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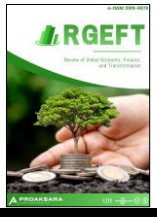

Smart Governance in the Digital Era: International Experiences and Policy Implications for Vietnam

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ABSTRACT

In the context of rapid digital transformation and accelerating urbanization, smart governance has increasingly been recognized as a critical pillar for enhancing public governance effectiveness, service quality, and citizen participation. This paper examines the concept and core components of smart governance in the digital era, while synthesizing and comparing implementation experiences from selected countries, including South Korea, Singapore, Austria, and Sweden. Employing a research methodology that combines literature review, policy analysis, and comparative case studies, the study highlights the pivotal roles of flexible legal frameworks, interoperable data governance, user-centered service design, and controlled experimental mechanisms in advancing smart governance. The findings suggest that smart governance extends beyond the mere application of digital technologies, representing a comprehensive process of institutional, procedural, and relational transformation among the state, businesses, and citizens. Based on these insights, the paper derives key lessons learned and policy implications for Vietnam in refining its smart governance model, thereby contributing to sustainable development and enhancing national competitiveness in the digital era.

Keywords: Digital Government, Smart Governance, Vietnam

1. INTRODUCTION

The Fourth Industrial Revolution has fundamentally disrupted traditional models of public governance, compelling governments worldwide to rethink how they deliver services, engage citizens, and ensure accountability in an increasingly digital society. The rapid advancement of digital technologies such as artificial intelligence (AI), big data, the Internet of Things (IoT), and cloud computing has fostered the emergence and evolution of smart governance, aimed at enhancing the effectiveness of public administration, the quality of public services, and the level of citizen participation in decision-making processes.

Smart governance extends beyond the mere application of information and communication technologies in public management; it encompasses comprehensive innovations in institutional arrangements, administrative processes, governance capacities, and managerial mindsets within the public sector. This model emphasizes a citizen-centric approach, strengthens transparency and accountability, improves governmental responsiveness, and promotes collaboration among key stakeholders within the governance ecosystem, including the state, businesses, and civil society.

Figure 1. Best e-governance practices around the world
Source: Adapted from Frost & Sullivan Institute

As illustrated in Figure 1, leading countries in e-governance have established foundational capabilities that enable the transition toward more sophisticated smart governance models. Globally, many countries have achieved notable accomplishments in the implementation of smart governance, including Japan, the Republic of Korea, Singapore, and Austria. These countries are characterized by high levels of development, robust technological foundations, well-defined digital transformation strategies, and diverse approaches to public governance. Japan has prioritized the development of "Society 5.0" emphasizing the integration of digital technologies to address societal challenges; the Republic of Korea stands out for its data-driven e-government and digital government model; Singapore is widely regarded as a benchmark for smart nations due to its flexible, efficient, and innovation oriented governance system; while Austria represents a leading European example of comprehensive e-government development, ensuring inclusiveness and accessibility for all population groups.

For Vietnam, smart governance has become a strategic priority within the broader national digital transformation agenda. This orientation is clearly articulated in Resolution No. 52-NQ/TW (2019) on the Fourth Industrial Revolution and Decision No. 749/QĐ-TTg (2020) approving the National Digital Transformation Program toward 2025, with a vision to 2030, which identifies digital government, digital economy, and digital society as key pillars of development. In recent years, Vietnam has made measurable progress. According to the United Nations E-Government Development Index (EGDI), the country has steadily improved its ranking between 2008 and 2024. The nationwide rollout of the VNeID digital identity platform and the establishment of national population databases further demonstrate strong governmental commitment to digital modernization. Despite notable initial achievements, the implementation of smart governance in Vietnam continues to face multiple challenges, including institutional constraints, limitations in human resources and technological infrastructure, as well as insufficient inter-agency coordination and citizen engagement. In this context, examining international experiences particularly from pioneering countries with diverse institutional and socio-economic settings holds significant value for deriving lessons tailored to Vietnam's practical conditions. Against this backdrop, this paper aims to analyze international experiences in smart governance in the digital era through the cases of Sweden, the Republic of Korea, Singapore, and Austria, and to propose policy implications and practical lessons for Vietnam in the process of developing and refining its smart governance model.

2. LITERATURE REVIEW

2.1. Literature Review

Smart governance is widely regarded as a central pillar of the smart city model and has increasingly attracted the attention of both scholars and policymakers. Early studies primarily focused on clarifying the conceptual foundations and theoretical underpinnings of smart governance, particularly in relation to e-government and smart government. Notably, Pereira et al. (2018) conceptualize smart governance as an emerging field of research, emphasizing the foundational role of smart government in shaping smart

governance models through the application of information and communication technologies (ICTs). According to these authors, smart governance goes beyond the mere adoption of ICT in public management; it involves the strategic use of digital technologies to enhance decision-making processes by fostering stronger collaboration among governments, citizens, and other stakeholders. Digital tools such as social media and open data are identified as key enablers of citizen participation, transparency, and the emergence of new governance arrangements in the context of the digital society.

