Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Technological Advancements in Public Services: A Systematic Review

[1]Dr. Zermina Tasleem

[2]Dr. Sohail Ayaz Muhammad

[1]Assistant Professor, Bahauddin Zakariya University, Multan, Pakistan

[2]Assistant Professor, Hasan Murad School of Management, University of Management and Technology, Lahore, Pakistan

[1]zerminatasleem@bzu.edu.pk, [2]sohail.ayaz@umt.edu.pk

Abstract

This study examines the impact of digital transformation on local government operations. It reviews existing literature on the implementation of digitalisation across various countries. Using Scopus, the study identified research related to digital transformation in the public sector and explored a range of ideas on this topic. The findings indicate that digital transformation encourages citizen participation, make public services more transparent, and increase government accountability. However, there are challenges that digital transformation needs to overcome. The results show that the main drivers for digital change in public services are the desire to enhance organizational efficiency, respond to higher authorities' demands, and meet citizens' expectations. It highlights that local governments must be technologically prepared to succeed in the digital era. Future research should consider areas such as universal e-service delivery, information security and budget management concerns.

Keywords: Digital technology, Governance, Artificial intelligence, local government

Article Details:

Received on 28 Nov, 2025

Accepted on 22 Dec, 2025

Published on 25 Dec 2025

Corresponding Authors*

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

1. Introduction

In the ever-changing digital world, improving the delivery of public services has emerged as one of the priorities of governments in the modern world. Embracing new models and new technologies have enabled the public administration to control different aspects of governance better such as the security of cities, the provision of services to the people, transport, and the control of health (Ikpebe, 2024; Khalid et al., 2025). Such transformation is based on the following factors such as political, social, cultural, and economic factors. The main focus of this current change is made up of digital technology improvements and artificial intelligence (AI) (Malik, Chaudhary, and Srivastava, 2022). Nevertheless, an ambivalent impression of digitalisation has to be created, since there are opportunities in it as well as risks. In the case that the population is not aware of the ongoing digital transformation of the public sector, then these projects might end up posing unanticipated challenges instead of solutions (Vinothkumar and Karunamurthy, 2023; van Zanden, 2023; Amir et al., 2025). To this, the interest in having the citizens as active participants or collaborators during policymaking processes is growing.

The contemporary public service provision aims to optimise the application of technology, information, and the internet connectivity to improve service delivery (Vinothkumar & Karunamurthy, 2023; Geda, 2023; Umair et al., 2025). Digitalisation is able to assist governments to enhance efficiency, automation, streamlin operations, and enhanced experience to citizens. Nevertheless, in addition to such benefits, digital transformation in the sector of the population also entails the issue of the expectations of citizens and providing them with valuable digital content in an effective manner (Horowitz et al., 2022; Shaukat et al., 2025). Modernisation of the administration of the populace requires developing effective digital government strategies (Marc et al., 2021; Agarwal et al., 2024; Ullah et al., 2025). The strategies facilitate the creation of organisational structures that facilitate digitisation, boost intergovernmental communication, business-to-business, and citizen communication, and reduce expenditure through the simplification of bureaucracies. The digital government initiatives will only be successful when digital strategies are aligned with the practical realities of different jurisdictions. Digitisation in the public sector refers to the many areas of operation that involve improvement of service provision, service design, service efficiency, promotion of transparency and involvement of citizens. In order to make the digital transformation a success, governments need to be open to novel models of collaboration, establishing new forms of service delivery and establishing strategies that would enhance market participation (Brem et al., 2021; Karim et al., 2025).

