

The Effect of Digital Government Service Integration on Public Trust through Public Service Quality: A Study on Digital Government Service Users in Indonesia

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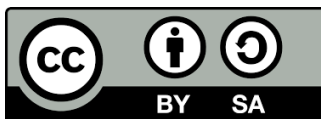
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Keywords:

digital government service integration; public service quality; public trust; e-government; PLS-SEM

Abstract

Framgmented digital government services can undermine service quality and public trust through inconsistent information, repeated data entry, and disconnected administrative processes. This study examined the relationship between digital government service integration and public trust, with public service quality as a mediating variable in the Indonesian context. An explanatory quantitative design was employed to analyze data from 100 respondents using 15 reflective indicators measured on a five-point Likert scale. Partial least squares structural equation modeling (PLS-SEM) was performed using SmartPLS 4, with 5,000 bootstrap subsamples to assess the measurement model, structural relationships, and mediation effects. The measurement model demonstrated adequate internal consistency reliability, convergent validity, and discriminant validity. Digital government service integration was positively associated with public service quality ($\beta = 0.574$) and public trust ($\beta = 0.293$), while public service quality was positively associated with public trust ($\beta = 0.515$). The indirect effect of digital government service integration on public trust through public service quality was significant ($\beta = 0.296$), indicating complementary partial mediation; all structural relationships were statistically significant at $p < 0.001$. The model explained 32.9% of the variance in public service quality and 52.4% of the variance in public trust. These findings suggest that digital government service integration strengthens public trust when service connectivity translates into reliable, responsive, and consistent service experiences. Therefore, interoperability and public service quality should be developed concurrently. However, the numerical results primarily demonstrate model consistency and the performance of the analytical procedures; independently collected field data are required before population-level conclusions can be drawn or the findings can be used to inform policy decisions.



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INTRODUCTION

The transformation of digital government services has changed citizens' expectations regarding how the state delivers administrative services. Speed, ease of access, transparency, information consistency, and security are no longer perceived as additional features but as integral components of the quality of interactions between citizens and public institutions (Yuliana & Anita, 2026). Recent Indonesian literature indicates that digitalization can expand access to services, improve efficiency, and strengthen transparency; however, its impact remains dependent on infrastructure readiness, human resource capacity, digital literacy, and the ability of organizations to coordinate services across administrative units (Isma, Kardiati, & Fadhillah, 2025).

Another important issue is service integration. The availability of multiple applications or service channels does not automatically result in a better service experience when users

encounter separate accounts, inconsistent information, repetitive data entry, and disconnected interagency processes. Sagai et al. (2026) show that interagency interoperability remains one of the challenges in digital government transformation, while Yuliana and Anita (2026) identify system integration, information security, and interface quality as important factors in building digital trust. Thus, service integration should be understood not only as a technological issue but also as the capacity of public organizations to deliver a seamless and consistent service journey (Zein, Anggraini, & Malau, 2025).

Studies on public service quality have demonstrated a relatively consistent pattern. Isma et al. (2025) found that digitalization had a positive and significant effect on service quality at the village level, particularly by improving speed, accuracy, accessibility, and transparency. LAN (2020) also showed that technology acceptance contributed to the dimensions of service reliability, responsiveness, and assurance. Development et al. (2024) asserted that application-based services could improve access and efficiency, although their effectiveness could be constrained by inadequate infrastructure, usability issues, slow institutional responses, and insufficient public outreach. These findings indicate that the success of digitalization is ultimately reflected in the quality of the service experience received by users.

The quality of the service experience is also relevant to public trust. Previous literature has demonstrated that satisfaction with electronic services and experiences with government websites are associated with trust in government (Page et al., 2021), while the use of electronic government services can strengthen process-based trust through improved perceptions of government responsiveness (Fileasufa, Zahrani, Triasma, & Fuadah, 2026). Imelda, Tamansiswa, Law, and Sjakhyakirti (2026) showed that trust in government and technology constitutes an important component of the acceptance of e-government services. In the Indonesian context, Ilham et al. (2026) concluded that procedural transparency, efficiency, system integration, and information protection are important mechanisms for building public trust.