Building on this foundation, Bolívar and Meijer (2016) further expand and systematize the conceptual framework of smart governance, addressing the fragmented and inconsistent nature of academic understanding in this field. Through a systematic review of the literature combined with empirical research conducted across European local governments, the authors conceptualize smart governance as a multidimensional construct encompassing determinants, implementation strategies, and expected outcomes. This work makes a significant contribution by developing an integrative research model that elucidates the relationships between smart governance arrangements, implementation strategies, and governance outcomes, thereby adding analytical depth to the conceptual approach advanced by Pereira et al. (2018).

Recent studies have shifted their focus from conceptual clarification toward assessing the role of smart governance in addressing complex and sustainability-related urban challenges. Almulhim and Yigitcanlar (2025) conceptualize smart governance as a transformative mode of governance that integrates advanced digital technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain to enhance decision-making quality, public service delivery, transparency, and citizen participation. Through a systematic literature review following the PRISMA methodology, the study reveals that although smart governance is often expected to serve as a pathway toward sustainable and inclusive cities, existing research remains fragmented, particularly with regard to explicating the relationship between smart governance and urban sustainability. To address this gap, the authors propose a multidimensional theoretical framework that integrates governance, technology, and sustainability, emphasizing the need to balance technological innovation with social equity and institutional capacity, while explicitly linking smart governance to the Sustainable Development Goals (SDGs), especially SDG 11.

Complementing studies that predominantly focus on developed-country contexts, Tan and Taeihagh (2020) extend the discussion to developing countries, where the implementation of smart cities and smart governance faces substantial socio-economic and institutional constraints. Based on a systematic review of 56 studies, the authors argue that technology-driven smart city solutions can only be effective when accompanied by coordinated legal, institutional, and human-capacity reforms, as well as measures to ensure digital inclusion. These findings underscore that smart governance should not be viewed merely as a technological issue but rather as an element embedded within a broader governance ecosystem encompassing citizen participation, public-private partnerships, and sustainability-oriented policies.

Overall, the literature indicates a clear shift in smart governance research from defining concepts and theoretical structures toward analyzing smart governance as a strategic instrument for addressing urban challenges and promoting sustainable development. Nevertheless, there remains a lack of integrative studies that examine how smart governance models can be operationalized across diverse institutional contexts and levels of development, particularly in developing countries such as Vietnam.

2.2. Theoretical Background

Smart governance is commonly understood as the effective application of digital technologies and data to enhance the quality of decision-making, improve public service delivery, strengthen transparency, and promote citizen participation in public and corporate governance. Within the context of smart cities, smart governance is viewed as the intelligent use of information and communication technologies (ICTs) to improve decision-making processes by fostering enhanced collaboration among governments, citizens, and other stakeholders. According to several scholars, smart urban governance is not solely technology-driven; rather, it emphasizes the design of new forms of human collaboration enabled by ICTs, thereby simultaneously improving governance effectiveness and ensuring more open and transparent governance processes (Bolívar & Meijer, 2016; Pereira et al., 2018). Recent research models further affirm that smart governance constitutes a core pillar of smart cities and represents a critical pathway toward achieving the Sustainable Development Goals (SDGs), particularly through citizen-centric digital transformation processes (Furtado et al., 2023).

The core components of smart governance can be categorized into three interrelated dimensions that interact closely with one another. First, technology and data serve as the foundational layer, encompassing the application of advanced digital technologies such as artificial intelligence (AI), the Internet of Things (IoT), big data, integrated digital platforms, and decision-support dashboards. Alongside these technologies, e-government models and the utilization of data derived from social media enable the real-time collection, analysis, and use of information, thereby enhancing the predictive and steering capacities of the public sector (Dai et al., 2025; Lin, 2018). Second, governance processes are restructured toward data-driven and evidence-based decision-making, with an emphasis on strengthened inter-agency and cross-sectoral coordination and the establishment of rapid, real-time feedback mechanisms. Smart urban governance models are characterized by their dynamic and adaptive nature, allowing policies and modes of governance to be continuously adjusted in response to changing socio-economic conditions and evolving citizen needs (Dunleavy & Margetts, 2025; Przeybilovicz & Cunha, 2024). Third, public value constitutes the ultimate objective of smart governance, reflected in enhanced transparency and accountability, improved efficiency and quality of public service delivery, the promotion of social inclusion, and the expansion of citizen and stakeholder participation in policy co-creation and implementation processes (Oprea (Bîrlă) & Kaur, 2025; Pereira et al., 2018).