Despite the numerous positive impacts of digital transformation in the sphere of the state, it is necessary to state that the threats and the challenges that citizens face in the course of the digital transformation must be mentioned. Among the most important ones, one must consider the possibility of more complexity and unforeseen complications (Bozkurt, 2023; Ali et al., 2025). Engaging citizens as decision-makers or policymakers' input may result in different views, a probable possibility of conflicts, and conflicting priorities (Ikpebe, 2024). Furthermore, the high dependency on digital technologies is associated with serious security and privacy issues. Governments need to protect data through proper service and defence of data to prevent the high likelihood of data loss through unauthorised access, as they receive vast amounts of citizen data stored in large quantities. (Sekwat & Tacaura, 2024; Khalid et al., 2025). Nowadays, with the advancements in artificial intelligence and digital technologies, modern society has undergone considerable changes, and the field of governance can be considered an aspect that these changes have significantly impacted. This transition has

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

facilitated a more public-driven planning model for public service delivery, optimising efficiency through the implementation of digital services and streamlined workflows (Hassan et al., 2024; Hashmi et al., 2025).

The increasing digitalisation of government requires public officials to have high digital skills, including using digital tools, interpreting data, navigating websites, and communicating effectively with citizens across digital media. Despite many digitisation initiatives, most remain limited to a small online presence, highlighting how complex and resource-intensive full public management transformation can be. Governments should adopt a moderate digital strategy that considers both risks and benefits (Blanco-Mancilla, 2013; Gurtoo & Williams, 2015; Sabir et al., 2025).

2. Literature Review

Digital transformation is given high priority on the agendas of governments worldwide. The effective integration of digital technologies and the revision of existing processes have been identified as key elements supporting the advancement of public service and governance (Valverde-Berrocoso et al., 2021; Ghauri et al., 2025). Digital government research scholarship has elucidated the relationship between digital transformation and knowledge management within government institutions (Fernández-Sánchez et al., 2022; Khalil et al., 2025). The implications of digitalization on knowledge management in government agencies ought to be established. In addition, the integration of artificial intelligence (AI) into the realm of public services is also gaining the status of a subject of adequate discussion (Fernandez-Sanhchez et al., 2022; Stavar, 2025), which promotes efficiency and intelligent governance. That is, the use of modern technologies is possible in the context of optimising civil administration management and digitalisation. The characteristics of urban cities under the digital transformation prism have been considered, and the results have demonstrated that population numbers mainly influence digital maturity rates (Debeljak & Dečman, 2022; Dek & Ibrahim, 2025). This implies that each city should be considered in different ways and given a unique roadmap of digital transformation which can be associated with the needs and requirements.

The opportunities of digital innovation in the public sector have their peculiar constraints which have to be taken into consideration and properly addressed. All these are pointers to knowledge management, priority of the citizens, reforms in organisations, big data governance and artificial intelligence (AI) within government institutions. As Alvarenga et al., (2020) established, the issue of knowledge management has been outlined as a serious one to understand the placement of roles of digital transformation in the public sector and the relationship in terms of strategic knowledge processes. According to them, this change was not a simple process. Besides, Latupeirissa et al. (2024) present an integrated review of digital integration in the sphere of public administration that comprises the issue of considering the needs of citizens in the process of digitalization of the public institutions and the challenges that the sphere of digitalization of the public administration has to face. Moreover, institutional change becomes a key issue when discussing the digitalization of public services, as it is a significant aspect of the authors' argument in the study (Plesner et al., 2018; Rehman & Chowdhury, 2025). Yukhno (2024) discusses data governance, paying particular attention to the problems and complexities of working with vast volumes of data, which is, no less importantly, an important aspect of digital transformation. Bignami (2022) identifies the concerns about AI applications in the field of public administration, such as precision, discrimination, compliance with law, responsibility, and the position of power, all of which presuppose the inability of an engineered combination of sophisticated technologies in the

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

framework of a public organisation. The problems associated with making the shift to partake in the digitalization of the public sector and related to the areas of knowledge management, the concept of big data management, changes to make the organization value-centered focused on citizens, and responsible AI, are mentioned as the overarching issues of knowledge management, big data management, citizen-based organization transformation, and accountable AI. It is essential to meet these challenges so that the transformation, governance, and quality service delivery in the public sector can be enhanced. Some of the challenges that the public sector might encounter are associated with digitalization complexities, such as knowledge management, the citizen-centric orientation, organizational change, data regulation, and responsible usage of AI.

