others. ITU serves as a transitional construct that translates trust into behavioral commitment. In the proposed model, trust positively influences ITU, which in turn drives Actual Use and Continuance (AUC). AUC reflects realized adoption behavior and the sustainability of digital service usage, emphasizing that digital financial inclusion is not merely about access, but about repeated and meaningful utilization.

Financial Inclusion (FI) is positioned as the ultimate outcome of the model. FI encompasses enhanced access to formal financial services, increased usage intensity, improved financial resilience to meet emergency needs, and support for household and MSME economic activities. Consistent with global financial inclusion frameworks, inclusion becomes meaningful only when services are actively and consistently utilized (Demirguc-Kunt et al., 2022; Lahreche et al., 2020).

The model further incorporates a serial mediation mechanism that conceptually extends the empirical findings of this study, whereby the effects of trust drivers on financial inclusion unfold progressively through Customer Trust, Intention to Use, and Actual Use and Continuance. This sequential process highlights that digitalization does not automatically generate inclusion; rather, its impact materializes through trust formation and sustained behavioral engagement. In addition, several moderating conditions are incorporated to capture real-world heterogeneity. Digital and Financial Literacy strengthens the translation of trust into adoption by enabling users to better understand risks and service features (Morgan et al., 2019), while Access Constraints such as limited connectivity or device availability weaken the transition from intention to actual use. Hybrid Service Support, including offline assistance and user education, further enhances the effectiveness of trust-based adoption by reducing friction and facilitating problem resolution.

Overall, the proposed model advances the digital financial inclusion literature by moving beyond the simplistic assumption that digitalization automatically enhances financial inclusion. Building on the empirical findings of this study, the model conceptualizes digital gold pawning as a trust-centered and behaviorally mediated process in which institutional trust serves as a critical mechanism linking technological innovation with meaningful financial participation. By integrating technological quality, institutional governance, and behavioral adoption processes, this framework offers a comprehensive and policy-relevant perspective for understanding how digital pawn services, particularly within Islamic financial institutions such as Pegadaian, can contribute to sustainable financial inclusion.

4. Conclusions

This study develops and empirically examines a Trust-Based Digital Gold Pawning Model to explain how digital pawn services contribute to financial inclusion in the context of Pegadaian in Indonesia. The findings demonstrate that digitalization of gold pawn services does not directly enhance financial inclusion. Instead, its impact operates through the formation of customer trust, which functions as a central mediating mechanism within the model. The results indicate that improvements in digital service quality, such as system reliability, ease of use, transparency, and accessibility, significantly strengthen customer trust. In turn, higher levels of trust encourage sustained engagement with formal financial services, particularly among MSMEs and low-income households that are traditionally excluded from the banking system. The absence of a significant direct effect of digitalization on financial inclusion empirically confirms that technological availability alone is insufficient without trust-oriented governance.

By positioning trust at the core of the digital gold pawning process, this study extends existing digital financial inclusion and Islamic finance literature. The proposed model emphasizes that digital pawn services should be designed not merely as technological platforms, but as institutional mechanisms for trust-building. From a policy perspective, the model highlights the importance of integrating digital innovation with Sharia compliance, consumer protection, and hybrid service delivery to ensure that digital gold pawning serves as a sustainable instrument for financial inclusion. Despite its contributions, this study has several limitations. First, the sample size is relatively modest and may not fully capture the diversity of users across different regions and socioeconomic backgrounds. Second, the empirical analysis focuses primarily on the mediating role of customer trust, while other behavioral and contextual factors such as digital literacy, perceived risk, and technological accessibility were not explicitly examined. These limitations suggest that the findings should be interpreted within the specific context of Pegadaian's digital pawn services in Indonesia. sFuture research could expand this model by incorporating additional behavioral variables such as digital literacy, financial capability, and perceived risk to better understand user adoption of digital pawn services. Comparative studies across different financial institutions or countries may also provide deeper insights into how trust-based mechanisms operate in diverse regulatory and institutional environments. Such extensions would further enrich the understanding of digital financial inclusion in emerging economies.

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Author Contribution

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are not publicly available due to privacy and ethical restrictions. The interview data contain confidential information provided by expert participants.

Conflicts of Interest

The authors declare no conflict of interest.

Declaration of Generative AI Use

During the preparation of this work, the authors used DeepL to assist in language translation and improving clarity of expression. After using this tool, the authors reviewed, revised, and edited the content as needed and took full responsibility for the accuracy, interpretation, and integrity of the publication.

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