

## E-GOVERNMENT QUALITY AND ORGANIZATIONAL READINESS AS DRIVERS OF PUBLIC SERVICE EFFICIENCY

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**ABSTRACT** This study examines the impact of e-government quality and organizational readiness on public service efficiency and investigates the mediating role of e-government usage in local government settings. It addresses a key gap in the literature where system quality and organizational readiness are frequently analyzed in isolation despite their joint relevance for digital public service performance. Using a quantitative explanatory design, survey data were collected from 300 civil servants in three Indonesian municipalities (Makassar, Parepare, and Palopo) and analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM) to estimate both direct and indirect effects. The results indicate that e-government quality has a positive and significant impact on public service efficiency, and organizational readiness likewise contributes significantly to efficiency outcomes. Moreover, e-government usage serves as a pivotal mediating mechanism that strengthens the effects of e-government quality and organizational readiness on efficiency. Higher system quality and stronger organizational readiness increase the use of digital government services, which in turn improve operational efficiency in service delivery. These findings underscore the importance of integrating technological capabilities with organizational capacity in public sector innovation, highlighting that digital reform necessitates reliable systems, competent institutions, and active user engagement. The study provides empirical evidence demonstrating how digital readiness and system quality collaborate through actual usage to drive efficiency gains in public services, particularly in developing subnational contexts. Practically, the insights inform policymakers and managers on how to align investments in system improvement, organizational preparedness, and adoption-support strategies, so that digital transformation initiatives yield measurable and sustainable efficiency improvements.

**Key words:** E-government quality, Organizational readiness, E-government usage, Public service efficiency, Local government

### INTRODUCTION

The development of digital technology has brought about significant changes in modern governance and has become a key pillar in improving the quality of public services. Digital transformation has encouraged governments in various countries to utilize information technology in service delivery, creating fast, efficient, responsive, and transparent bureaucratic processes (Sadat et al., 2025). The implementation of e-government is viewed as a strategic step to reduce administrative burdens, enhance accountability, and increase public access to high-quality public services. Various global studies have demonstrated that e-government not only improves process efficiency but also fosters a stronger relationship between citizens and the government through easier access to information and faster services (Twizeyimana & Andersson, 2019). However, the success of digitalizing public services is determined not only by the availability of technology but also by organizational readiness, human resource competency, and user trust in digital systems (AlHadid et al., 2022; Mensah et al., 2021).

In the Indonesian context, implementing e-government faces various structural, technical, and organizational challenges. The Indonesian government has developed various digital initiatives, including SPBE, website-based services, and village administration applications; however, the results have not been evenly distributed across regions. Mappasere (2025) demonstrates that e-government implementation can enhance the efficiency and transparency of public services; however, the level of service quality remains variable across agencies. At the local level, Andi Nurfadillah Nursamsir (2025) study of OpenSID in Tondowolio Village found that digitalization of village administration helped accelerate service delivery, but was still hampered by limited human resource capacity and suboptimal organizational adaptation. Similar findings were reported by Djabbari et al. (2024), who identified a lack of technological capabilities, the absence of strong organizational support, and minimal system maintenance as obstacles to e-government

implementation at the village level. Even at the national level, weaknesses in digital infrastructure, low employee competency, and uneven readiness among agencies hamper the success of comprehensive e-government implementation (Novalia et al., 2024; Nugroho & Purbokusumo, 2020).

Previous research suggests that e-government quality is significantly influenced by system design, service reliability, ease of use, and the level of transparency of the information presented (Twizeyimana & Andersson, 2019). Digital service quality has also been shown to be a crucial factor in increasing public interest and trust in government services (Al Sayegh et al., 2023; Hasan et al., 2024). Christine et al. (2025) emphasize that transparent and easily understood system explanations (explainability) can increase user utilization of e-services. Furthermore, e-government success is inextricably linked to organizational readiness, which includes employee competency, managerial support, a digital work culture, and adequate infrastructure (Mensah et al., 2021). Atobishi et al. (2024) found that organizational digital capabilities directly impact the performance of public sector organizations by increasing organizational agility. Research in Thailand by Karnsomdee (2025) also confirms that user perceptions and internal organizational readiness influence the success rate of e-government adoption. In addition, risk perception, data security (Stanford & Mompoloki, 2025), and trust in digital systems are essential factors in determining the level of use of government digital services (Ilieva et al., 2024; Li, 2021).

