

The Historical Evolution of Public Administration Toward Smart Governance: Examining Its Impact on Citizen Engagement and Administrative Efficiency

Akhmad Riduan^{1*}, Yosaphat Danis Murtiharso², Tomi Apra Santosa³, Mulyadi⁴, Umar Sako⁵

¹STIA Bina Banua Banjarmasin, Indonesia

²Institut Bisnis dan Informatika Kwik Gian Gie, Indonesia

³Akademi Teknik Adikarya, Indonesia

⁴Universitas Ibnu Sina, Indonesia

⁵Universitas Muhammadiyah Gorontalo, Indonesia

ARTICLE INFO

Article history:

Received: January 05, 2026

Accepted: March 28, 2026

Kata Kunci:

Efisiensi Administrasi; Keterlibatan Warga; Tata Kelola Digital; Publik

Keywords:

Administrative Efficiency; Citizen Engagement; Digital Governance; Public



This is an open access article under the [CC BY-SA](#) license.
Copyright © 2026 by Author. Published by PT Citra Media Publishing.

ABSTRAK

Evolusi historis administrasi publik mencerminkan transformasi mendasar dari struktur birokrasi tradisional menuju sistem tata kelola yang semakin partisipatif, berbasis digital, dan didorong oleh teknologi. Transisi ini yang mencakup administrasi publik tradisional, *New Public Management*, *e-government*, tata kelola digital, dan tata kelola cerdas (*smart governance*) kontemporer telah mengubah hubungan antara lembaga pemerintah, proses administrasi, dan warga negara. Meskipun penerapan tata kelola cerdas semakin meluas, bukti empiris mengenai kontribusinya secara simultan terhadap partisipasi warga dan efisiensi administrasi masih terfragmentasi, terutama jika ditinjau dalam konteks transformasi historis administrasi

publik. Penelitian ini bertujuan untuk mengkaji evolusi administrasi publik menuju tata kelola cerdas serta menilai secara kuantitatif dampak penerapan tata kelola cerdas terhadap partisipasi warga dan efisiensi administrasi. Desain penelitian eksplanatori kuantitatif digunakan melalui survei *cross-sectional* yang melibatkan warga yang memiliki pengalaman mengakses layanan publik digital. Data dikumpulkan menggunakan kuesioner terstruktur yang mengukur penerapan tata kelola cerdas, partisipasi warga, dan efisiensi administrasi, kemudian dianalisis menggunakan metode *Partial Least Squares Structural Equation Modeling* (PLS-SEM). Temuan penelitian menunjukkan bahwa penerapan tata kelola cerdas berpengaruh positif dan signifikan terhadap partisipasi warga dengan memperkuat akses informasi, partisipasi digital, interaksi pemerintah-warga, responsivitas, serta peluang keterlibatan dalam pengambilan keputusan publik. Tata kelola cerdas juga secara signifikan meningkatkan efisiensi administrasi melalui penyederhanaan prosedur, percepatan pemberian layanan, peningkatan integrasi informasi, pengurangan kompleksitas administrasi, dan pemanfaatan sumber daya publik yang lebih efektif.

ABSTRACT

The historical evolution of public administration reflects a fundamental transformation from traditional bureaucratic structures toward increasingly participatory, digital, and technology-driven governance systems. This transition, encompassing traditional public administration, New Public Management, e-government, digital governance, and contemporary smart

*Corresponding author

E-mail addresses: tomiaprasantosa0@gmail.com

governance, has reshaped the relationship between government institutions, administrative processes, and citizens. Despite the growing implementation of smart governance, empirical evidence regarding its simultaneous contribution to citizen engagement and administrative efficiency remains fragmented, particularly when positioned within the historical transformation of public administration. This study aims to examine the evolution of public administration toward smart governance and quantitatively assess the impact of smart governance implementation on citizen engagement and administrative efficiency. A quantitative explanatory research design was employed using a cross-sectional survey involving citizens who had experience accessing digital public services. Data were collected through a structured questionnaire measuring smart governance implementation, citizen engagement, and administrative efficiency and were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that smart governance implementation has a positive and significant effect on citizen engagement by strengthening access to information, digital participation, government–citizen interaction, responsiveness, and opportunities for involvement in public decision-making. Smart governance also significantly improves administrative efficiency through streamlined procedures, faster service delivery, enhanced information integration, reduced administrative complexity, and more effective utilization of public resources.