3. RESEARCH METHODS

This study adopts a qualitative research approach, combining a systematic literature review with a comparative case study method to examine smart governance models and international experiences, thereby deriving lessons relevant to the Vietnamese context. First, a systematic review of the literature on smart governance, digital government, and smart cities was conducted, drawing on scholarly articles published in leading international journals, as well as reports from international organizations and government agencies. This review provides the theoretical foundation and analytical framework for the study, while also identifying the core components of smart governance, including technology and data, governance processes, public value, and citizen participation.

Based on this foundation, four representative countries Singapore, Sweden, the Republic of Korea, and Austria were selected for in-depth case analysis. The selection of these cases was guided by three main criteria: (i) a high level of development and notable achievements in the implementation of smart governance; (ii) diversity in institutional contexts, scale, and governance models (Asia-Europe, city-state-nation-state, and traditional nation-state models); and (iii) the potential to generate transferable lessons for developing countries such as Vietnam. Case study data were collected from national strategies, legal documents, policy reports, speeches by policymakers, and other reliable secondary sources. While several advanced economies, including Japan, have made significant progress in digital transformation, Sweden was selected in place of Japan due to its distinctive governance model characterized by high institutional trust, decentralized administrative autonomy, and a strong emphasis on sustainability and "trust-by-design" digital infrastructure. This provides analytical contrast to Singapore's centralized, state-driven model and South Korea's legislation-embedded smart city framework. The inclusion of Austria further adds a life-event-based, proactive service automation model within the European Union context. Together, these cases allow for structured comparison across different governance logics rather than merely across levels of technological advancement.

Subsequently, a comparative analysis was conducted to identify similarities and differences in smart governance approaches across the selected countries, focusing on key dimensions such as digital identity and data infrastructure, automation of public services, the role of emerging technologies particularly artificial intelligence (AI) inter-agency coordination mechanisms, institutional frameworks, and the degree of citizen-centricity. Through this comparative process, the study identifies core success factors as well as the institutional conditions necessary for the effective implementation of smart governance. Finally, based on the findings from the international analysis, the study employs inductive reasoning and analytical generalization to propose policy implications and practical lessons for Vietnam. These lessons are contextualized within Vietnam's ongoing digital transformation, administrative reform, and digital government development, thereby ensuring their feasibility and alignment with the country's socio-economic conditions.

4. RESULTS AND DISCUSSION

4.1. The Case of Singapore

How does a resource-scarce city-state transform digital infrastructure into a strategic pillar of national competitiveness? Singapore's answer lies in treating digital identity and data governance as core public infrastructure, equivalent in importance to ports, airports, and financial systems. Singapore is a sovereign city-state located at the southern tip of the Malay Peninsula in Southeast Asia. Despite its limited land area, the country has a high population density, with an estimated population of approximately 6.2 million in 2025. Singapore's economy is highly developed and operates under a free-market model, in which financial services and international trade play a central role. The country is widely recognized as one of the world's leading financial hubs, with GDP per capita ranking among the highest globally. In addition, Singapore is a major maritime hub with an open, export-oriented economy and has emerged as a regional and global leader in the application of digital technologies to socio-economic development. Building on its small territorial scale but strong governance capacity and high level of development, Singapore early on identified smart government as a strategic priority to enhance public sector efficiency, improve public service delivery, and strengthen national competitiveness in the digital era.

Within its smart governance framework, Singapore regards Singpass as the core digital identity infrastructure linking citizens, data, and public services. Established in 2003, Singpass has undergone continuous upgrades and currently connects more than 1,400 services daily across over 340 public and private sector organizations, serving as a central platform for population management and digital public service delivery. The introduction of two-factor authentication (2FA) in 2016, followed by the integration of biometric technologies, facial verification, and digital signatures in recent years, has significantly enhanced the security and reliability of the system.

On this foundation, Singpass enables citizens to conveniently access essential public services such as taxation, social security, business registration, healthcare, and education, while substantially reducing paperwork and shortening processing times. With more than 2.5 million active users out of an estimated population of around 4 million residents, Singpass has achieved a high level of adoption, reflecting both digital readiness and public trust in digital government. During the COVID-19 pandemic, the platform was further integrated with the SafeEntry system to support contact tracing, thereby contributing to real-time mobility management and more effective social governance.