Although the trend about the digital transformation looks to be promising to improve the governance and service delivery to the people, researchers cannot afford to overlook the likelihood of inequality in the digital transformation. Various signs of digital changes in the public sector can have risks and problems. The initial issue is that digital technologies can contribute to the further polarization of various groups of people. Even though innovative practices may make a positive contribution to the realm of the public services, their introduction may be expensive to groups of people who do not have access to or cannot use digital tools successfully. Such cases make us wonder the effectiveness of the government services in taking care of all citizens irrespective of their access to the internet. Critics are doubtful about the fact that the digitalization in the government sector can minimize the necessities of personal contacts and individual treatment of the citizens to the lowest possible. The negative impact of online channels is that such a method of services and communication can reduce the awareness of other customer needs that are better fulfilled through the presence of a person to person interaction. Of particular significance is the fact that the privacy, cybersecurity, and ethical concerns have emerged as a result of the inclusion of AI into the delivery of most public services, whose primary concern is related to decision-making facilitated by AI. It is believed that AI applications in the domain of public administration should be criticized due to their modelling capacity, which can deliver biased results and lead to an even more divided society. In this scenario, the public sector must undertake a digital transformation process, taking into account several concerns and risks associated with the adoption of new technology. To implement digital change successfully in the government sector, it is essential to outline the similarities between implementing digital modifications and their unsuccessful outcomes, as well as other negative consequences.

The purpose of the current study is to identify the advantages that can be revealed in the sphere of state service provision and to investigate the impact of various digital steps on enhancing the effectiveness and efficiency of state services. Furthermore, this research will help identify technological and governance approaches that can mitigate obstacles to AI adoption, enabling every citizen to enjoy the benefits of digital services. The importance of this in addressing the needs of the community, a method of attracting interest in the majority of citizens, and developing a responsible relationship between the stakeholders in such a manner that suggests the aspect of reciprocity is one of the key themes of this study to view the role of citizens in the design and operation of the digital services. In an effort to examine the current digital initiatives, this paper will highlight the steps done, the challenges involved, and the abilities developed in the promotion of the delivery of public services. The presented study suggests that the inclusion of citizens in the processes of digitization project planning is needed and that a balance between the benefits and challenges should be achieved. The move to computerize the process of delivering government services will cause a revolution between

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

the populace and the government, and accessibility of government services. However, the capacity of the AI to generate prejudice or marginalization should make one ethically and privacy-wise sensitive.

3. Research Methodology

The given research is also supported by the fact that the literature review was conducted systematically, which makes it possible to take a deep look into the processes of digitisation of the public realm. To identify the existing challenges to adoption and related issues, and potential benefits and best practices to take into consideration in performing a desirable working method of digitalization, as well as to enhance the efficiency of the results of the delivery of the public service, analysts conducted an analytical review of the scholarly literature on the topic of digitalization of the process of delivering people with a public service. During the study, the researchers conducted a synthesis of literature by performing a systematic review in Scopus and accessing published surveys, publications, and other documents, which will answer the question of how the public sector is digitalized.

The proposed research will present a complete set of literature that will present a multitude of views on the sphere by thoroughly reviewing it. The identified articles that were published within the specified timeframe were then selected and categorized in accordance with theoretical framework and approaches they make use of, along with the subject fields. The analysis of the existing literature provided some major findings regarding the efforts to digitalise the public services. The literature indicates that digitalisation has profoundly transformed the way governmental institutions manage data. Furthermore, knowledge management was demonstrated to be one of the most crucial processes for achieving successful outcomes in digital transformation programs. Additionally, it was found that the current digital transformation is not widely agreed upon. Instead, more empirical work is needed to shed insight into the comprehension of public administrators about "digital transformation" and its consequences on the delivery of public services. Using search terms such as "digital", "government", "electronic", "transformation", "service", and "public" brought 125 articles for the study. The act of combining these search terms generates a broader range of material, thereby facilitating the emergence of a more comprehensive analysis of public sector digitalisation. The research took place in December 2024, during which it inquired about materials published between 2016 and 2025, identifying 94 relevant publications.