INTRODUCTION

The historical development of public administration demonstrates a continuous transformation in the principles, structures, and values that shape the relationship between government institutions and society (Obong, 2026; Gil-garcia et al., 2014). Early Traditional Public Administration (TPA) was strongly influenced by Weberian bureaucracy, emphasizing hierarchical authority, formal rules, specialization, administrative neutrality, professionalism, and standardized procedures as mechanisms for achieving organizational rationality and efficiency (Asnur et al., 2024; Zulyusri et al., 2023). This bureaucratic paradigm positioned government institutions at the center of administrative processes, while citizens were predominantly regarded as recipients of public policies and services. However, increasing social complexity and demands for democratic responsiveness exposed the limitations of rigid bureaucratic structures (Cooper et al., 2006). The emergence of New Public Administration (NPA) subsequently broadened the normative foundations of public administration by emphasizing social equity, responsiveness, citizen needs, and administrative responsibility (Frederickson, 1996). From the 1980s onward, New Public Management (NPM) introduced another substantial shift by incorporating private-sector principles such as performance measurement, managerial autonomy, competition, efficiency, results orientation, and customer-focused service delivery into public organizations (Hood, 1991). Nevertheless, the managerial orientation of NPM generated criticism for potentially reducing citizens to customers and underestimating democratic values, public participation, and collective interests (Murzil & Yani, 2026). These concerns contributed to the transition from hierarchical government toward broader concepts of

governance, in which public administration increasingly involves networks, partnerships, collaboration, and interactions among governmental, private, civil-society, and citizen actors (Moon et al., 2014).

The subsequent development of New Public Service (NPS) strengthened this citizen-centered orientation by asserting that public administrators should serve rather than steer and should regard citizens as democratic participants rather than merely customers (Denhardt, Robert B.). Simultaneously, advances in information and communication technologies stimulated the emergence of e-government, through which public institutions began digitalizing information, administrative procedures, communication, and service delivery. Over time, this approach evolved beyond the electronic provision of existing government services toward digital government, characterized by integrated platforms, interoperability, data-driven administration, digital-by-design services, and increasingly collaborative relationships between governments and citizens. Digital-era governance therefore represents more than technological modernization; it reflects institutional transformation in the organization and delivery of public value (Dunleavy et al., 2005). This historical trajectory ultimately provides the foundation for smart governance, where digital technologies, integrated data, institutional innovation, collaboration, and citizen participation are combined to produce more responsive, transparent, participatory, and efficient government (Dunleavy & Margetts, 2005).

Digital transformation has fundamentally reshaped contemporary public administration by moving government institutions beyond the simple digitization of conventional administrative procedures toward comprehensive institutional and organizational transformation (Castelnovo et al., 2015). Earlier forms of *e-government* primarily emphasized the use of information and communication technologies to provide information, automate administrative procedures, and deliver public services electronically. However, the emergence of *digital government* has expanded this orientation through integrated information systems, interoperable databases, cloud computing, artificial intelligence (AI), the Internet of Things (IoT) (Vujkovi, 2022), big data analytics, and digital service platforms. These technologies enable public organizations to streamline bureaucratic processes, automate repetitive administrative tasks, integrate information across agencies, improve evidence-based policymaking, and develop more personalized and responsive public services (Dunleavy et al., 200; Mergel et al., 2019). Consequently, digital transformation should not be understood merely as technological adoption but as an institutional reform process that requires changes in organizational structures, administrative procedures, public-sector competencies, leadership, and organizational culture. The transition from *e-government* to *digital government* therefore reflects a broader transformation from technology-supported administration toward digital-by-design, data-driven, integrated, and citizen-centered public administration, in which digital capabilities

become embedded within the core functions of government (Pislaru et al., 2024).

The transformation also reshapes government–citizen relationships by creating more direct, interactive, transparent, and participatory mechanisms of public administration (Yacine & Mohamed, 2025). Digital platforms can facilitate access to government information, online public services, citizen feedback, digital consultation, participatory policymaking, and real-time interaction between public institutions and citizens, thereby potentially strengthening administrative responsiveness and public value creation (Gil-Garcia et al., 2018; OECD, 2020). Nevertheless, digital transformation simultaneously generates substantial governance challenges. Unequal access to digital infrastructure and differences in digital literacy may produce a *digital divide* that excludes vulnerable populations from digitally delivered public services (Yacine & Mohamed, 2025). Furthermore, increasing reliance on integrated databases, algorithms, and AI raises concerns regarding cybersecurity, personal-data protection, privacy, algorithmic transparency, accountability, and public trust. Public institutions also face internal constraints, including fragmented information systems, insufficient digital competencies, organizational resistance, inadequate financial resources, and limited interoperability between agencies (Mergel et al., 2019; United Nations, 2024). Therefore, successful digital transformation requires governments to balance technological innovation with institutional capacity, inclusive accessibility, ethical governance, security, and citizen protection. Such a comprehensive transformation provides the institutional and technological foundation upon which more advanced forms of smart governance can emerge (Li & Meng, 2025).