Although the literature is expanding rapidly, several recent studies remain focused on a single geographic area or application, direct relationships between digitalization and service quality or satisfaction, or literature synthesis. Ilham et al. (2026) identified the need for more structured quantitative testing in the Indonesian context. Failasufa et al. (2026) also emphasized that digital transformation and e-government generate benefits when supported by effective utilization, adaptive governance, and adequate infrastructure readiness. This research gap provides an opportunity to examine a more specific mechanism: whether digital government service integration directly enhances public trust and indirectly enhances it through public service quality.

The novelty of this research lies in positioning digital government service integration as an upstream factor influencing the service experience and public service quality as a mediating mechanism through which integration may affect public trust. This approach connects the architecture of integrated digital services with users' evaluations of service performance and its institutional consequence in the form of public trust. The proposed model also extends previous research that has examined digitalization more broadly in terms of accessibility, efficiency, or satisfaction within specific service contexts (Sekarmadie, Prastyowati, & Astuti, 2025).

Cross-channel and cross-unit integration can reduce process fragmentation, information duplication, and procedural uncertainty. When systems exchange information consistently and users can navigate service processes without unnecessary barriers, perceptions of service reliability, speed, accessibility, and responsiveness are likely to improve. Findings regarding digitalization and service quality reported by Gustanto (2026), Al'libani et al. (2025), and Yuan, Zhou, and Rajaram (2022) support this reasoning. Therefore, H1 proposes that digital government service integration has a positive effect on public service quality.

Integration may also directly influence public trust because cross-channel consistency, process certainty, and service interconnectedness can reduce perceptions of bureaucratic fragmentation. Studies on digital services and trust indicate that transparent, secure, and responsive service experiences are associated with more favorable evaluations of government institutions (Dellyana, Arina, & Fauzan, 2023). Therefore, H2 proposes that digital government service integration has a positive effect on public trust.

Public service quality reflects an institution's ability to meet users' expectations through process reliability, information accuracy, responsiveness, accessibility, and security in service interactions. Sekarmadie et al. (2025) indicated that electronic service quality, together with trust in services, contributed to user satisfaction, while Imelda et al. (2026) emphasized that the acceptance and legitimacy of digital services are also influenced by the alignment of service design with societal contexts. On this basis, H3 proposes that public service quality has a positive effect on public trust.

Digital government service integration represents a technological and organizational capability, whereas public trust develops through users' actual experiences with public services. Therefore, the effect of integration on trust is expected to be partially transmitted through public service quality. Accordingly, H4 proposes that public service quality mediates the effect of digital government service integration on public trust. This study aims to test these four hypotheses using partial least squares structural equation modeling (PLS-SEM) and assess the magnitude and significance of the mediating effect of public service quality on the relationship between digital government service integration and public trust.

METHOD

The study employed an explanatory quantitative design to examine the relationships among Digital Government Service Integration (ILD), Public Service Quality (KPP), and Public Trust (KP). The unit of analysis was digital government service users in Indonesia. The model comprised 15 reflective indicators, with five indicators for each construct: ILD (ILD1–ILD5), KPP (KPP1–KPP5), and KP (KP1–KP5). All indicators were measured on a five-point Likert scale, and the analysis included 100 observations.

The data were analyzed using partial least squares structural equation modeling (PLS-SEM) with SmartPLS 4. PLS-SEM was used to evaluate the measurement and structural models and to test the mediating effect of Public Service Quality. Statistical significance was assessed using bootstrapping with 5,000 subsamples and a two-tailed test at a 5% significance level (Hair et al., 2022; Ringle et al., 2024).

The measurement model was evaluated using indicator loadings, Cronbach's alpha, rho_A, composite reliability, average variance extracted (AVE), the heterotrait-monotrait ratio

(HTMT), and variance inflation factors (VIFs). Indicator loadings above 0.70, reliability coefficients above 0.70, and AVE values above 0.50 were considered acceptable. Discriminant validity was assessed using HTMT, while potential collinearity was evaluated using VIF. The structural model was assessed using path coefficients, t-statistics, p-values, 95% confidence intervals, coefficients of determination (R^2), effect sizes (f^2), and the standardized root mean square residual (SRMR).

At the time of this study, the numerical results were used primarily to assess the consistency of the analytical model and procedures. Therefore, conclusions regarding the broader population of digital government service users in Indonesia required confirmation using independently collected field data before the findings could be used for population-level inference or policy evaluation.

