



Digital Governance Adoption: Exploring Drivers, Impacts, and Strategic Innovations across Sectors

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Abstract. This study explores the transformative role of digital governance in reshaping public administration by leveraging information and communication technologies (ICT) to enhance transparency, efficiency, and public participation. It examines the adoption and implementation of digital technologies, such as blockchain and E-Government systems within public sector governance frameworks, identifying key drivers like trust, transparency, and security. The research also highlights the challenges posed by digital transformation, including the digital divide, cybersecurity threats, and ethical concerns in data management. Through a systematic literature review of scholarly articles published between 2020 and 2024, this study provides a comprehensive analysis of the factors influencing digital governance adoption, particularly focusing on technological, social, and behavioral determinants. The findings emphasize the critical importance of integrating both external and internal factors, including public trust, service quality, and leadership, to ensure successful digital governance initiatives. Additionally, the study underscores the need for inclusive digital platforms, robust governance models, and political leadership to achieve long-term success, especially in developing countries. This research contributes to the existing body of knowledge by offering actionable insights for policymakers, administrators, and scholars, and addressing current and emerging issues in the field of digital governance.

Keywords: Digital governance, e-government adoption, information and communication technologies (ICT), public administration.

1 Introduction

In the rapidly evolving landscape of public administration, digital governance has emerged as a transformative force that significantly reshapes the interactions between government agencies and citizens. The integration of new technologies within electronic governance frameworks plays a crucial role in strengthening the relationship between citizens and the state, fostering sustained engagement with digital government services over time [1]. This sustained engagement is not merely a transactional interaction but also contributes to a deeper sense of civic involvement, which is essential for the long-term success of digital governance initiatives. Moreover, the interplay between citizen engagement and government responsiveness has the potential

to enhance democratic governance and increase community capacity, as both parties contribute to a more transparent, accountable, and participatory public administration [2]. This dynamic interaction underscores the importance of designing digital governance strategies that are not only technologically advanced but also socially inclusive and ethically sound.

Digital governance involves the use of information and communication technologies (ICT) to improve transparency, efficiency, and public participation in government processes. The adoption and implementation of ICT in public administration and services are intended to enhance transparency, fairness in decision-making, reduce intermediaries, and improve the efficiency of budget expenditures [3]. However, while these technologies offer substantial benefits, their integration into public administration also introduces a range of challenges and ethical concerns. E-government initiatives have been shown to increase efficiency, user-friendliness, and accessibility, while also promoting ethical practices and reducing the risk of corruption within the public sector. Given the widespread reliance on technology for accessing government services, the effectiveness of e-government is increasingly critical, though disparities persist, particularly among disadvantaged populations who continue to face barriers in accessing these digital services [4].

The increasing reliance on digital tools in public administration mirrors broader societal trends toward digitization, yet the shift to digital governance is laden with significant challenges. Institutional inertia and political coordination issues are among the primary barriers to effective digital government implementation, often resulting in ethical concerns, risk aversion, capacity and skills deficits, and limited citizen engagement [5]. Moreover, the transition is complicated by the digital divide, cybersecurity threats, and the ethical implications of data management. Although existing studies have examined specific aspects of digital governance, there remains a notable gap in comprehensive analyses that consider the multifaceted nature of its adoption, impact, and associated challenges.

Numerous studies have explored different aspects of digital governance, highlighting its potential to transform public administration. For example, digital transformation in public administration aims to establish a unified national digital space [6]. This effort not only seeks to improve the efficiency and quality of public services but also to enhance cooperation between public authorities and local self-governments. Similarly, in the United Kingdom, digital transformation has been shown to increase efficiency and reduce operational costs within public administration. In China, the digital economy has significantly enhanced the efficiency of public health service provision by improving government performance and regulatory quality [7]. These findings underscore the potential of digital governance to drive efficiency and quality improvements across various public sectors.