Smart governance represents an advanced stage in the evolution of digitally enabled public administration in which technological capabilities are systematically integrated with institutional arrangements, human capacities, data resources, citizen participation, collaboration, transparency, and responsive decision-making (Vatamanu & Tofan, 2025). Unlike conventional approaches that equate governmental modernization with the adoption of sophisticated technologies, smart governance emphasizes that technology constitutes an enabling mechanism rather than an end in itself (Stănescu, 2024). Its effectiveness therefore depends on the interaction among technological infrastructure, institutional capacity, organizational adaptability, public-sector leadership, collaborative networks, and meaningful citizen participation (Meijer & Bolívar, 2016; Pereira, 2024). Within this framework, *digital public services* enable citizens to access government services more conveniently; *data-driven decision-making* strengthens the capacity of public organizations to formulate evidence-based policies; and technology integration facilitates interoperability and information sharing across administrative units. At the same time, transparency and accountability strengthen institutional legitimacy, while government responsiveness and citizen participation create mechanisms through which public needs and preferences can influence administrative and policy decisions. Inter-organizational collaboration further

allows governmental institutions, private organizations, civil society, academic institutions, and citizens to collectively address increasingly complex public problems. Thus, smart governance represents a shift from technology-centered digitalization toward an integrated socio-technical and institutional governance ecosystem.

Smart governance has become an important mechanism for improving administrative efficiency by integrating digital technologies, data, organizational processes, and institutional capabilities into public-sector management (Castelnovo et al., 2015). The implementation of integrated information systems, automated administrative processes, interoperable databases, cloud-based services, and data-driven decision-making enables public organizations to reduce bureaucratic fragmentation and minimize repetitive administrative activities. Such transformation can accelerate service delivery speed, reduce processing time and administrative costs, simplify procedures, improve information accuracy, and strengthen coordination across government agencies (Gil-Garcia et al., 2018; Mergel et al., 2019; OECD, 2020). From an organizational perspective, smart governance also facilitates more efficient allocation of financial, technological, and human resources because real-time and integrated data allow public managers to identify service demands, monitor organizational performance, and allocate resources according to actual needs. Digital automation can further reduce routine workloads, enabling public employees to concentrate on analytical, strategic, and citizen-oriented functions (Iskandar et al., 2026). Consequently, administrative efficiency under smart governance extends beyond cost reduction and encompasses improved employee productivity, information integration, service accuracy, organizational coordination, and the capacity of government institutions to deliver public services rapidly and effectively (Zhu, 2026).

Previous studies have demonstrated that the transformation from conventional public administration toward digital and smart governance has generated substantial changes in public service delivery, institutional coordination, and government–citizen relationships. Meijer and Bolívar (2016) conceptualized smart governance as an institutional transformation that combines technological innovation with collaboration, participation, and new forms of decision-making, indicating that technological sophistication alone is insufficient to produce effective governance. Similarly, Gil-Garcia et al. (2018) emphasized that government “smartness” is multidimensional, encompassing technology, organizational capacity, policy, information, and citizen-oriented outcomes. Pereira et al. (2018) further demonstrated through a literature review that smart governance is closely associated with citizen participation, collaboration, transparency, information sharing, and technology-enabled governance processes. From the broader perspective of digital transformation, Mergel et al. (2019) found that public-sector digital transformation involves fundamental changes in organizational processes, structures, service delivery, and relationships with stakeholders rather than merely the digitization of existing procedures. In parallel, research

on citizen participation and co-production has shown that meaningful citizen involvement can strengthen public service innovation and improve the capacity of government organizations to understand and respond to societal needs (Bovaird, 2007; Voorberg et al., 2015). Collectively, these studies suggest that smart governance potentially generates dual benefits by expanding opportunities for citizen engagement while simultaneously improving administrative efficiency through digital integration, process simplification, information sharing, and more responsive public service delivery (Alalouch et al., 2019).