Alongside Singpass, the MyInfo system plays a critical role in personal data governance and interoperable data sharing between public agencies and the private sector. Through MyInfo, citizens can conduct transactions such as opening bank accounts, applying for credit cards, or accessing government services without repeatedly submitting documentation, as personal data are automatically retrieved from authoritative government sources such as the Inland Revenue Authority of Singapore (IRAS) and shared only with the user's explicit consent. The integration of Singpass and MyInfo enables secure identity authentication and automatic form-filling, thereby reducing data duplication, saving time, and enhancing the efficiency of public service delivery.

Notably, Singapore places data security and citizen control at the core of system design. Measures such as encryption, multi-factor authentication, biometric verification, and access-rights monitoring mechanisms help mitigate fraud and prevent unauthorized access, even in cases where login credentials are compromised. Citizens are empowered to monitor, manage, and revoke access to their personal data when necessary. As a result, Singapore has established a high standard of public-sector data governance, contributing to the development of a secure, transparent, and sustainable digital ecosystem an exemplary manifestation of citizen-centric smart governance. To further illustrate the technological trends shaping the foundations of smart governance in the digital era, Figure 2 summarizes key emerging technologies that play a pivotal role in digital transformation and smart urban development.

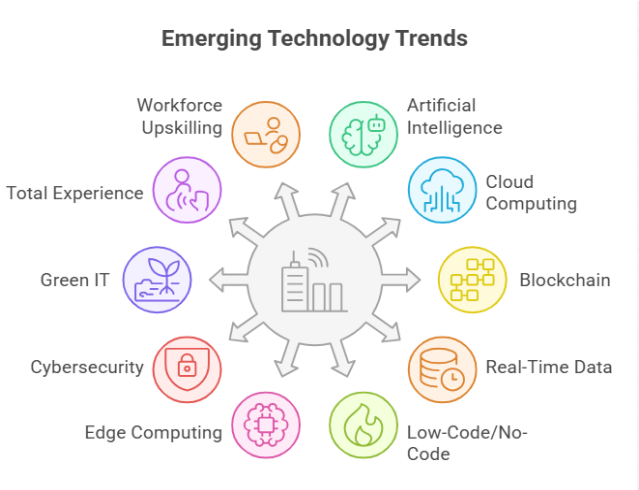

Figure 2. Ten key digital transformation trends shaping Singapore in 2025

4.2. The Case of Sweden

What does smart governance look like when trust is treated not as an outcome, but as a design principle? Sweden's 2025 digital government strategy offers a compelling model in which efficiency, resilience, and sustainability are embedded into institutional architecture from the outset. Sweden is a highly developed Nordic country located on the Scandinavian Peninsula, with an area of approximately 450,000 km² and an estimated population of about 10.5 million in 2025. Its capital, Stockholm, serves as the nation's political, economic, and cultural center. Sweden operates under a constitutional monarchy with a stable parliamentary democracy and is widely recognized for its high quality of life, comprehensive welfare system, and strong economic competitiveness, particularly in the service, industrial, and technology sectors.

In 2025, Sweden marked a significant transition from a fragmented, agency-based approach to digital development toward a unified digital state operating at a production level. This strategy reflects a mature smart governance paradigm built upon four core pillars: (i) the integration of artificial intelligence (AI) into routine public sector operations; (ii) the realization of a "single-entry point" vision with mobile devices at the center; (iii) the design of resilience and trust by default within digital infrastructure; and (iv) the implementation of "green-by-default" computing aligned with climate commitments and sustainable development goals.

With regard to AI adoption, Sweden does not pursue technology demonstrations or pilot projects for symbolic purposes; instead, AI is deployed only when measurable public value can be generated and when it can be effectively integrated into existing governance processes. This approach is underpinned by a highly advanced national digital infrastructure, characterized by extensive fiber-optic coverage and nationwide 4G/5G connectivity. In practice, AI is routinely applied to public administration functions such as prioritizing inquiries at contact centers, processing welfare benefit applications, issuing permits, and extracting administrative data, all under human oversight and rigorous audit frameworks. In the healthcare sector, AI is implemented cautiously through the national 1177 platform to support clinical decision-making and waiting-list management, thereby improving service efficiency while ensuring safety and accountability.

A critical precondition for scaling AI-driven smart governance is data sharing and interoperability. In 2025, the Swedish Government launched a comprehensive investigation into strengthening digital information exchange across different levels of government, while continuing to expand open government data in machine-readable formats. Core digital "rails" such as BankID, Freja eID+, and the national system of authoritative registers serve as foundational infrastructure, enabling AI applications and digital services to be seamlessly embedded into existing service journeys rather than developed as standalone platforms.