Although extensive research has been conducted on e-government, several gaps remain that make this study crucial. First, previous research tends to separate e-government quality from organizational readiness, even though both are theoretically and practically interrelated in improving public service efficiency (Christine et al., 2025; Karnsomdee, 2025). Second, most studies have been conducted in developed countries, whereas developing countries, such as Indonesia, face distinct challenges in terms of infrastructure, human resource competency, and public acceptance (Mao & Zhu, 2020; Ramirez-Madrid et al., 2024). Third, most studies focus on user adoption, while the impact of e-government quality and organizational readiness on public service efficiency is rarely comprehensively examined (Novalia et al., 2024). Fourth, few studies integrate system quality, organizational readiness, and public service efficiency into a single, coherent analytical framework, despite the interplay of these three components and their influence on the success of e-government implementation.

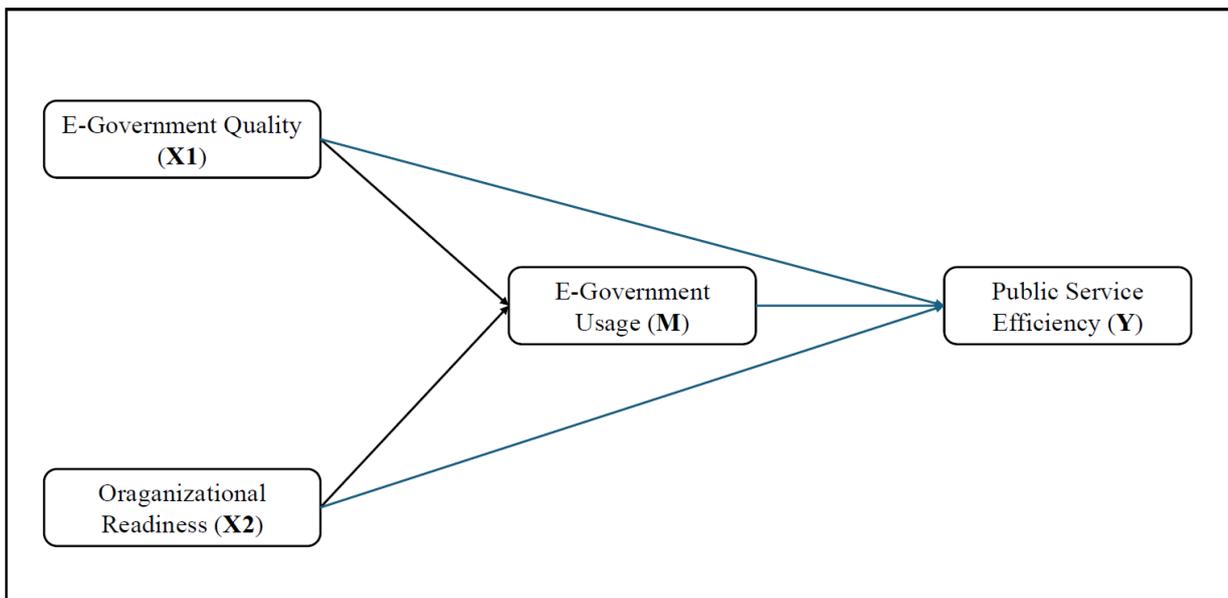
Based on these gaps, this research is crucial for providing academic and practical contributions to understanding how e-government quality and organizational readiness can improve the efficiency of public services, particularly in developing countries like Indonesia. This research is expected to provide a comprehensive understanding of how these two factors interact to influence the effectiveness of public service digitization. Furthermore, this research can provide policymakers with recommendations to strengthen their digitalization strategies by enhancing system quality and bolstering organizational capacity. Therefore, this research is expected to address the challenges of e-government implementation in greater depth and make a tangible contribution to improving the efficiency of public services in Indonesia.