By restricting the subject area to "Business, Management and Accounting", "Computer Science", "Environmental Science", "Economics, "Social Sciences", Econometrics and Finance", researchers selected 65 publications. Using the article type criteria for initial screening, 25 publications were selected for in-depth analysis and creation. After a careful examination of the titles, abstracts, and keywords for each publication, as well as an exhaustive reading of the complete texts, researchers identified 16 articles that met our selection criteria. Having compiled and assessed information from these studies, researchers were able to outline key themes and findings on how digitisation impacts public service delivery. After a thorough evaluation of the texts, 16 articles were selected for close examination. Those who are selected at the final stage number only 16 articles, which is vastly less than the total number of scholarships in the public sector technology.

The countries analysed in this work are China, Brazil, Indonesia, the Czech Republic, Switzerland, Russia, Slovenia, and the United Kingdom, all of which have demonstrated significant involvement in implementing digital transformations in their public sectors. The findings demonstrate that digitalisation can be a considerable threat to the operations of the working institutions, and the chance to improve the processes of governance by undertaking

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

them more effectively is high. The data extraction form, which was developed based on the Preferred Reporting Items of systematics reviews and meta-analyses (PRISMA) guidelines (introduced in the Supporting documents), was generated in relation to systematic reviews (Tawfik et al., 2019). The fact that this standardized data was extracted allowed discussing the most vital findings of the publications under consideration, which, in its turn, allowed leading to an in-depth examination of each objective, design, outcome, and learning (Pati and Lorusso, 2018; Akim, 2020; Yeung & Chung, 2025; Minella, 2025).

The PRISMA data extraction model helped the research team to work out all the necessary and significant data regarding the reviewed works, which gives a brief idea of how digitalization can affect the delivery of the public services. Such criteria like validity, reflexivity, relevance, and the quality of reporting applied in the evaluation process contributed to the increase of the reliability and credibility of the results. The contribution of a success of researchers in checking and summarizing the results also contributed to the worth of the research. The studies have been reviewed critically in the consideration of their validity, reflexivity of the approach, applicability of the studies to practice and their comprehensiveness in describing the approach and the process. Validity refers to the test of relevancy and precision of the conduct, design and methodology of the study and the instruments or means employed in the study. The effect of the method of collecting data and the researchers on the acquired data constitutes the aspect of reactivity. The value of a study lies in what it contributes to existing knowledge and understanding. Proper presentation of the approach and process used during the study is crucial to maintaining the reliability of the study results as well as the integrity of the research. To establish the reliability of the data extraction, a pre-test was conducted, and the researchers used it for sixteen studies to assess its clarity and ability to capture important information.

Therefore, the improved form was subsequently employed to analyze the two articles respectively. The lead author synthesized the results for each category, and the other authors validated and verified the findings. All discrepancies in attitudes toward each examination were thoroughly examined and resolved through group discussion until consensus was achieved.

4. Results and Discussion

The findings of the study are an overview and explanation of the main learning points obtained after the analysis of in-depth data extraction. The revelations that shine through the report provide a close analysis of the impact digitisation has on the delivery of the public services. The description will help to recognise the metamorphic nature of digitisation in the sphere of public administration by describing the basic trends, detailed trends, and general themes based on the analysed studies. The presented insights are broad and include detectable advantages of digitisation of the public sector, creation of modern technology and governing approaches to deal with digitisation implications of AI adoption, and the citizen roles in it. To emphasize the significance of digital transformation in local government, the discussion on the study covers the general implications of digital transformation on the local governments. This critical inquiry provides the practical obstacles and the changes that should be adopted within the local government to handle the processes of digital transformation. Hence, the paper is a valuable asset to everyone who cares about the convergence of digitalisation and public service because this field will pose a number of challenges and opportunities as a result of the digital transformation.

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Backed up by a thorough discussion of a recent compilation of literature, the paper summarises some of the main findings on the impacts of digitisation in providing services in the public sector as presented in Table 1.