However, the benefits of digital governance are not without challenges. For instance, while digitalization can improve interfirm governance in supply networks, it may also reduce human interactions, which in turn affects coordination and increases the risk of opportunism [8]. This highlights the potential trade-offs between efficiency gains and the quality of human-centered processes within digital governance frameworks. Moreover, digital inequalities remain a persistent issue. Robinson et al. (2020)

introduce the concept of the “digital inequality stack”, which encompasses disparities in access, skills, and usage. These inequalities can affect individuals across various aspects of life, thereby limiting the inclusivity and effectiveness of digital governance initiatives [9]. In Russia, the digital economy is seen as a double-edged sword, presenting both risks and opportunities. Eskindarov (2019) notes that while digitalization offers new professions, security technologies, automation, and improved state electronic services, it also introduces risks such as dependence on the internet, displacement of human labor by machines, digital inequality, and diminished state control [10]. These challenges reflect broader concerns about the societal impacts of digital transformation, particularly in terms of labor displacement and the widening digital divide.

This study is crucial as it seeks to fill the existing gap by providing an in-depth examination of digital governance from multiple perspectives, exploring drivers, impacts, and strategic innovations across sectors. By elucidating these aspects, this research aims to offer actionable insights for policymakers, administrators, and scholars, ultimately contributing to more effective and ethical governance practices. This study employed a literature review approach, focusing on the analysis of scholarly articles related to the adoption of digital governance, providing a comprehensive understanding of digital governance by analyzing both qualitative and quantitative findings presented in the existing literature. The originality of this study lies in its comprehensive analysis of digital governance, offering a novel contribution to the field that addresses current and emerging issues in public administration.

2 Methods

This research employed a systematic literature review (SLR) methodology, focusing on scholarly literature published in reputable journals ranked within the SJC Q1-Q3 quartiles between 2020 and 2024. The systematic review process is enhanced by utilizing the Artificial Intelligent “Consensus” tool, which is designed to optimize the search and selection of relevant academic articles.

Consensus AI operates as a sophisticated search engine that combs through extensive databases, such as Semantic Scholar, which hosts over 200 million papers across various scientific domains. The tool’s distinct advantage lies in its ability to filter journal articles based on specific criteria such as publication year, citation count, and quartile ranking, ensuring the inclusion of high-quality, impactful studies.

Using the keyword “digital governance adoption”, the AI tool identified 50 pertinent journal articles. These articles were subsequently categorized based on the themes of their primary findings. This categorization process resulted in the identification of three major themes and 14 sub-themes, which collectively illustrate the diverse research landscape of “digital governance adoption”. The organization of these themes provides a comprehensive overview of the current scholarly discourse, as outlined in the accompanying table.

Table 1. Thematic Categorization of Research Articles on Digital Governance Adoption (2020-2024)

Theme Cluster	Theme Sub Cluster	Amount
Digital Technology Adoption and Implementation	Adoption of Specific Digital Technologies	2
	Drivers of Digital Governance Adoption	2
	Factors Influencing E-Government Adoption	6
	Strategies for Successful Adoption Implementation	2
	Digital Technology Adoption in Specific Sectors	9
	Digital Technology Adoption in Specific Industries	6
Application of Technology in Governance and Management	Digital Government and Public Sector Innovations	3
	Enhancing Public Services through Digital Governance	3
	Factors Influencing Digital Innovation and Knowledge Management	3
	Governance Models and Mechanisms in Digital Transformation	4
	The Role of Governance in Digital Transitions	3
Broader Impact and Implications of Digitalization	Governance Mechanisms in Organizations	2
	Impact of Digital Technologies on Sustainability and Innovation	3
	Implications of Digitalization on Resilience and Sustainability	2
Total		50

The next step involves eliminating several subthemes that are not relevant to the topic of digital governance in the public sector. This process is undertaken to ensure that only subthemes directly related to the implementation and development of digital governance in the public sector are retained. Following this elimination process, the resulting 2 themes categorization includes 10 core subthemes and 37 articles that support further analysis of the adoption and effectiveness of digital governance in enhancing transparency, efficiency, and public participation, as shown in the following table.