## RESEACH FRAMEWORK

This study develops a research framework to clarify the analytical lens used to explain how digital government initiatives translate into efficiency gains in public service delivery. Conceptually, the framework integrates two complementary foundations (Punjabi et al., 2025). First, the Information Systems Success Model (DeLone & McLean) provides the basis for conceptualizing e-government quality as a multidimensional construct reflecting the performance of digital systems (e.g., system reliability and usability, information quality, and service/support quality) and its implications for organizational outcomes (Mphahlele et al., 2025). Second, organizational readiness perspectives in technology adoption (commonly discussed in innovation adoption and readiness frameworks) inform the construct of organizational readiness, emphasizing leadership commitment, human resource capability, infrastructure adequacy, governance arrangements, and the

organization’s capacity to manage change (Sterrenberg & L’Espoir Decosta, 2023). Together, these perspectives suggest that digital performance in the public sector depends not only on the technical quality of the platform but also on institutional preparedness to implement, sustain, and standardize digitally enabled work processes (Anomah, 2025; Guenduez et al., 2025).

Building on this logic, the framework positions e-government usage as a central mechanism that converts technological and organizational inputs into performance outcomes (Mphahlele et al., 2025). Higher e-government quality and stronger organizational readiness are expected to increase the intensity and effectiveness of system use among civil servants (Fan & Pan, 2023). In turn, greater and more effective e-government usage improves public service efficiency by streamlining workflows, reducing processing time and errors, enhancing procedural consistency, and optimizing resource use (Luo et al., 2024). Accordingly, the framework specifies both direct effects of e-government quality and organizational readiness on public service efficiency and indirect effects operating through e-government usage as a mediating variable (Fan & Pan, 2023; Ghufron & Mahmud, 2025). This integrated model provides a clear line of reasoning linking the study’s objectives, hypotheses, and empirical testing, and it underscores that successful digital reform requires the alignment of technological quality, organizational capacity, and user engagement. **Figure 1.** Research Framework presents the conceptual model underlying this study, depicting the relationships in which e-government quality and organizational readiness influence e-government usage, which subsequently enhances public service efficiency, alongside the direct paths from the two antecedents to efficiency.



Source: Created by the author

**Figure 1. Research Framework**

**METHOD**

This study uses a quantitative approach with an explanatory design, aiming to explain the causal relationship between e-government quality, organizational readiness, e-government use, and public service efficiency (Thi Uyen Nguyen et al., 2024). The quantitative approach was chosen because this study emphasizes empirical hypothesis testing using statistically analyzed numerical data (Benmohamed et al., 2024; Mphahlele et al., 2025). To test direct and indirect (mediation) relationships, this study employed the Structural Equation Modeling method based on Partial Least Squares (SEM-PLS) (Begany & Gil-Garcia, 2024). SEM-PLS allows for the analysis of complex models with a large number of latent variables and can perform optimally even when the data is not fully normally distributed (Liang et al., 2025; Mphahlele et al., 2025). This research was conducted in South Sulawesi Province, focusing on three cities: Makassar, Parepare, and Palopo. These three cities were selected purposively, considering their relatively advanced level of e-government

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implementation and their representativeness within the context of regional government administration in South Sulawesi. These three cities have high levels of digital public service activity, varying bureaucratic structures, and varying levels of government information system use, thus providing a comprehensive overview of the effectiveness of e-government implementation.

The study population consisted of civil servants (ASN) in local government agencies across the three cities, who implemented and utilized e-government services. ASN were selected because they are key actors in digital policy implementation and have direct knowledge of system quality, organizational readiness, and service efficiency outcomes. The sample was obtained through purposive sampling with the following criteria: ASN working in agencies that have implemented e-government, possessing at least one year of public service experience, and being directly involved in using digital government systems. A total of 300 respondents were included and proportionally distributed across the research sites (Makassar, 100; Parepare, 100; Palopo, 100). This sample size satisfies SEM-PLS minimum requirements, following the 10-times rule based on the number of indicators per construct (Althinayyan & Alojail, 2024; Pereira et al., 2024). Data were collected using a five-point Likert-scale questionnaire administered through both paper-based and online formats (e.g., Google Forms) (Lazarte-Aguirre, 2025). To complement the survey, the study conducted limited observations of e-government implementation in the ASN work environment and gathered supporting documents, including SPBE reports, digital service SOPs, and related records.