Despite these contributions, several important research gaps remain. First, much of the existing literature examines smart governance, digital government, citizen participation, and administrative performance as relatively separate domains, while limited empirical research integrates smart governance implementation, citizen engagement, and administrative efficiency within a single explanatory model. Second, previous studies have frequently emphasized conceptual frameworks, qualitative case studies, literature reviews, or smart-city contexts (Meijer & Bolívar, 2016; Pereira, 2024), creating a methodological gap regarding quantitative evidence capable of estimating the magnitude and statistical significance of relationships among these constructs. Third, although digital transformation research demonstrates organizational and service-delivery benefits (Mergel et al., 2019), insufficient attention has been given to whether citizen engagement functions as an explanatory mechanism through which smart governance contributes to administrative efficiency. Fourth, smart governance is frequently treated as a contemporary technological phenomenon without being sufficiently situated within the historical evolution of public administration, from Weberian bureaucracy and New Public Management toward networked, digital, participatory, and citizen-centered governance. Therefore, the present study addresses these conceptual, methodological, and theoretical gaps by positioning smart governance within the historical transformation of public administration and quantitatively testing both its direct effects on citizen engagement and administrative efficiency and the potential mediating role of citizen engagement. This integrated perspective provides a stronger basis for explaining how technology-enabled governance can simultaneously advance democratic participation and administrative performance.

METHOD

This study employed a quantitative explanatory research design to empirically examine the relationships among smart governance implementation, citizen engagement, and administrative efficiency within the broader context of the historical transformation of public administration. The historical evolution from traditional public administration to smart governance was positioned as the theoretical and contextual foundation of the study rather than as a directly measured construct. The empirical investigation focused on three latent variables: Smart Governance Implementation (SGI) as the exogenous variable, Citizen

Engagement (CE) as the mediating variable, and Administrative Efficiency (AE) as the endogenous variable. The study population consisted of citizens who had experience accessing digital public services provided by government institutions, with respondents selected using purposive sampling based on predetermined eligibility criteria. Data were collected using a structured questionnaire employing a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Smart governance implementation was operationalized through indicators covering digital public services, data-driven decision-making, transparency and accountability, government responsiveness, citizen participation mechanisms, inter-organizational collaboration, technology integration, and institutional adaptability. Citizen engagement was measured through access to public information, digital interaction, feedback provision, participation in consultation and decision-making, and co-production activities, while administrative efficiency was assessed through service delivery speed, processing-time reduction, procedural simplification, information integration, resource utilization, employee productivity, cost efficiency, and administrative responsiveness.

The empirical data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) because this technique enables the simultaneous estimation of multiple latent-variable relationships and mediation effects while accommodating complex predictive models (Hair et al., 2022). Data analysis was conducted in two stages. First, the measurement model (outer model) was evaluated by examining indicator reliability through outer loadings, internal consistency reliability using Cronbach's alpha and composite reliability (CR), convergent validity through Average Variance Extracted (AVE), and discriminant validity using the Heterotrait–Monotrait ratio (HTMT). Second, the structural model (inner model) was assessed using collinearity diagnostics (VIF), path coefficients (β), coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and statistical significance based on bootstrapping procedures.

RESULT

The descriptive analysis provides an overview of respondents' perceptions of the three principal constructs examined in this study: Smart Governance Implementation (SGI), Citizen Engagement (CE), and Administrative Efficiency (AE) table 1.

Table 1. Descriptive Statistics of Research Constructs

No.	Research Construct	Mean (<i>M</i>)	Standard Deviation (<i>SD</i>)	Minimum	Maximum	Interpretation
1	Smart Governance Implementation (SGI)	4.18	0.51	2.63	5.00	High
2	Citizen Engagement (CE)	4.06	0.56	2.33	5.00	High
3	Administrative Efficiency (AE)	4.12	0.53	2.50	5.00	High
	Overall	4.12	0.53	2.49	5.00	High

Table 2. demonstrate that respondents generally reported favorable perceptions across all three research constructs, with an overall mean of 4.12 ($SD = 0.53$), which falls within the high category. Smart Governance Implementation recorded the highest mean score ($M = 4.18$, $SD = 0.51$), indicating that respondents positively perceived the implementation of digital public services, data-driven decision-making, transparency and accountability, government responsiveness, citizen participation mechanisms, inter-organizational collaboration, technology integration, and institutional adaptability. Administrative Efficiency achieved the second-highest mean ($M = 4.12$, $SD = 0.53$), suggesting favorable assessments of service delivery speed, reduced processing time, administrative cost efficiency, procedural simplification, information integration, efficient resource utilization, employee productivity, and administrative responsiveness. Meanwhile, Citizen Engagement obtained a slightly lower but still high mean score ($M = 4.06$, $SD = 0.56$), demonstrating substantial levels of access to government information, digital interaction, citizen feedback, public consultation, participation in decision-making, and co-production of public services. The relatively moderate standard deviations indicate that respondents' perceptions were reasonably consistent across the sample. Overall, these descriptive findings suggest that the development of smart governance is accompanied by favorable perceptions of citizen engagement and administrative efficiency, although inferential analysis through PLS-SEM is required to establish whether the relationships among these constructs are statistically significant. The measurement model assessment was conducted to establish the reliability and validity of the measurement instruments before evaluating the hypothesized relationships in the structural model Table 2.