Rather than constructing a single service portal in a purely technical sense, Sweden has opted for a decentralized yet integrated digital public service ecosystem, in which unified digital identity plays a central role. E-tjänster (e-services) allow citizens to complete multiple administrative procedures within a shared digital environment, with particular optimization for mobile devices. BankID, although developed by the private sector, has become a common digital credential across both public and private domains, enabling secure login, digital signatures, and end-to-end transactions via mobile phones. Supported by authoritative

population and administrative registers, the "once-only" principle is widely implemented through pre-filled forms and system-guided workflows. The Swedish Customs Authority's exclusive adoption of Peppol e-invoicing from April 2025 further reinforces the practical realization of the "single-entry point" vision.

Alongside efficiency and convenience, resilience and trust are deliberately embedded as foundational values of smart governance. Core service portals such as Skatteverket, Försäkringskassan, 1177, and verksamt.se operate across multiple cloud regions and network providers, ensuring service continuity under high-demand or stress conditions. Edge computing is deployed in hospitals and transportation nodes to support time-sensitive operations. Institutionally, the National Cybersecurity Strategy for 2025-2029 and the new Cybersecurity Act (submitted in June 2025 and expected to enter into force in January 2026) have strengthened the legal framework in alignment with the EU's NIS2 and CER directives. At the same time, Sweden promotes digital inclusion through multilingual interfaces, accessibility-support solutions, and transparent grievance and redress mechanisms.

Against the backdrop of rapidly increasing energy consumption by digital infrastructures, Sweden has integrated a "green-by-default" approach into the design and procurement of digital technologies. The combined use of multi-cloud architectures, edge computing, the Internet of Things (IoT), and 5G enables data processing closer to the point of generation, thereby reducing energy consumption and optimizing resource use. Universities and research institutes play a pivotal role in providing advanced computing infrastructure and highly skilled human resources, ensuring that technological innovation progresses in tandem with environmental and social responsibility.

Overall, Sweden's 2025 digital government strategy reflects a mature model of smart governance, in which technology is positioned as an enabling tool for effective, inclusive, and sustainable governance. This approach not only enhances public sector performance but also reshapes the relationship between the state, citizens, and technology in the digital era.

4.3. The Case of South Korea

Can smart governance be institutionalized through legislation and spatial planning? South Korea's experience suggests that digital transformation becomes sustainable only when embedded within formal planning hierarchies and adaptive legal frameworks. Similar to Vietnam, South Korea does not formulate smart city development as a standalone planning instrument; instead, smart city elements are directly integrated into urban planning processes during both the formulation of new plans and the revision of existing ones. This approach reflects a smart governance mindset, in which digital technologies are regarded as enabling tools for the implementation of urban planning and management rather than as isolated objectives. Based on the National Land Planning and Utilization Act, South Korea has established a clearly hierarchical urban planning system comprising national plans, regional plans, comprehensive urban plans, and urban management plans, thereby providing a unified institutional framework for embedding smart components into urban development.

Within this framework, the Smart City Act enacted in 2017 introduced a two-tier planning model to ensure effective coordination between central and local governments. At the central level, the Ministry of Land, Infrastructure and Transport (MOLIT) formulates the National Smart City Master Plan on a five-year cycle, serving as a strategic governance instrument. This master plan focuses on assessing domestic and international trends in technology and urban governance, defining the national vision, implementation roadmap, and resource allocation mechanisms, while ensuring alignment with other national strategies and planning instruments. To date, four National Smart City Master Plans have been issued, enabling the state to combine long-term strategic orientation with policy flexibility in response to changing socio-economic and technological contexts.

At the local level, provincial and municipal governments are empowered to formulate Smart City Plans tailored to their socio-economic conditions and spatial characteristics, provided that these plans remain consistent with existing urban planning frameworks. A key governance innovation lies in the legal recognition of private-sector rights to propose smart city projects. Once such proposals are approved, local smart city plans may be newly established or adjusted accordingly, signaling a shift from a rigid, administrative management model toward an open governance framework that encourages public-private partnerships and innovation.

Beyond planning instruments, South Korea has implemented National Smart City Pilot Projects as a form of controlled experimental governance. Under the 2017 Smart City Act, pilot zones such as Sejong City and Eco-Delta City in Busan are operated through special-purpose entities with a high degree of autonomy, enabling faster decision-making processes and reduced administrative burdens. Special provisions of the Act allow for the controlled relaxation of regulations in key domains such as data governance, land use, autonomous mobility, and renewable energy, thereby creating a safe testing environment for emerging technologies in urban governance. Empirical evidence demonstrates the effectiveness of this governance model. In Sejong City, a digital urban platform leverages real-time data from thousands of sensors to support evidence-based decision-making, contributing to reductions in emissions and energy costs. In Busan, the Urban Data Center provides open access to data on urban planning, environmental conditions, and infrastructure, thereby enhancing transparency and citizen participation through digital services.