Data analysis proceeded in two main stages. First, the measurement (outer) model was evaluated to establish convergent validity, discriminant validity, and construct reliability (Nadella et al., 2024). Second, the structural (inner) model was assessed by examining path coefficients and their significance (t-statistics and p-values), explanatory power ( $R^2$ ), effect size ( $f^2$ ), predictive relevance ( $Q^2$ ), and mediation using the Variance Accounted For (VAF) approach to test the mediating role of e-government use (Trehan et al., 2025; Wang et al., 2024). Guided by the theoretical and conceptual framework, seven hypotheses were tested: (H1) e-government quality  $\rightarrow$  public service efficiency; (H2) organizational readiness  $\rightarrow$  public service efficiency; (H3) e-government quality  $\rightarrow$  e-government use; (H4) organizational readiness  $\rightarrow$  e-government use; (H5) e-government use  $\rightarrow$  public service efficiency; (H6) e-government use mediates the effect of e-government quality on public service efficiency; and (H7) e-government use mediates the effect of organizational readiness on public service efficiency.

**Table 1. Stages of Data Analysis Using PLS-SEM**

Stage	Model/Focus	Main Purpose	Key Tests/Indicators	Key References
Stage 1	Measurement Model (Outer Model)	To confirm the adequacy of the measurement instruments and ensure constructs are measured reliably and validly	Convergent validity, discriminant validity, construct reliability	(Nadella et al., 2024)
Stage 2	Structural Model (Inner Model)	To test hypothesized relationships among constructs and evaluate explanatory and predictive performance	Path coefficients, t-statistics, p-values, $R^2$ , $f^2$ , $Q^2$ ; mediation analysis using VAF (to test the mediating role of e-government use)	(Trehan et al., 2025; Wang et al., 2024)

**RESULTS AND DISCUSSION**

**Result**

Table 1 displays the characteristics of the respondents used in this study. A total of 300 respondents came from three main regions in South Sulawesi Makassar, Parepare, and Palopo with an equal number in each city. The respondent profile also includes gender, education level, and work experience, which are important for understanding the diversity of respondents' backgrounds and their influence on their perceptions of e-government quality, organizational readiness, and public service efficiency.