Table 1: ***Key Findings***

Paper	Objective	Methodology	Findings	Key Takeaways
AI in Public Services (Wirtz, Weyerer, & Geyer, 2019)	Examines the role of AI in governance and decision-making.	Qualitative review of AI applications and regulatory challenges.	AI enhances efficiency but raises concerns about bias, privacy, and accountability.	Requires strong governance to strike a balance between benefits and risks.
Digital Maturity in Slovenia (Debeljak & Dečman, 2022)	Assess how city size affects digital transformation.	Quantitative analysis using demographic and digital service data.	Digital strategies must be tailored; population size alone is not a key factor.	Strategic planning is crucial for effective digital adoption.
Citizen-Centric E-Gov (Sigwejo & Pather, 2016)	Identifies challenges in e-government from a user perspective.	Case study with citizen interviews on digital service accessibility.	Poor UX and a lack of personalisation hinder adoption.	Governments must prioritise user-friendly design and mobile accessibility to ensure effective communication and engagement.
Smart City Data Governance (Filgueiras & Silva, 2022)	Explores data policy frameworks for smart cities.	Qualitative analysis using the IAD framework.	Institutional dynamics shape innovative city policies.	Effective governance is key to sustainable urban data management.
E-Gov & Post-COVID Growth (Goloshchapova, Skornichenko, & Turgaeva, 2022)	Evaluates e-government's role in economic recovery.	Surveys in the Czech Republic & Russia (2020-2021).	E-gov improves efficiency and reduces corruption, but the digital divide remains.	Digital governance is crucial for post-pandemic resilience.
AI & Digital Gov Trends (Hjaltalin & Sigurdarson, 2024)	Examines AI-driven transformation in the EU public sector.	Literature review, case studies, and expert interviews.	AI enhances governance but requires regulatory reforms.	Structural changes are needed to optimise AI adoption.
Smart Cities in China (Wu, 2020)	Identifies key drivers of digital transformation in local	Survey & SEM analysis with 311 responses.	Tech readiness and external pressures drive digitalisation.	Policymakers must align strategies with smart city goals.

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

	governments.			
Big Data in Public Admin (Zhang & Lv, 2021)	Assess the impact of big data on government operations.	Empirical analysis with expert evaluations.	Data-driven governance improves decision-making but requires strong regulation.	A unified digital infrastructure is essential for transformation.
Digital Gov in Brazil (Filgueiras, Flávio, & Palotti, 2019)	Study digitalisation challenges in Brazil's public sector.	Survey of 1,740 services, logistic regression analysis.	Institutional constraints hinder full digital adoption.	Policies must address service-specific digitalisation needs.
E-Gov in Indonesia (Gartika et al., 2024)	Analyses Indonesia's e-government transition.	Secondary data & focus groups.	ICT gaps and regulatory issues slow digital adoption.	Enhancing infrastructure and stakeholder engagement is critical.
Digitalisation & Citizen Satisfaction in China (Ye et al., 2023)	Examines the impact of digital tools on public service ratings.	Government service evaluation & regression models.	Mobile apps improve engagement and feedback.	Investing in digital platforms boosts citizen satisfaction.
Impact of Digital Tech on Service Delivery (Iddrisu & Fuseini, 2025)	Examine how digital tech, structures, and decisions affect service delivery in Ghana	PLS-SEM on survey data from 450 respondents	Strong link between digital tools, better structures, and delivery	Strategic digital plans need culture and leadership reform
Police Response to Digitalisation (Afzal & Panagiotopoulos, 2024)	Study police adaptation to digital reforms in Punjab, Pakistan	Survey of 292 officers, coping theory analysis	Officers adopt diverse strategies; system usability is key	Integration must consider user experience
Indonesia's Online Public Services (Sahur & Amiruddin, 2023)	Evaluate success factors in Indonesia's online public apps	Case study method	Gains in engagement, ongoing divide, and infrastructure gaps	User-centric, inclusive implementation needed
E-Service Adoption in Pakistan (Shah, Fayyaz, & Khan, 2025)	Assess e-service impact on public sector performance in Islamabad	Survey + regression, ANOVA on 480 participants	Citizens report positive change; staff cite institutional inefficiency	Dual view shows need for aligned digital policy
Digitalization in	Examine digital	Needs	Found gaps in	A policy