Table 2. Subtheme Categorization for Digital Governance Analysis in the Public Sector (2020-2024)

Theme Cluster	Theme Sub Cluster	Amount
Digital Technology Adoption and Implementation	Adoption of Specific Digital Technologies	2
	Drivers of Digital Governance Adoption	2
	Factors Influencing E-Government Adoption	6
	Strategies for Successful Adoption Implementation	2
	Digital Technology Adoption in Specific Sectors	9
	Digital Government and Public Sector Innovations	3
Application of Technology in Governance and Management	Enhancing Public Services through Digital Governance	3
	Factors Influencing Digital Innovation and Knowledge Management	3
	Governance Models and Mechanisms in Digital Transformation	4
	The Role of Governance in Digital Transitions	3
	Total	37

In the subsequent phase of this systematic literature review, the findings within each identified sub-theme were meticulously analyzed to provide a comprehensive understanding of the scientific progress in the field of digital governance adoption. This in-depth analysis aimed to elucidate key developments, emerging trends, and research gaps within each sub-theme, allowing for a nuanced exploration of how these elements

contribute to the broader discourse on digital governance. The results of this analysis are systematically presented in the “Results and Discussion” section, offering a detailed synthesis of the current state of knowledge and highlighting areas for future research within each thematic category. Through this approach, the study not only maps the intellectual landscape of digital governance adoption but also provides critical insights that can inform both theoretical advancements and practical applications in the domain.

3 Results and Discussion

After conducting categorization, we obtained a deep synthesis regarding the research developments on the topic of digital governance adoption in the public sector. We elaborated on this by analyzing and synthesizing each category of themes and sub-themes, resulting in the following outcomes.

3.1 Digital Technology Adoption and Implementation

Adoption of Specific Digital Technologies

The adoption of blockchain technology and E-Government systems in public sector governance is increasingly crucial. Falwadiya and Dhingra (2022) identified 72 factors influencing blockchain adoption in government organizations proposing a conceptual framework that incorporates trust, transparency, and security alongside the Unified Theory of Acceptance and Use of Technology (UTAUT) [11]. This framework is essential for policymakers to facilitate blockchain implementation. Similarly, Da Wa and Zhang (2023) analyzed E-Government adoption in China’s environmental governance, finding that public expectations, perceived usefulness, and service quality significantly impact adoption behavior[12]. These studies highlight the critical role of trust, ease of use, and performance expectancy in advancing digital governance initiatives.

Drivers of Digital Governance Adoption

The adoption of digital governance in both corporate and public sectors is increasingly driven by the integration of technology, innovation, and digital transformation. Guerrero-Avenidaño *et al.* (2023) highlight the significance of these factors within the Governance and Corporate Management System (GCMS+), emphasizing their role in achieving organizational success through strategic goals and key performance indicators. This system, validated through a robust research methodology, underscores the importance of adopting best practices and innovative approaches to governance. In the public sector, Xanthopoulou *et al.* (2023) identify external drivers such as service quality, transparency, and public trust as critical factors influencing digital governance adoption[13]. Their findings reveal that while external factors significantly propel digital governance, internal factors like leadership and organizational culture play a lesser role. These insights are crucial for policymakers and administrators aiming to

implement effective digital governance strategies tailored to their specific organizational contexts.

Factors Influencing E-Government Adoption

The adoption of e-Government services is influenced by a complex interplay of factors, including technological, social, and behavioral determinants. Yera *et al.* (2020) emphasize the importance of understanding these factors within the European context, where digital divides persist, affecting the uptake of e-Government services across different countries. Their research identifies key factors such as internet usage patterns and educational levels as critical in shaping the adoption rates of e-Government tools [14]. Similarly, Olesen, Wood, and Chong (2021) through a meta-analysis, distinguish between the factors influencing pre-adoption and post-adoption stages of e-Government, highlighting trust as a significant factor during the pre-adoption phase. In the context of developing countries [15], Samuel *et al.* (2020) explore the barriers and drivers of e-Government adoption in Indian cities, finding that awareness and satisfaction levels significantly impact adoption rates. The study also underscores the need for culturally tailored technology adoption models to address these challenges effectively. Additionally, Mensah, Zeng, and Luo (2020) extend the Unified Model of Electronic Government Adoption (UMEGA), demonstrating that facilitating conditions, perceived service quality, and trust in government are pivotal in determining the intention to use and recommend e-Government services [16]. These findings are complemented by Zeebaree, Agoyi, and Aqel (2022), who study the sustainable adoption of e-Government in northern Iraq, introducing constructs such as “Trust of System” and “Ethics of Internet” into the UTAUT model, thereby broadening the understanding of factors that influence e-Government adoption in various cultural contexts [17].