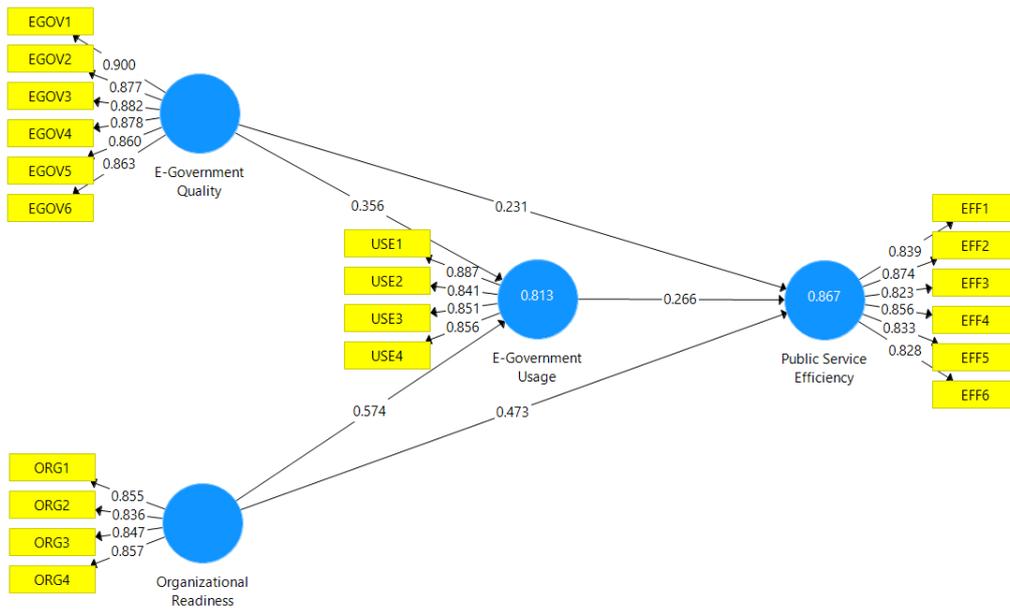
**Table 2. Description of respondents**

Variable	Cases (%)	Variable	Cases (%)
<b>Region</b>		<b>Education Level</b>	
Makassar	100 (33,33%)	Bachelor (S1)	206 (68,67%)
Parepare	100 (33,33%)	Master (S2)	86 (28,67%)
Palopo	100 (33,33%)	Doctoral (S3)	8 (2,67%)
<b>Gender</b>		<b>Work Experience</b>	
Male	165 (55,00%)	< 5 Years	64 (21,33%)
Female	135 (5,00%)	5-10 Years	102 (34,00%)
		11-15 Years	78 (26,00%)
		>15 Years	56 (18,67%)

Based on the data in Table 1, the distribution of respondents in three cities Makassar, Parepare, and Palopo was 33.33% each, indicating balanced regional representation. In terms of gender, male respondents dominated at 55%, while female respondents were 45%. The majority of respondents had a bachelor's degree (68.67%), followed by a master's degree (28.67%) and a doctoral degree (2.67%), indicating that most respondents had a higher educational background. Meanwhile, respondents' work experience varied, with the largest group being in the 5–10 years range (34%), followed by 11–15 years (26%), less than 5 years (21.33%), and more than 15 years (18.67%). This composition demonstrates the diversity of respondent characteristics that can support a more comprehensive analysis in the study.

**Validity and Realibility**

The measurement model was evaluated by assessing convergent validity and construct reliability to ensure that each indicator accurately represents its respective latent construct. Convergent validity was examined using outer loading values, Average Variance Extracted (AVE), Composite Reliability (CR), and Cronbach's alpha ( $\alpha$ ). An indicator is considered valid if it has an outer loading value of at least 0.70, while a construct meets convergent validity if its AVE value exceeds 0.50 and its CR value is greater than 0.70. Figure 1 presents the outer loading results of the measurement model, showing the strength of the relationship between indicators and their respective constructs. As illustrated in Figure 1, all indicators exhibit outer loading values above the recommended threshold of 0.70, indicating that each indicator adequately reflects its latent variable. Table 2 summarizes the results of the convergent validity and reliability testing for all constructs used in this study, namely E-Government Quality, Organizational Readiness, E-Government Usage, and Public Service Efficiency.



Source: Processed by the author using Smart-PLS 12

**Figure 2. Outer Loading of the Measurement Model**

The results presented in Figure 1 and Table 2 demonstrate that all indicators have factor loading values exceeding 0.70, indicating strong indicator reliability. In addition, the AVE values for all constructs range from 0.709 to 0.769, exceeding the minimum threshold of 0.50, which confirms adequate convergent validity. Composite Reliability values range from 0.912 to 0.952, while Cronbach’s alpha values range from 0.871 to 0.940, indicating excellent internal consistency and reliability of the measurement instruments. Therefore, all constructs in this study are confirmed to be valid and reliable, making them suitable for further structural model analysis using SEM-PLS.

**Table 2. Convergent Validity**

Constructs	Items	Factor loading	Average variance extracted (AVE)	Composit Reliability (CR)	Cronbach’s alpha ( $\alpha$ )
E-Government Quality	EGOV1	0.900	0.769	0.952	0.940
	EGOV2	0.877			
	EGOV3	0.882			
	EGOV4	0.878			
	EGOV5	0.860			
	EGOV6	0.863			
Organizational Readiness	ORG1	0.855	0.721	0.912	0.871
	ORG2	0.836			
	ORG3	0.847			