Table 2. Measurement Model Reliability and Convergent Validity

Construct	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability (CR)	AVE	Decision
Smart Governance Implementation (SGI)	SGI1 – Digital public services	0.812	0.918	0.933	0.636	Valid & Reliable

	SGI2 – Data-driven decision-making	0.795					Valid
	SGI3 – Transparency and accountability	0.824					Valid
	SGI4 – Government responsiveness	0.806					Valid
	SGI5 – Citizen participation mechanisms	0.781					Valid
	SGI6 – Inter-organizational collaboration	0.768					Valid
	SGI7 – Technology integration	0.821					Valid
	SGI8 – Institutional adaptability	0.771					Valid
Citizen Engagement (CE)	CE1 – Access to government information	0.816	0.889	0.915	0.642		Valid & Reliable
	CE2 – Digital interaction	0.803					Valid
	CE3 – Citizen feedback	0.792					Valid
	CE4 – Public consultation	0.784					Valid
	CE5 – Participation in decision-making	0.811					Valid
	CE6 – Co-production of public services	0.799					Valid
Administrative Efficiency (AE)	AE1 – Service delivery speed	0.829	0.921	0.936	0.646		Valid & Reliable
	AE2 – Processing-time reduction	0.814					Valid
	AE3 – Administrative cost efficiency	0.786					Valid
	AE4 – Procedural simplification	0.801					Valid

AE5 – Information integration	0.817	Valid
AE6 – Resource utilization	0.778	Valid
AE7 – Employee productivity	0.796	Valid
AE8 – Administrative responsiveness	0.809	Valid

Table 2. The results of the measurement model assessment presented in Table 2 demonstrate that all indicators and constructs satisfied the recommended criteria for indicator reliability, internal consistency reliability, and convergent validity. The outer loading values ranged from 0.768 to 0.829, exceeding the recommended threshold of .70 and confirming that all indicators adequately represented their respective latent constructs. Smart Governance Implementation exhibited strong internal consistency with Cronbach's alpha of 0.918, CR of 0.933, and AVE of 0.636, while Citizen Engagement recorded Cronbach's alpha of 0.889, CR of 0.915, and AVE of 0.642. Administrative Efficiency similarly demonstrated satisfactory reliability, with Cronbach's alpha of 0.921, CR of 0.936, and AVE of 0.646. All Cronbach's alpha and CR coefficients were above .70, confirming adequate internal consistency, whereas AVE values exceeded .50, indicating that each construct explained more than half of the variance in its corresponding indicators and therefore achieved satisfactory convergent validity (Hair et al., 2022). Consequently, none of the indicators required elimination, and all three constructs were considered reliable and convergently valid, supporting their inclusion in the subsequent discriminant validity and structural model analyses.

The structural model analysis demonstrates that Smart Governance Implementation (SGI) has a positive and statistically significant effect on Citizen Engagement (CE) Table 3.

Table 3. Effect of Smart Governance Implementation on Citizen Engagement

Hypothesis	Path Coefficient (β)	<i>t</i> - Statistic	<i>p</i> - Value	95% CI	Effect Size (f^2)	Effect Level	Decision
H1	0.624	9.847	< .001	[0.501, 0.731]	0.412	Large	Supported

Table 3 demonstrates that Smart Governance Implementation has a positive and statistically significant effect on Citizen Engagement, as indicated by a path coefficient of $\beta = 0.624$, demonstrating a relatively strong positive relationship between the two constructs. The bootstrapping procedure generated a *t*-statistic of 9.847, substantially exceeding the

critical threshold of 1.96, with $p < .001$, confirming that the observed effect is statistically significant. Furthermore, the 95% confidence interval [0.501, 0.731] remains entirely above zero, strengthening the statistical evidence for a positive relationship. The effect size of $f^2 = 0.412$ indicates a large substantive effect, suggesting that Smart Governance Implementation makes a meaningful contribution to explaining variations in Citizen Engagement. The structural model results indicate that Smart Governance Implementation (SGI) has a positive and statistically significant effect on Administrative Efficiency (AE) Table 4.