Strategies for Successful Adoption Implementation

The successful adoption and implementation of digital government initiatives require a comprehensive strategy that integrates both implementation and adoption factors. Gil-García and Flores-Zúñiga (2020) emphasize the importance of this integration, noting that the success or failure of digital government is significantly influenced by how well government agencies implement these initiatives and how effectively they are adopted by citizens [18]. Their research proposes a model that combines these two perspectives to provide a more holistic understanding of digital government success. On the other hand, David *et al.* (2023) focus on local government digital technology adoption strategies, highlighting the challenges of capacity, knowledge, and awareness in balancing resources and strategic implementation [19]. Their study suggests that successful adoption strategies must address three critical aspects: people, processes, and technology. This includes building platforms for public participation, developing the skills of employees, ensuring clear roles and procedures, and preparing for technological changes.

Digital Technology Adoption in Specific Sectors

The adoption of digital technology has proven to be a crucial factor in enhancing economic and environmental performance across various industrial sectors. Digital technology adoption positively impacts economic and environmental performance in emerging strategic industries, with digital strategies reinforcing this effect. In the context of small and medium-sized enterprises (SMEs) in Malaysia [20], digitalization adoption is also a key factor in achieving a successful digital economy, with technology and organization as crucial factors, while environmental factors have less influence [21]. Participation in the global value chain significantly drives the adoption of Industry 4.0 technologies in developing countries, positively affecting company performance [22]. In the agricultural sector, government and institutional support are essential to encourage the adoption of digital technology by small-scale farmers within the agricultural value chain [23]. Additionally, factors such as interoperability, staff workload, civil society involvement, and vendor roles determine the success of adopting village information systems in Indonesia [24]. In the supply chain, digital technology adoption enhances efficiency, structure, sustainability, and innovation, with technological intelligence and supply chain cooperation as key factors [25]. In the Dutch horticultural industry, ecosystem data governance is also a crucial factor in adopting Internet of Things (IoT) data platforms, with an emphasis on benefits and readiness [26]. In the infrastructure sector, perceived usefulness and environmental factors directly influence infrastructure participants' intentions to adopt digital technology, while technological factors play an indirect role [27]. In the context of digital manufacturing, technology adoption faces challenges such as job displacement, employee acceptance, trust, and privacy, requiring targeted interventions at the individual and organizational levels for sustainable workforce development [28].

3.2 Application of Technology in Governance and Management

Digital Government and Public Sector Innovations

Digital government (DG) innovations are increasingly pivotal for advancing sustainable governance (SG), yet their effectiveness varies significantly across different contexts. DG can potentially enhance SG, its impact is inconsistent, with some countries demonstrating high DG performance but poor SG outcomes, often due to weaknesses in democratic processes [29]. Complementing this, Abied *et al.* (2022) present a conceptual model for adopting cloud computing in e-government systems, highlighting key determinants that influence adoption and providing a validated framework for evaluating cloud-based implementations [30]. Additionally, Althunibat *et al.* (2021) identify critical factors influencing the adoption of smart-government services at various stages, emphasizing the need for tailored approaches to address distinct requirements and user perceptions [31]. Together, these studies underscore the complex relationship between DG innovations and SG, emphasizing the need for strategic and context-specific approaches to optimize the impact of digital technologies in the public sector.

Enhancing Public Services through Digital Governance

Enhancing public services through digital governance is a key focus in modern government strategies, aimed at improving efficiency, inclusivity, and responsiveness. The integration of blockchain technology into digital government governance can optimize smart shared services by enabling intelligent data management and responsive governance through smart contracts [32]. Their empirical study reveals that strategic policy and platform organization are significant predictors of successful information sharing within government agencies, highlighting the critical role of technological infrastructure in enhancing public services. Complementing this, Sharma *et al.* (2022) explore the digital adoption of start-ups within e-governance systems, emphasizing the importance of digital support and awareness as mediators that enhance the perceived value of digital platforms [33]. Their findings suggest that government policies aimed at increasing digital literacy and providing robust digital support can significantly boost digital adoption among start-ups, thereby contributing to the broader goals of digital governance. Additionally, Al-Mamary and Alshallaqi (2023) identify key factors that promote inclusivity in digital government services, including perceived compatibility, information quality, and trust [34]. These elements are crucial for creating an accessible and user-friendly digital environment that caters to diverse public needs. Together, these studies underscore the multifaceted approach required to enhance public services through digital governance, focusing on the integration of advanced technologies, the promotion of digital literacy, and the creation of inclusive platforms.