	ORG4	0.857			
E-Government Usage	USE1	0.887	0.737	0.918	0.881
	USE2	0.841			
	USE3	0.851			
	USE4	0.856			
Public Service Efficiency	EFF1	0.839	0.709	0.936	0.918
	EFF2	0.874			
	EFF3	0.823			
	EFF4	0.856			
	EFF5	0.833			
	EFF6	0.828			

### Hypothesis testing

Table 3 presents the results of hypothesis testing conducted to assess the direct and mediating effects between the research variables. Testing was conducted using a structural equation modeling (SEM) approach, where the parameters assessed included path coefficients, T-statistics, and P-values. Furthermore, R-square ( $R^2$ ) and  $Q^2$  values are displayed to demonstrate the contribution of the independent variables in explaining the dependent variable and the model's predictive ability. These results serve as the basis for determining whether the proposed hypothesis can be accepted or rejected, thus providing an empirical understanding of the role of e-government quality, organizational readiness, and e-government use in the efficiency of public services.

**Table 3. Hypothesis testing**

Hypotheses	Relationships	Path Coefficients	T statistics	R Square	$Q^2$	P values	Decision
<i>Direct effect</i>							
H1	EGOV → EFF	0.052	4.478**			0.000**	Supported
H2	ORG → EFF	0.071	8.884**			0.000**	Supported
H3	EGOV → USE	0.072	4.953**			0.000**	Supported
H4	ORG → USE	0.053	8.134**			0.000**	Supported
H5	USE → EFF	0.052	5.111**			0.000**	Supported
<i>Mediating Effect</i>							

H6	EGOV → USE → EFF	0.024	3.934**	2.038**	Supported
H7	ORG → USE→ EFF	0.038	3.980**	2.038**	Supported
	USE			0.813	0.592
	EFF			0.867	0.610

The test results in Table 3 indicate that empirical data support all hypotheses proposed in this study. In terms of the direct relationship, e-government quality significantly influences public service efficiency (H1), as indicated by a T-statistic of 4.478 and a P-value <0.001. Organizational readiness also significantly influences public service efficiency (H2), with the highest T-statistic of 8.884. Furthermore, e-government quality (H3) and organizational readiness (H4) both significantly influence the use of e-government, a key variable in the model. The variable of e-government use itself has a significant influence on public service efficiency (H5), indicating that the use of digital systems plays a direct role in improving service efficiency..

In testing the mediation effect, the results show that e-government use mediates the relationship between e-government quality and public service efficiency (H6). The findings of this study provide a comprehensive overview of how e-government quality and organizational readiness contribute to the efficiency of public services in the context of local government in South Sulawesi. Overall, the results suggest that e-government quality has a significant impact on public service efficiency. This finding reinforces previous arguments that digital system quality is a crucial foundation for providing fast, accurate, and transparent public services. Twizeyimana & Andersson (2019) identified digital service quality as a key element in shaping public value, and this study reaffirms its importance. Similarly, Mappasere (2025) confirmed that e-government quality in Indonesia can improve transparency and efficiency, although it still requires stronger managerial support. Thus, these findings provide empirical evidence that system quality is not merely a technical issue but a strategic factor in bureaucratic reform.

And mediates the relationship between organizational readiness and public service efficiency (H7), as indicated by a T-statistic of 3.9 and a P-value of < 0.001. The R<sup>2</sup> values of 0.813 for the e-government use variable and 0.867 for public service efficiency suggest that the model has considerable explanatory power. Meanwhile, the Q<sup>2</sup> value of 0.592 for e-government use and 0.610 for public service efficiency indicates that the model has good predictive ability. Overall, these results confirm that system quality and organizational readiness are crucial factors in promoting e-government adoption, which ultimately enhances public service efficiency.

**Discussion**

The findings of this study provide a comprehensive overview of how e-government quality and organizational readiness contribute to the efficiency of public services in the context of local government in South Sulawesi. Overall, the results suggest that e-government quality has a significant impact on public service efficiency. This finding reinforces previous arguments that digital system quality is a crucial foundation for providing fast, accurate, and transparent public services. Twizeyimana & Andersson (2019) identified digital service quality as a key element in shaping public value, and this study reaffirms its importance. Similarly, Mappasere (2025) confirmed that e-government quality in Indonesia can improve transparency and efficiency, although it still requires stronger managerial support. Thus, these findings provide empirical evidence that system quality is not merely a technical issue but a strategic factor in bureaucratic reform.