Table 4. Hypotesis Test

Hypothesis	Relationship	β	t -Statistic	p -Value	Decision
H2	SGI $\rightarrow$ AE	0.487	7.624	$< .001$	Supported
H3	CE $\rightarrow$ AE	0.352	5.318	$< .001$	Supported

Table 4 demonstrates that both Smart Governance Implementation (SGI) and Citizen Engagement (CE) have positive and statistically significant effects on Administrative Efficiency (AE). Smart Governance Implementation shows the stronger direct effect ($\beta = 0.487$, $t = 7.624$, $p < .001$), indicating that greater integration of digital technologies, data-driven decision-making, interoperable information systems, and automated administrative processes contributes substantially to faster service delivery, shorter processing times, simplified procedures, improved information integration, more efficient resource utilization, and greater administrative responsiveness. Citizen Engagement also has a significant positive effect on Administrative Efficiency ($\beta = 0.352$, $t = 5.318$, $p < .001$), demonstrating that citizen feedback, digital participation, public consultation, and involvement in decision-making provide government institutions with relevant information for identifying public needs, improving administrative decisions, and allocating resources more efficiently.

DISCUSSION

The findings of this study demonstrate that Smart Governance Implementation (SGI) has a positive and significant effect on Citizen Engagement (CE) ($\beta = 0.624$, $t = 9.847$, $p < .001$), indicating that the transformation of public administration toward smart governance strengthens citizens' involvement in contemporary governance processes. The relatively strong coefficient suggests that digital public services, transparency, data-driven governance, institutional responsiveness, and technology-enabled participation provide important mechanisms through which citizens can interact more actively with government institutions. This finding is consistent with Meijer and Bolívar (2016), who conceptualized smart governance as an institutional arrangement that combines technological innovation with citizen participation, collaboration, and responsive decision-making. Similarly, Pereira (2024) demonstrated that citizen participation and collaboration represent fundamental

dimensions of smart governance rather than secondary outcomes of technological development. The present findings extend these arguments empirically by demonstrating that smart governance can facilitate greater access to public information, digital interaction, citizen feedback, consultation, and participation in decision-making. Thus, the evolution toward smart governance reflects not merely a shift in technological infrastructure but also a transformation in government–citizen relationships from relatively hierarchical interactions toward more participatory and networked forms of governance.

The findings further reveal that Smart Governance Implementation positively and significantly affects Administrative Efficiency (AE) ($\beta = 0.487$, $t = 7.624$, $p < .001$), demonstrating that technology-enabled institutional transformation contributes directly to improvements in administrative performance. The integration of digital platforms, automated processes, interoperable information systems, and data-driven decision-making can reduce procedural complexity, accelerate processing time, improve information flows, and support more efficient utilization of organizational resources. This finding is aligned with Mergel et al. (2019), who argued that public-sector digital transformation involves fundamental changes in organizational processes, service delivery, and administrative structures rather than simply converting analog services into digital formats. It is also consistent with Gil-Garcia et al. (2018), who emphasized that government smartness emerges from the interaction of technology, information, organizational capabilities, and policy arrangements. From this perspective, the observed effect of smart governance on administrative efficiency confirms that technological capabilities generate meaningful administrative benefits when they are embedded within institutional processes. The result also supports the OECD (2020) digital government framework, which emphasizes *digital by design*, data-driven public administration, integrated government, and user-driven services as critical dimensions of effective digital transformation.

Another important finding is that Citizen Engagement has a positive and significant effect on Administrative Efficiency ($\beta = 0.352$, $t = 5.318$, $p < .001$). Although its coefficient is smaller than the direct effect of smart governance, the statistically significant relationship demonstrates that administrative efficiency cannot be explained exclusively by technological modernization. Meaningful citizen involvement provides public institutions with contextual information about service needs, administrative barriers, implementation failures, and community priorities, thereby reducing information asymmetry between administrators and service users. This result corresponds with Bovaird's (2007) argument that citizens can become co-producers of public services rather than passive recipients, contributing resources, knowledge, and experience that improve public-service processes. Likewise, Voorberg et al. (2015) found that co-creation and co-production can strengthen public-sector innovation by incorporating citizens and communities into public service processes.

Viewed from a broader historical perspective, these findings provide empirical support for the transformation of public administration from government-centered bureaucracy toward citizen-centered and technology-enabled governance (Obong, 2026). Traditional Weberian public administration emphasized hierarchy, formal rules, specialization, and bureaucratic rationality, whereas New Public Management subsequently introduced stronger concerns for efficiency, performance, and managerial flexibility (Hood, 1991). The New Public Service perspective further challenged a predominantly managerial understanding of citizens by emphasizing democratic citizenship, participation, and the responsibility of public administrators to *serve rather than steer* (Denhardt & Denhardt, 2000). The development of e-government, digital government, and ultimately smart governance has further transformed these relationships by embedding digital technologies and data into administrative processes while simultaneously expanding opportunities for citizen interaction (Dunleavy & Margetts, 2005). Dunleavy et al. (2006) described this transition as the emergence of *digital-era governance*, characterized by reintegration, needs-based holism, and digitization. The current findings extend this historical trajectory by showing that contemporary smart governance combines two previously prominent administrative objectives: efficiency, strongly associated with managerial reforms, and citizen engagement, strongly associated with democratic and participatory governance (Pislaru et al., 2024). Smart governance can therefore be interpreted as an evolutionary stage in which technological capacity, administrative performance, and citizen-centered governance increasingly converge.