RESULTS AND DISCUSSION

Evaluation of Measurement Models

All indicators show outer loading above 0.80. The ILD loading range is 0.808-0.874, KPP 0.817-0.909, and KP 0.847-0.890. Thus, all indicators have a strong contribution in reflecting their respective constructs. Cronbach's alpha values are at 0.897-0.923, composite reliability at 0.924-0.942, and AVE at 0.707-0.764. These results show internal consistency and adequate convergent validity.

The visualization of the outer model in Figure 1 confirms that all reflective indicators contain a strong load on their respective constructs.

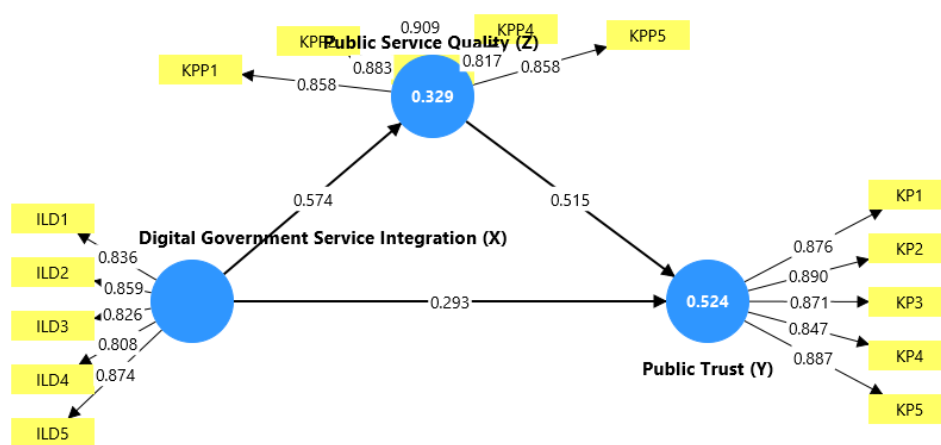


Figure 1. Outer Model and Standardized Outer Loadings

Table 1. Evaluation of Measurement Models

Construct	Loading Range	Cronbach's Alpha	rho_A	rho_C	AVE
Digital Government Services Integration	0.808-0.874	0.897	0.904	0.924	0.707
Quality of Public Services	0.817-0.909	0.916	0.919	0.937	0.749
Public Trust	0.847-0.890	0.923	0.927	0.942	0.764

The validity of the discriminant was also met. The HTMT value between ILD and KPP was 0.618, between ILD and KP was 0.636, and between KPP and KP was 0.739. All were below the conservative limit of 0.85. The indicator's VIF was in the range of 2.072-3.632, while the structural model's VIF was at 1.000-1.491. The value showed that collinearity was not a major issue in the model estimation.

Table 2. Discriminative Validity, Explainability, and Model Criteria

Criteria	Value	Interpretation
HTMT ILD-KPP	0.618	Adequate
HTMT ILD-KP	0.636	Adequate
HTMT KPP-KP	0.739	Adequate
R ² KPP (Adjusted)	0.329 (0.322)	Moderate-limited explanatory power
R ² KP (Adjusted)	0.524 (0.515)	Moderate explainability
SRMR	0.065	Below 0.08
NFI	0.871	Need to be read along with other criteria
Inner VIF	1.000-1.491	Does not indicate collinearity

The model explains 32.9% of the KPP variation and 52.4% of the KP variation. The SRMR of 0.065 is below the commonly used 0.08 threshold as a low residual indication of the model. The NFI of 0.871 is still below the 0.90 benchmark, so the feasibility of the model is not assessed from just one index, but together with the measurement quality, explainability, and significance of the path. This pattern is consistent with the PLS-SEM character which is oriented towards the explanation and prediction of interconstruct relationships.

Structural Model Evaluation and Hypothesis Testing

The bootstrapping results showed that all hypothesized paths were significant. The integration of digital government services had a positive effect on the quality of public services ($\beta = 0.574$; $t = 7.961$; $p < 0.001$), so H1 was supported. Integration also had a direct effect on public trust ($\beta = 0.293$; $t = 3.645$; $p < 0.001$), so H2 was supported. The quality of public services had a strong positive influence on public trust ($\beta = 0.515$; $t = 6.476$; $p < 0.001$), so H3 was supported.