Factors Influencing Digital Innovation and Knowledge Management

Digital innovation plays a crucial role in shaping knowledge management systems (KMS) within the context of modern governance and business operations. The barriers and governance strategies associated with digital and non-digital open innovation in the public sector, noting that technical and capacity-related challenges are particularly significant for digital open innovation [35]. These challenges necessitate robust governance strategies that enhance technical capacity and foster political commitment. Moreover, Vaio *et al.* (2021) examine the role of digital innovation in KMS, revealing that digital tools are pivotal in optimizing knowledge management and driving new business models, ultimately contributing to sustainable value creation [36]. These findings collectively underscore the critical factors influencing digital innovation and knowledge management, highlighting the need for strategic governance and innovation-focused policies.

Governance Models and Mechanisms in Digital Transformation

Governance models and mechanisms play a crucial role in the digital transformation of public and private sectors, where both formal and informal governance structures are employed to navigate the complexities of digitalization. The implementation of digital signatures as a new model of smart governance, emphasizing their role in enhancing the efficiency, effectiveness, and accountability of public services by leveraging

internet technologies [37]. This reflects the broader trend of integrating ICT-based solutions to support modern governance frameworks. Complementing this, Chen *et al.* (2021) provide a systematic review of digital platform governance, identifying the key mechanisms of incentive and control that underpin successful platform management [38]. They argue that understanding these governance mechanisms is essential for designing effective digital platforms that align with organizational objectives. Keller *et al.* (2021) explore the role of informal governance in digitalized supply networks, finding that while reduced personal contact limits the use of informal mechanisms, these remain critical during disruptions or when establishing new business relationships [8]. Together, these studies underscore the importance of both formal and informal governance mechanisms in ensuring the successful adoption and integration of digital technologies in various organizational contexts.

The Role of Governance in Digital Transitions

Governance role in digital transitions is crucial for ensuring the success and sustainability of digital initiatives, especially in government contexts. Chung *et al.* (2022) underscore the importance of presidential leadership in driving digital governance in South Korea, demonstrating how consistent political support and strategic vision over successive administrations have been pivotal in advancing the country's digital government innovation [39]. This highlights the political dimensions of governance in digital transitions, where leadership plays a central role in maintaining policy continuity and achieving long-term objectives. In contrast, Mao *et al.* (2021) focus on the technical aspects of governance, proposing a government data governance framework that leverages a data middle platform to meet the evolving needs of digital services [40]. Their study illustrates the importance of structured data governance in enhancing the efficiency, adaptability, and transparency of government operations in the digital age. However, Ramadani *et al.* (2022) reveal the risks associated with inadequate governance during the initial stages of digitization, particularly in developing countries. Their research highlights governance failures at the local level in Indonesia, where the lack of strategic governance has led to misalignment and adverse outcomes in the implementation of e-government initiatives [41]. These findings collectively emphasize the multifaceted nature of governance in digital transitions, encompassing both political leadership and technical frameworks, and the potential consequences when governance is neglected.

4 Conclusion

The adoption and implementation of digital technologies, such as blockchain and E-Government systems, are crucial for improving public sector governance. Key drivers include trust, transparency, and security, with frameworks like the Unified Theory of Acceptance and Use of Technology (UTAUT) aiding effective implementation. External factors like service quality and public trust are vital, while internal factors such as leadership are less critical. Successful digital governance requires addressing both

external and internal elements, focusing on innovation, best practices, and a combination of technological, social, and behavioral factors. In developing countries, awareness and satisfaction are key for adoption. Effective strategies should integrate implementation and adoption factors, emphasizing skill development, public participation, and technological readiness. Creating inclusive digital platforms and robust governance models—both formal and informal—ensures efficiency and responsiveness. Political leadership and structured data governance frameworks are essential for long-term success, especially in developing countries where tailored solutions and strategic oversight are necessary. Future research should continue exploring these dynamics to address emerging challenges and opportunities in digital governance.

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