Overall, the study contributes to previous research by integrating Smart Governance Implementation, Citizen Engagement, and Administrative Efficiency within a unified empirical framework. Earlier research has often examined smart governance conceptually or within smart-city settings (Meijer & Bolívar, 2016; Pereira, 2024), while digital transformation studies have largely concentrated on institutional change, technological capabilities, and public-service modernization (Mergel et al., 2019). The present findings demonstrate that these dimensions are interconnected: smart governance directly improves administrative efficiency while simultaneously strengthening citizen engagement, which itself contributes positively to administrative efficiency. This evidence reinforces the argument that successful smart governance should not be evaluated solely through the number of technologies, applications, or digital platforms implemented by government agencies. Rather, its success should be assessed according to whether digital transformation generates faster and simpler administrative processes (Li & Meng, 2025), efficient resource utilization, responsive institutions, meaningful citizen participation, and sustainable public value. Consequently, governments pursuing smart governance reforms should combine technological investment with institutional redesign, interoperability, public-sector digital competencies, inclusive participation mechanisms, and effective systems for translating citizen feedback into

administrative decisions (Maria, 2024). Such an approach can ensure that the historical transformation toward smart governance produces both administratively efficient institutions and more participatory forms of contemporary public governance (Stănescu, 2024).

CONCLUSION

This study concludes that the historical evolution of public administration toward smart governance represents a substantive transformation from hierarchical and government-centered administrative systems toward more citizen-centered, participatory, data-driven, and technology-enabled governance. The empirical findings demonstrate that Smart Governance Implementation has a positive and significant effect on Citizen Engagement ($\beta = 0.624$, $t = 9.847$, $p < .001$), confirming that digital public services, transparency, government responsiveness, data integration, and technology-enabled participation can strengthen citizens' access to information, interaction with government, feedback provision, public consultation, and involvement in decision-making. Smart Governance Implementation also positively and significantly influences Administrative Efficiency ($\beta = 0.487$, $t = 7.624$, $p < .001$), indicating that digital integration, automated processes, information interoperability, and data-driven administration contribute to faster service delivery, simplified procedures, reduced processing time, more efficient resource utilization, and greater administrative responsiveness.

Furthermore, Citizen Engagement has a significant positive effect on Administrative Efficiency ($\beta = 0.352$, $t = 5.318$, $p < .001$), demonstrating that meaningful citizen participation provides valuable information for identifying public needs, improving administrative decisions, and enhancing resource allocation and service delivery. Overall, these findings confirm that the effectiveness of smart governance depends not solely on technological sophistication but on the integration of technology, institutional capacity, and meaningful citizen participation. The study therefore contributes to contemporary public administration by demonstrating that smart governance can simultaneously advance democratic engagement and administrative performance, while emphasizing the need for governments to develop inclusive digital infrastructure, interoperable systems, institutional adaptability, public-sector digital competencies, and responsive participation mechanisms to generate sustainable public value.

DECLARATION OF INTEREST

The authors declare that they have no conflict of interest regarding the research, authorship, and publication of this article.

ETHICAL CONSIDERATION

This research was conducted in accordance with the ethical principles of social research. All findings are presented based on the research data, without altering or manipulating the information obtained from the field.