Organizational readiness has also been shown to significantly impact public service efficiency, indicating that digital transformation is unlikely to succeed without adequate internal readiness. These findings align with Mensah et al. (2021) perspective, which emphasizes that human resource readiness, leadership commitment, and digital culture are fundamental factors in implementing e-government. Research by Atobishi et al. (2024) also states that organizations with strong digital capabilities tend to perform more adaptively and efficiently. The findings of this study indicate that local governments, particularly those in Makassar, Parepare, and Palopo, have demonstrated a relatively high level of readiness in utilizing digital technology. However, challenges related to human resource capacity and internal governance still require attention.

The results of this study also indicate that both e-government quality and organizational readiness have a significant influence on e-government adoption. This finding reinforces the technology adoption literature, particularly the studies by AlHadid et al. (2022) and Al Sayegh et al. (2023), which found that perceived quality, ease of use, and organizational support increase the adoption rate of digital systems. In the context of this study, respondents appear to respond positively to e-government systems when they are stable, easy to use, and supported by a conducive organizational environment. This suggests that implementing technology without adequate organizational readiness and system quality is insufficient to increase adoption among employees or the public.

Furthermore, the use of e-government has been shown to have a direct impact on the efficiency of public services. This finding confirms that the essence of digitalization in government can only be achieved when the system is fully integrated into daily service activities. Utilizing the system has been proven to accelerate work processes, reduce data duplication, and minimize administrative errors. This aligns with the findings of Sadat et al. (2025) and Novalia et al. (2024), which state that the intensity of e-government use is a key factor determining efficiency in the public sector. These findings underscore that the existence of a digital system is not an end in itself; its active use determines its real impact.

The mediation findings also provide important insights. E-government use was found to mediate the relationships between e-government quality and public service efficiency, as well as between organizational readiness and public service efficiency. This suggests that system quality and organizational readiness do influence efficiency, but this influence is more substantial when employees actually use the system. These results align with research by Ramirez-Madrid et al. (2024), which emphasizes that a quality system will only provide benefits when its users utilize it optimally. Furthermore, research by Christine et al. (2025) shows that user understanding and engagement play a crucial role in the success of e-government. Thus, e-government use is a key mechanism bridging the gap between technological capacity and public service effectiveness.

The structural model used in this study also demonstrated strong explanatory power, as reflected by high  $R^2$  and  $Q^2$  values. This suggests that the variables studied make a significant contribution to explaining variations in e-government usage and public service efficiency. The consistency of these values strengthens the model's validity. It supports the argument that integrating technological and organizational aspects is an appropriate approach to understanding e-government dynamics in the public sector. This finding aligns with Mao & Zhu (2020) perspective, which emphasizes the importance of an integrated approach between technical and non-technical factors for the successful implementation of digital government systems.

## CONCLUSIONS

The results of this study indicate that e-government quality and organizational readiness are essential foundations that drive increased efficiency in public services, with the use of e-government acting as a key mechanism that bridges the two. This finding confirms that digital transformation in the public sector depends not only on reliable technology but also on organizational capacity and user engagement in utilizing the system optimally. This study successfully addresses the knowledge gap regarding how system quality and organizational readiness interact through user behavior to generate service efficiency, an aspect that has mainly been studied separately in the literature. The implications of these findings suggest that public sector innovation requires integration between technology design, strengthening bureaucratic capacity, and

increasing digital adoption to ensure the benefits of digital reform can be realized sustainably. While this study has limitations in its regional scope and use of a quantitative approach, the results provide a foundation for further research to explore more complex contextual factors and user behavior. Thus, this study not only emphasizes the importance of synergy between technological and organizational aspects but also offers a relevant empirical contribution to public service innovation and modernization efforts, particularly in the context of local government in Indonesia.

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