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

Central Asia & Caucasus (Omarova & Sharipova, 2022)	innovation progress in 8 countries	assessment of 9 governance dimensions	readiness, resources, and innovation	roadmap is needed for digital expansion

4.1. Making Services Better

Increased efficiency, speed, and effectiveness resulting from digital transformation are commonly cited as one of its main benefits in public services. The use of digital technology in public administration, as supported by research from the Czech Republic (Goloshchapova et al., 2022; Clark, 2022), China (Ye et al., 2023), and Ghana (Iddrisu & Fuseini, 2025), enhances rapid decision-making, automates processes, and enables teams to complete their work more efficiently. Governments can utilise big data analytics to closely monitor the outcomes of public services and make necessary policy adjustments promptly based on how people respond. AI can identify areas where services can be delivered in a way that utilises resources effectively. Economic and healthcare systems struggle after crises like the COVID-19 pandemic, making it especially valuable to introduce new approaches in these moments. However, to handle and interpret digital data correctly, fitting systems, rules, and laws are necessary.

4.2. How People feel and what they can do within the site

Whether digital services for the public will be successful depends significantly on how enjoyable users find them, which is primarily determined by the user experience (UX). Even with the growing sophistication of digital tools, using services remains limited because many people struggle with difficulties, poor designs, or when they are not optimised for smartphones. In South Africa, digital services with impersonal platforms and complex interfaces confused users and discouraged adoption (Sigwejo & Pather, 2016; Tila & Cera, 2021). By offering easy-to-use mobile services and apps, governments in China and Indonesia saw an increase in user participation and satisfaction (Ye et al., 2023). Many policymakers overlook the human element because they assume digital platforms are always effective.

4.3. Rules, Laws, and Leadership

There is now increased attention to governance and ethical concerns because digital tools—especially AI and big data—are being increasingly used in government work. Many research studies draw attention to biased algorithms, secret choices by machines, loss of privacy, and weak accountability to the public. If AI is not appropriately controlled in governing, users may worry about their privacy, argue Wirtz et al. (2019) and Hjaltalin & Sigurdarson (2024). AI could perpetuate bias or lead to the unfair treatment of vulnerable individuals if it is used in welfare or law enforcement without clear guidelines and oversight. Having good legal rules, ethical rules, and well-defined procedures within institutions will guide the proper use of new technologies. It demonstrates that handling government using digital technology is not just a matter of technology, but also politics, ethics, and laws.

4.4. Our ability and Systems to Work Digitally

If the proper support and spaces for digital transformation are not provided, it will not succeed. Among the primary challenges to e-government in many developing nations are inadequate internet connectivity, insufficient computer technology, incompatible systems, and a lack of digital literacy among public servants. According to work from Central Asia (Khan, 2020; Omarova & Sharipova, 2022) and Indonesia (Gartika et al., 2024), government efforts to utilise new technologies are limited when infrastructure fails to keep pace. In addition, providing public services throughout the country remains complex and inefficient as long as there is no unified set of digital services, including cloud, data protection, and agency-wide usage. This

Policy Journal of Social Science Review
Online ISSN 3006-4635
Print ISSN 3006-4627
Vol. 3 No. 12 (2025)

theme highlights that being prepared online cannot depend solely on the internet; it requires people, proper coordination among groups, and the use of various technologies.

4.5. Ensuring that Governance, Structures, Budgets, and Strategic Planning all Fit Together

Public sector organisations need a clear strategy, strong leadership, and internal alignment for successful digital transformation. Their success depends on how well digital tools are integrated into the overall organisational structure; they cannot achieve results alone. Studies from Brazil (Filgueiras et al., 2019), Pakistan (Shah et al., 2025), and Slovenia (Lin, 2021; Debeljak & Dečman, 2022) show that cities and government agencies that evaluate and coordinate their strategies tend to perform better in sustainability. Transformational initiatives are more likely to succeed if leadership fosters innovation, provides training, and aligns targets with technology. When strategies and tasks are siloed within departments, it can cause duplicated efforts and resource waste. Effective digital governance depends just as much on cultural change, leadership, and teamwork as on technology.