Table 3. Hypothesis Test Results and Structural Effects

Hypothesis/Pathway	β	t	p	95% CI	f ²	Verdict
H1: ILD $\rightarrow$ KPP	0.574	7.961	<0.001	0.426-0.707	0.491	Supported
H2: ILD $\rightarrow$ KP	0.293	3.645	<0.001	0.130-0.455	0.121	Supported
H3: KPP $\rightarrow$ KP	0.515	6.476	<0.001	0.354-0.662	0.375	Supported
H4: ILD $\rightarrow$ KPP $\rightarrow$ KP	0.296	4.758	<0.001	0.185-0.425	-	Supported
Total effect ILD $\rightarrow$ KP	0.588	9.096	<0.001	0.455-0.708	-	Significant

The indirect effect of ILD on KP via KPP was 0.296 with $t = 4.758$ and $p < 0.001$. The 95% confidence interval of 0.185-0.425 did not pass zero. Since the direct pathway of ILD to KP also remained positive and significant, the pattern showed complementary partial mediation. That is, integration builds trust through two mechanisms that run simultaneously: the direct benefits of service connectivity and the indirect benefits when those connections translate into better service quality. The total effect of ILD on KP reached 0.588.

The relationships between constructs, path coefficient values, and power to explain the model are visualized in Figure 2 as the inner model.

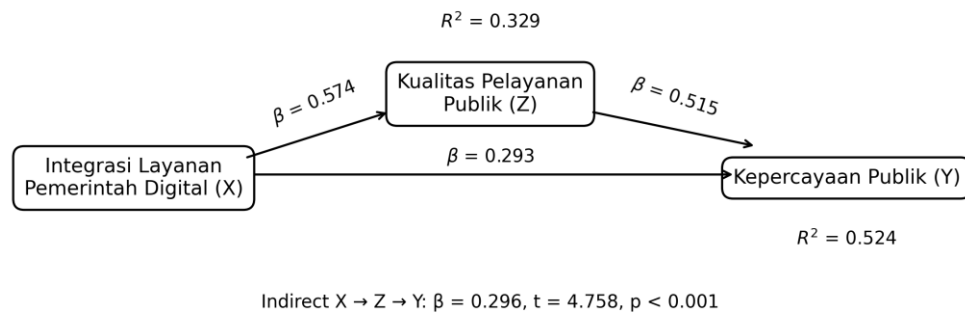


Figure 2. Inner Model (Structural Model and Path Coefficient)

Findings H1 show that the integration of digital government services is an important antecedent for service quality. The coefficient values of 0.574 and f^2 of 0.491 show that the relationship is not only statistically significant, but also has a large effect measure on KPP. Substantively, integration reduces the friction that arises when information, processes, and service channels work individually. As users gain a more continuous experience, the risk of repeating inputs decreases, information becomes more consistent, and the transfer between service stages becomes clearer. These results are in line with Nursaleh et al. (2026), who found the positive influence of digitalization on service quality, and Al'libani et al. (2025), who emphasized reliability and responsiveness as important outputs of the implementation of digital services.

These results are also in line with the study of accessibility and efficiency. Isma et al. (2025) show that digital transformation can expand access while increasing transparency and inclusivity, while Zein et al. (2025) attribute digitalization to speed of service, process accuracy, cost efficiency, and accountability. At the local government level, Supriadi et al. (2026) show that digital innovation contributes to efficiency, access to information, and transparency. Integration can therefore be understood as a foundation that allows these benefits to be felt more consistently, rather than just present as separate technological features.

H2 shows that integration also has a direct influence on public trust. Although the size of the direct effect is smaller than the path through service quality, the coefficient of 0.293 still shows that process connectivity and service consistency have their own institutional value. These findings are in line with Welch et al. (2005) who show the relationship between e-service experience, satisfaction, and trust in government. Tolbert and Mossberger (2006) also found that the use of e-government can increase process-based trust when citizen interactions become more responsive. In the context of technology acceptance, Bélanger and Carter (2008) place trust in government and the internet as important elements in the use of electronic services.

H3 yields a coefficient of 0.515 with an f^2 of 0.375, suggesting that the quality of service has a major influence on public trust. These findings confirm that trust is not solely formed by the existence of technology, but by the perceived evidence of performance when the service is used. Users assess whether procedures are easy to understand, information is consistent,

responses are provided on time, and services are reliable. Sekarmadie et al. (2025) found that the quality of electronic services, including ease of access, speed, system availability, and security, is positively related to user satisfaction. Rijal et al. (2025) also show that access and efficiency can be improved through public service applications, but the results are strongly influenced by organizational readiness and institutional response speed.