In parallel, South Korea has strengthened its regulatory sandbox mechanism through amendments to the Smart City Act in 2019. This mechanism classifies projects based on risk levels, defines clear pilot durations, and establishes risk governance measures such as impact assessments, expedited legal validation, and mandatory liability insurance. The nationwide expansion of the regulatory sandbox from 2021 onward illustrates a high degree of institutional adaptability in smart urban governance. Overall, the South Korean experience demonstrates that smart cities are not merely the outcome of technological adoption, but rather the product of a smart governance model grounded in integrated planning, a flexible legal framework, and controlled experimentation mechanisms. The successes of Sejong and Busan underscore the critical role of data governance, multi-stakeholder coordination, and policy adaptability to local conditions in achieving sustainable smart city development.

4.4. The Case of Austria

What happens when citizens no longer need to apply for public services at all? Austria's "no-stop government" model redefines smart governance by shifting from reactive service provision to proactive, life-event-based administration. According to the Austrian government, placing citizens at the center of public administration, together with strong inter-ministerial coordination mechanisms, constitutes the foundation for Austria's notable achievements in administrative reform and the enhancement of public service quality. The family allowance payment process serves as a representative example of this approach. Immediately after a child is born, relevant data are automatically transmitted from hospitals to the population registry, subsequently processed by the Ministry of the Interior and shared with the Ministry of Finance and the tax authorities. As a result, family benefits are approved and transferred directly to households without requiring any administrative procedures from citizens. This model clearly reflects the philosophy of a "no-stop government," in which public services are delivered proactively rather than upon explicit request by users.

Automation mechanisms are further applied in subsequent stages, particularly in the renewal of benefits, which is carried out through the integration of biometric digital identification systems and data-sharing platforms with higher education institutions. In this context, digital identity and interoperable data exchange infrastructures represent core components of public digital infrastructure; however, they can only operate effectively when built upon strong intersectoral collaboration. This collaboration involves not only administrative agencies but also legal experts, policymakers, service designers, and technology professionals, highlighting the socio-technical nature of smart governance in Austria.

Building on this foundation, Austria has implemented a unified e-government roadmap spanning from the federal to the local levels, operationalized through the E-Government Strategy and the Digital Services Act. This policy framework comprises 36 guiding principles and 117 concrete measures, aiming to shift from mere digitization of records toward the comprehensive automation of public services. At the core of this architecture is the dadeX platform, which interconnects more than 30 authoritative registries and enables the secure reuse of data across public agencies. As a result, citizens are no longer required to resubmit documents such as income certificates when applying for social benefits. It is estimated that by 2026, this system could generate annual savings of over EUR 150 million for citizens and businesses.

Beyond its domestic role, dadeX also facilitates cross-border data exchange within the European Union and serves as a foundational infrastructure for the development of the European Digital Identity Wallet. The integration of ID Austria and key authentication credentials into a single application has significantly improved accessibility and user acceptance, with more than 4.1 million registered accounts and over 2 million

active users. According to Ebner, these outcomes demonstrate that when digital services are designed to be simple, secure, and consistent, user trust is strengthened, thereby fostering sustainable digital transformation in the public sector.

The findings of the eGovernment Monitor 2024 further corroborate the effectiveness of this approach, showing that Austria's e-government services are widely adopted across all age groups, with usage rates of 72% among citizens aged 55 and above and 78% among those aged 16-34. Moreover, 94% of users expressed their intention to continue using digital public services in the future, while 71% assessed digital administrative procedures as significantly more efficient than traditional methods.

4.5. Lessons for Vietnam

The experiences of South Korea, Singapore, Austria, and Sweden demonstrate that smart governance should not be regarded as the final destination of digital transformation, but rather as a more advanced stage of development, in which digital technologies are deeply embedded into state institutions, governance processes, and public decision-making. In the context of Vietnam, these lessons are particularly meaningful, as the national digital transformation agenda has achieved substantial progress in recent years.

First, Vietnam needs to move beyond sectoral digitization toward integrated, data-driven smart governance based on inter-agency coordination. As illustrated by Singapore's integration of Singpass and MyInfo, and Sweden's interoperable digital "rails" such as BankID and authoritative national registers, the effectiveness of digital transformation depends not merely on technology adoption but on seamless data sharing across institutions. In practice, Vietnam has made notable achievements in digitalization across multiple sectors: enterprises have accelerated digital transformation in management, production, and investment; e-commerce has grown rapidly, placing Vietnam among the world's top ten fastest-growing markets; and cashless payments have expanded nationwide, with 87% of adults holding payment accounts and annual growth rates of approximately 50%. However, international experience suggests that such achievements can only be sustained when supported by a smart governance model in which data are interoperable, securely reused across agencies, and public decisions are informed by real-time data analytics.