4.6. The Concept of Inclusion Encompasses Many Fields, but it is Most Clearly Evident in Technology

Themes observed in many studies are digital inclusion and the disparity between the technological users and non users. The online services make the government accessible to a greater number of people, but those people who do not have access to a modern gadget, stable internet connection, and digital literacy may be excluded. Low-income earners, aged people, and rural populations have been found in Pakistan, Indonesia, and Russia to have problems with digital engagement. In this way, the process of digitalisation brings greater benefits to cities and more wealthy people, and leaves the needy. To fill the digital access gap, there should be initiatives like the construction of new infrastructure in rural areas, training more citizens in digital skills, and delivering services that are compatible on different platforms and different languages.

Table 2 shows that digital plan of public service and achievements vary differently, pointing out the key strengths and challenges faced in each region. In the Czech Republic and Slovenia in the EU, good system planning and sound regulations become important factors in effective digital transformation. It is worth mentioning that the size of the city does not affect digital preparedness in those respects, and therefore small towns can be successful with proper measures. This fast growth in China can be credited to the technology and stringent government regulations and mobile phones contribute a lot towards satisfying the people. The South and Southeast Asian countries of Pakistan and Indonesia have an uneven development. Some of their core issues include infrastructural backwardness, lack of user-friendly designs, and sluggish development in the sector based on institutional tradition. This is because of the difficult, obsolete arrangements that continue to prevail in the region especially in Brazil, which necessitate the adoption of digital arrangements that will be specific to either form of service. As long as leaders are robust, the strategy is established and the population is not resistant to new technologies. Ghana in Africa has great potential to advance service delivery through digital approaches. The fact is that in Central Asia and the Caucasus, the use of digital tools is more of a dream than a reality. The regions are not equipped with the necessary resources, preparation, and influential leaders, which is why specialised digital transformation strategies must be applied. The table makes it clear that the extent of digitalisation opens up many opportunities; however, the direction in which public sector innovation proceeds depends on the local conditions of the region.

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Table 2: ***International Variations in Digital Government Service Models***

Region	Highlights
Europe (EU, Slovenia, Czech Republic)	Strategic planning and regulatory frameworks are central to success; digital maturity is not tied to city size.
China	Rapid uptake driven by technological readiness and policy pressure; mobile engagement improves satisfaction.
South & Southeast Asia (Pakistan, Indonesia)	Progress is uneven; user-centred design and infrastructure gaps are key issues; institutional inertia remains.
Latin America (Brazil)	Institutional barriers remain strong; solutions must be tailored to each public service.
Africa (Ghana)	Strong potential for service delivery improvement; requires leadership, strategic alignment, and cultural change.
Central Asia & Caucasus	Digital innovation is aspirational; gaps in resources, readiness, and governance require targeted policy roadmaps.

5. Conclusion

A shift to digital transformation by the local governments is required because it could improve governance and the delivery of public services. Artificial intelligence and other social innovations by ICT became a crucial part of the overhaul. The local government must center its digital initiatives on the satisfaction of its citizens, as these initiatives must be simplified to meet the expectations of its constituents. The introduction of the local government to digital transformation necessitates the adoption of a set of ethical rules that ensure the reduction of potential risk and system errors that may occur due to the adoption of technology. The government has embraced artificial intelligence and the manner in which operations are carried out has changed. The technological-oriented governance framework allows the provision of customized services, which facilitates governmental activities in a more convenient and inexpensive way.