H4 strengthens the argument that service quality is a mechanism that bridges integration and trust. The indirect effect of 0.296 is almost equivalent to the direct effect of 0.293, so the contribution of mediation is substantive. These findings help explain why technically good integration projects do not necessarily generate trust if users continue to experience slow processes, unclear information, or inconsistent responses. Yuliana and Anita (2026) place system integration, transparency, efficiency, and security as important factors in building public trust. Sagai et al. (2026) also show that interoperability, infrastructure capacity, and security readiness are challenges that must be solved to strengthen digital governance transformation.

The results of the study also show that the social and organizational dimensions cannot be separated from technological design. Imelda et al. (2026) emphasize the importance of community acceptance and local context in digital public services. Yaya and Sukardi (2025) show that the implementation of e-government is positively related to the performance of village governments and that governance affects the effectiveness of these relationships. This means that integration needs to be accompanied by data governance, service standards, accountability mechanisms, apparatus support, and digital inclusion strategies. An approach that only adds applications without improving cross-unit processes risks maintaining fragmentation in digital form.

Theoretically, this study shows that the integration of digital services can be positioned as an organizational capability that shapes the quality of service experience, while service quality acts as a mechanism that transforms these capabilities into institutional trust. Empirically-methodologically, the complementary partial mediation pattern shows that the influence of integration on trust is not single. Some influences arise directly through the perception of connectedness and consistency, while others are through the experience of service quality. This framework expands on studies that have more often tested digitalization on quality, efficiency, satisfaction, or performance separately (Failasufa et al., 2026; Ilham et al., 2026; Kurhayadi, 2019).

Practical Implications and Limitations

The key practical implication is that the development of digital services should place interoperability and user experience quality as a unified agenda. Operational priorities include consistency of identity and information across channels, reduced input repetition, continuity of processes between units, response time standards, service status transparency, and information protection. Integration investments that are not followed by improvements in reliability and responsiveness will result in more limited trust benefits. Conversely, when integration truly improves the service experience, the impact on trust becomes stronger because it works through direct and indirect channels at the same time.

The research has several limitations. The model only includes three constructs and 100 observations, so it has not captured variations in service types, regional characteristics, digital

literacy levels, user ages, and different user experiences. The model is also cross-cutting in the article development stage so it cannot assess changes in trust over time. Further research needs to be verified with independent field responses that cover more provinces and service categories, test differences between user groups, and consider constructs such as digital security, transparency, ease of use, satisfaction, and digital literacy.

CONCLUSION

The findings showed that Digital Government Service Integration (ILD) was positively associated with Public Service Quality (KPP) and Public Trust (KP). Public Service Quality was also positively associated with Public Trust and exhibited complementary partial mediation in the relationship between Digital Government Service Integration and Public Trust. The PLS-SEM results showed that the path coefficients for $ILD \rightarrow KPP$, $ILD \rightarrow KP$, and $KPP \rightarrow KP$ were $\beta = 0.574$, $\beta = 0.293$, and $\beta = 0.515$, respectively, while the indirect effect of ILD on KP through KPP was $\beta = 0.296$. The total effect of Digital Government Service Integration on Public Trust was $\beta = 0.588$. The model explained 32.9% of the variance in Public Service Quality and 52.4% of the variance in Public Trust. These findings indicate that integration should not be regarded merely as the technical integration of digital systems; its contribution to public trust becomes stronger when integration translates into reliable, responsive, accessible, consistent, transparent, and secure public services. Accordingly, Public Service Quality serves as a key mediating mechanism through which digital government service integration contributes to institutional trust. Further research should validate the model using larger and more heterogeneous field samples to enable more robust comparisons across regions, service categories, and user groups.

FUNDING

The author states that no financial support has been received for the implementation of this research and/or the publication of this article.

CONFLICT OF INTEREST

The author states that this research was conducted without any commercial or financial relationship that can be interpreted as a potential conflict of interest.

AUTHOR CONTRIBUTION

Bambang Arwanto: conceptualization, methodology, formal analysis, interpretation, writing-original draft, and writing-review and editing.

GENERATIVE ARTIFICIAL INTELLIGENCE USAGE STATEMENT

The author states that generative artificial intelligence (AI) was used to support language clarity, organization, and grammatical refinement during manuscript preparation. The analytical results were checked against the SmartPLS outputs, and the author remains solely responsible for the accuracy, interpretation, integrity, and final content of the manuscript.

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