Second, a citizen-centric approach combined with service automation represents a natural progression toward smart governance. The Singpass-MyInfo model in Singapore and Austria's "no-stop government" approach illustrate that public services should be designed around citizens' life events, with governments proactively delivering services rather than waiting for formal requests. Vietnam has taken important steps in this direction through the nationwide deployment of the VNeID platform, the integration of electronic health records, and the provision of online criminal record certificates. These initiatives constitute a critical foundation for the development of automated and personalized public services that reduce administrative burdens and enhance user experience key characteristics of smart governance.

Third, a unified digital identity system and shared data infrastructure are foundational prerequisites for smart governance. Across all four cases, digital identity functions as the backbone of smart governance: Singpass in Singapore, BankID in Sweden, and ID Austria within the EU framework enabling secure authentication, interoperable data exchange, and seamless public service delivery. The comparative evidence suggests that without a trusted digital identity and integrated registries, higher-order automation, AI deployment, and the effective implementation of the "once-only" principle cannot be sustainably scaled. In this regard, Vietnam has begun to establish a digital identity ecosystem through the VNeID platform and national databases, facilitating digital transformation in areas such as social security, healthcare, education, justice, and insurance payments. The key lesson, therefore, is to further strengthen the data governance framework, enhance interoperability across public agencies, and ensure secure data reuse, thereby fully unlocking the value of data for evidence-based governance and citizen-centric public service delivery.

Fourth, emerging technologies particularly artificial intelligence should be deployed in ways that directly support governance, deliver measurable public value, and ensure accountability. The experiences of Sweden and South Korea show that AI in the public sector is adopted only when it can be integrated into existing administrative processes and demonstrate clear benefits in decision-making, resource allocation, and service quality. In Vietnam, AI, cloud computing, and IoT have been increasingly applied in the private sector and selected public domains. The challenge lies in shifting from fragmented technological applications toward the

use of AI as a strategic tool for smart governance, embedded within appropriate legal frameworks, oversight mechanisms, and public-sector ethics.

Fifth, flexible institutions and controlled experimentation mechanisms are critical drivers of innovation in smart governance. South Korea's experience with pilot projects and regulatory sandboxes indicates that technological innovation must be supported by adaptive legal frameworks that balance flexibility with risk management. In the context of rapidly expanding e-commerce, digital finance, and online services, Vietnam could apply this lesson by broadening policy experimentation spaces while effectively mobilizing private-sector participation in the provision and operation of digital public services.

Sixth, public trust and sustainability must be placed at the core of smart governance. Sweden's "trust-by-design" digital infrastructure and Austria's strong data protection mechanisms demonstrate that cybersecurity, transparency, and citizens' control over personal data are not supplementary considerations but structural pillars of digital transformation. The experiences of these countries underscore that without trust, adoption rates and the long-term effectiveness of digital public services cannot be sustained. In the Vietnamese context, the country's significant improvement in its e-government ranking during the 2008-2024 period (Figure 3), together with the achievement of targets set out in Resolution No. 02/NQ-CP (2024), reflects strong governmental commitment to administrative modernization. However, maintaining and further enhancing these outcomes requires smart governance to be closely aligned with trust-building measures, digital inclusion, robust cybersecurity safeguards, and a long-term sustainability perspective.

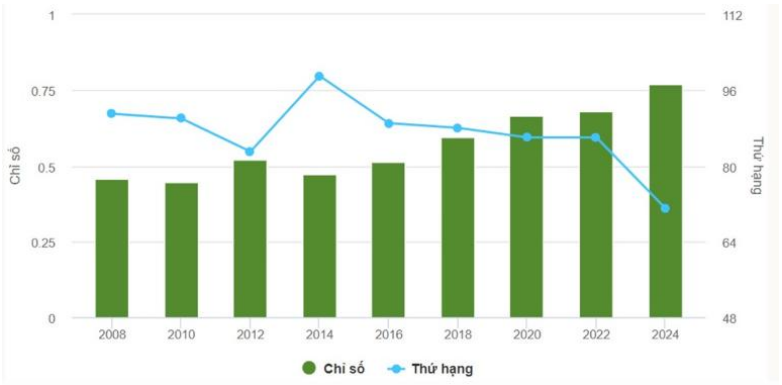

Figure 3. Vietnam's E-Government Development Index, 2008-2024

In summary, international experiences indicate that smart governance represents the next stage of digital transformation, requiring close integration among institutions, data, technology, and human capital. With notable achievements in digital transformation and e-government development, Vietnam has established a favorable foundation for transitioning toward smart governance, in which the state plays an enabling role, public services are delivered proactively, and digital technologies are utilized as tools to enhance efficiency, transparency, and the quality of governance in the digital era.