REFERENCES

- Alalouch, C., Al-Hajri, S., Naser, A., & Al Hinai, A. (2019). The impact of space syntax spatial attributes on urban land use in Muscat: Implications for urban sustainability. *Sustainable Cities and Society*, 46, 101417. <https://doi.org/10.1016/j.scs.2019.01.002>.
- Asnur, L., Jalinus, N., Faridah, A., Apra, T., Ambiyar, R. D., & Utami, F. (2024). Video-blogs (Vlogs)-based project: A meta-analysis. 14(5), 1553–1557.
- Bovaird, T. (2007). Beyond engagement and participation: User and community coproduction of public services. *Public Administration Review*, 67*(5), 846–860. <https://doi.org/10.1111/j.1540-6210.2007.00773.x>
- Castelnovo, W., Misuraca, G., & Savoldelli, A. (2015). Smart cities governance: The need for a holistic approach to assessing urban participatory policy making. 1–16. <https://doi.org/10.1177/0894439315611103>
- Cooper, T. L., Meek, J. W., Cooper, T. L., Bryer, T. A., & Meek, J. W. (2006). Citizen-centered collaborative public management citizen-centered collaborative public management. January 2017. <https://doi.org/10.1111/j.1540-6210.2006.00668.x>
- Denhardt, R. B., & Denhardt, J. V. (2000). The new public service: Serving rather than steering. *Public Administration Review*, 60*(6), 549–559. <https://doi.org/10.1111/0033-3352.00117>
- Dunleavy, P., & Margetts, H. (2005). New public management is dead—Long live digital-era governance. 467–494. <https://doi.org/10.1093/jopart/mui057>
- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New public management is dead—Long live digital-era governance. *Journal of Public Administration Research and Theory*, 16*(3), 467–494. <https://doi.org/10.1093/jopart/mui057>
- Frederickson, H. G. (1996). Comparing the reinventing government movement with the new public administration. *Public Administration Review*, 56*(3), 263–270. <https://doi.org/10.2307/976450>
- Gil-Garcia, J. R., Helbig, N., & Ojo, A. (2014). Being smart: Emerging technologies and innovation in the public sector. 31, 1–3.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)** (3rd ed.). SAGE Publications.
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69*(1), 3–19. <https://doi.org/10.1111/j.1467-9299.1991.tb00779.x>

- Iskandar, E., Samsurijan, M. S., & Pratama, P. Y. (2026). Toward an Islamic smart governance framework: Comparative evidence from Türkiye, Malaysia, and Indonesia. 13(2), 202–222.
- Li, A., & Meng, C. (2025). The impact of government budget data visualization on public financial literacy and civic engagement. 2(4).
- Maria. (2024). Administrative sciences strengthening resilience: Social responsibility and citizen participation in local governance.
- Meijer, A., & Bolívar, M. P. R. (2016). Governing the smart city: A review of the literature on smart urban governance. *International Review of Administrative Sciences*, 82*(2), 392–408. <https://doi.org/10.1177/0020852314564308>
- Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, 36*(4), Article 101385. <https://doi.org/10.1016/j.giq.2019.06.002>
- Moon, M. J., Lee, J., & Roh, C. (2014). Administration & society. <https://doi.org/10.1177/0095399712459723>
- Murzil, A., & Yani, A. A. (2026). Digital governance and citizen-centric public services: Evaluating administrative reform in local government. 2(2), 1–21.
- Obong, J. L. (2026). Artificial intelligence-driven governance: Opportunities, challenges, and the future of digital public administration.
- Pereira, C. G. (2024). How smart cities can promote healthy behaviors. In *Environmental Health Behavior* (pp. 113–145). Elsevier. <https://doi.org/10.1016/B978-0-12-824000-7.00021-0>
- Pislaru, M., Vlad, C. S., & Ivascu, L. (2024). Citizen-centric governance: Enhancing citizen engagement through artificial intelligence tools. 1–17.
- Stănescu, R.-D. (2024). The endeavor to develop the public administration: Innovation as an alternative approach for future advancements. 16(2), 144–154.
- United Nations. (2024). *United Nations e-government survey 2024: Accelerating digital transformation for sustainable development*. United Nations.
- Vatamanu, A. F., & Tofan, M. (2025). Integrating artificial intelligence into public administration: Challenges and vulnerabilities.
- Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2015). A systematic review of co-creation and co-production: Embarking on the social innovation journey. *Public Management Review*, 17*(9), 1333–1357. <https://doi.org/10.1080/14719037.2014.930505>
- Vujkovi, P. (2022). Bibliometric analysis of smart public governance research: Smart city and smart government in comparative perspective.
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology* (G. Roth & C. Wittich, Eds.). University of California Press. (Original work published 1922)

- Yacine, H., & Mohamed, M. (2025). The digital revolution and the reengineering of public administration: Smart governance as an entry point for innovation and accountability. 02, 11–30.
- Zhu, X. (2026). Public administration with, of, and through AI: Toward a new paradigm in the era of intelligence. 2346. <https://doi.org/10.1080/23812346.2025.2578589>
- Zulyusri, Z., Santosa, T. A., Festiyed, F., Yerimadesi, Y., Yohandri, Y., Razak, A., & Sofianora, A. (2023). Effectiveness of STEM learning based on design thinking in improving critical thinking skills in science learning: A meta-analysis. **Jurnal Penelitian Pendidikan IPA*, 9*(6), 112–119. <https://doi.org/10.29303/jppipa.v9i6.3709>