5. CONCLUSIONS

In the context of accelerating global digital transformation, smart governance has emerged as a new governance paradigm, reflecting a more advanced stage in the evolution of e-government and digital government. Through an analysis of the experiences of Singapore, Sweden, South Korea, and Austria, this study demonstrates that smart governance is not merely the application of digital technologies, but rather a comprehensive process of integrating technology into state institutions, governance processes, and public decision-making, with the ultimate objective of creating public value and improving the quality of services for citizens.

The findings reveal that countries successful in implementing smart governance share several key characteristics, including unified digital identity systems and shared data infrastructures; citizen-centric public services designed toward automation; the deployment of emerging technologies such as artificial intelligence closely aligned with governance processes and accountability mechanisms; and flexible institutional frameworks that enable controlled experimentation and promote public-private collaboration. At

the same time, data protection, cybersecurity, and the building of public trust are regarded as essential prerequisites for ensuring the sustainability of smart governance.

For Vietnam, the study indicates that recent progress in national digital transformation and digital government development has laid an important foundation for advancing toward smart governance. However, to realize this objective, Vietnam needs to shift its focus from fragmented digitization toward data-driven governance and inter-agency coordination; accelerate the automation and personalization of public services; further the frameworks for data governance and digital identity; and develop adaptive institutional arrangements that support innovation and the application of emerging technologies in the public sector.

From an academic perspective, this study contributes empirical evidence and comparative analysis on smart governance across diverse institutional contexts, thereby clarifying the role of smart governance as a strategic instrument for enhancing public sector performance and promoting sustainable development. Future research may extend this work by conducting empirical studies in Vietnam, assessing institutional readiness, and examining the impacts of smart governance on public service delivery efficiency and citizen satisfaction.

6. REFERENCES

Almulhim, A. I., & Yigitcanlar, T. (2025). Understanding Smart Governance of Sustainable Cities: A Review and Multidimensional Framework. *Smart Cities*, *8*(4), 113. https://doi.org/10.3390/smartcities8040113

Bolívar, M. P. R., & Meijer, A. J. (2016). Smart Governance. *Social Science Computer Review*, *34*(6), 673–692. https://doi.org/10.1177/0894439315611088

Dai, Y., Huang, Z., Khan, N., & Labbo, M. S. (2025). Smart Water Management: Governance Innovation, Technological Integration, and Policy Pathways Toward Economic and Ecological Sustainability. *Water*, *17*(13), 1932. https://doi.org/10.3390/w17131932

Dunleavy, P., & Margetts, H. (2025). Data science, artificial intelligence and the third wave of digital era governance. *Public Policy and Administration*, *40*(2), 185–214. https://doi.org/10.1177/09520767231198737

Furtado, L. S., da Silva, T. L. C., Ferreira, M. G. F., de Macedo, J. A. F., & de Melo Lima Cavalcanti Moreira, J. K. (2023). A framework for Digital Transformation towards Smart Governance: using big data tools to target SDGs in Ceará, Brazil. *Journal of Urban Management*, *12*(1), 74–87. https://doi.org/10.1016/j.jum.2023.01.003

Lin, Y. (2018). A comparison of selected Western and Chinese smart governance: The application of ICT in governmental management, participation and collaboration. *Telecommunications Policy*, *42*(10), 800–809. https://doi.org/10.1016/j.telpol.2018.07.003

Oprea (Bîrlă), D. C., & Kaur, K. (2025). Smart Governance in the Digital Age: Benefits, Challenges and Future Directions. *Agora International Journal of Juridical Sciences*, *19*(1), 203–215. https://doi.org/10.15837/aijjs.v19i1.7186

Pereira, G. V., Parycek, P., Falco, E., & Kleinhans, R. (2018). Smart governance in the context of smart cities: A literature review. *Information Polity*, *23*(2), 143–162. https://doi.org/10.3233/IP-170067

Przeybilovicz, E., & Cunha, M. A. (2024). Governing in the digital age: The emergence of dynamic smart urban governance modes. *Government Information Quarterly*, *41*(1), 101907. https://doi.org/10.1016/j.giq.2023.101907

Tan, S., & Taeihagh, A. (2020). Smart City Governance in Developing Countries: A Systematic Literature Review. *Sustainability*, *12*(3), 899. https://doi.org/10.3390/su12030899