The ethical risks areas of concern that need to be identified in the implementation of the AI technology are issues of bias information and transparency, and control of citizen behaviour. The utilization of AI and open government as a resource in terms of integration has a great possibility to improve governance by using creative and viable solutions. Nevertheless, even though the potential of Open Government Data (OGD) and AI is common, there is still a major resource to be underutilized. Collaboration and cooperation among the stakeholders, such as the industry, academia, and civil society, should be highly emphasized to maximize the potential of digital transformation by the local government. Such collaborations can make the experience, resources, and sponsorship that facilitate successful digital transformation plans possible. Further, the local authorities are likely to invest in the digitalization of its workers. The local government should also aim to deliver outstanding leadership and management in operational strategies in this study to facilitate the digital transformation initiatives. The businesses involved in handling legal structures can assist the government in giving an outline and a guideline of how change would occur in the digital field. Overall, digitalization should enhance the process of providing public services with the help of strategies that focus on citizens, appreciate ethical practices, involve all parties, increase digital literacy, and adopt strong leadership and governance solutions. The researchers also need to pay attention to the analysis of the way digital transformation projects are implemented and the effects they produce on the provision of the services to the population and their satisfaction.

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

References

Afzal, M., & Panagiotopoulos, P. (2024). Coping with digital transformation in frontline public services: A study of user adaptation in policing. *Government Information Quarterly, 41*(4), 101977.

Agarwal, P., Swami, S., & Malhotra, S. K. (2024). Artificial intelligence adoption in the post-COVID-19 new-normal and role of innovative technologies in transforming business: a review. *Journal of Science and Technology Policy Management, 15*(3), 506–529.

Akim, M. (2020). Analyzing the role of information and communication technology in economic development among OIC nations. *Journal of Policy Options*, *3*(3), 106-113.

Al Motairi, M., Al Meshal, S., & Alam, A. Connected Facility Quality and Customers' Consummation: A learning Study Report of the Selected Commercial Banks in Riyadh (Saudi Arabia).

Alam, A., Ali, S., Ahmad, J., Qureshi, A. H., & Ali, I. (2021). The Impact of Informal SME's on Socio-Economic Development of District Mardan. *Indian Journal of Economics and Business*, *20*(4).

Alam, A., Almotairi, M., & Gaadar, K. (2013). Marketing Friendly (Economically-Friendly, Costly-Friendly, Bio-Friendly). *Far East Journal of Psychology and Business*, *10*(1), 1-9.

Alam, A., Haris, M., Saeed, A., Banori, N. H. S., & Ibrar, M. THE EFFECT OF COVID-19 DEATHS ON STOCK TRADING VOLUME IN PAKISTAN STOCK EXCHANGE (PSX).

Alam, A., Malik, O. M., & Ullah, I. (2014). E-Branding Development Process for Entire Organization. *Asian Journal of Research in Social Sciences and Humanities*, *4*(6), 131-140.

Alam, A., Ullah, S., & Ahmad, J. (2023). IMPACT OF AUDIT QUALITY ON EARNING MANAGEMENT: A CASE OF CEMENT INDUSTRY. *Sarhad Journal of Management Sciences*, *9*(2).

Alam1&2, A. (2013). Creating the strategic brand 'driver'for the entire Organization.

Ali, A., Sajid, M. H., & Jadoon, A. K. (2025). Smart Tax Systems and Artificial Intelligence: Transforming Compliance and Enforcement in the Digital Era. *Annual Methodological Archive Research Review*, *3*(3), 157-176.

Alvarenga, A., Matos, F., Godina, R., & CO Matias, J. (2020). Digital transformation and knowledge management in the public sector. *Sustainability, 12*(14), 5824.

Amir, M. S. Ali, A., & Audi, M. (2025). Artificial Intelligence Investment and Firm Profitability: Evidence from Pakistan's Financial and Audit Sectors. *Policy Journal of Social Science Review,* 3(6), 42–59.

Bakhtiar, S., Khan, M., Iqbal, A., Khan, A. A., Abasyn, S. N., & Ali, K. (2025). Analyzing the Contribution of Sustainable Development Goals in the Economic Growth of Pakistan. *Advance Journal of Econometrics and Finance*, *3*(3), 175-185.

Bignami, F. (2022). Artificial intelligence accountability in public administration. *The American Journal of Comparative Law, 70*, 312-346.

Blanco-Mancilla, G. (2013). Citizen Engagement in Public Health Service Delivery: From Collaboration to Accountability. In *Non-Governmental Public Action and Social Justice* (pp. 159-180): Springer.

Bozkurt, A. (2023). Generative artificial intelligence (AI) powered conversational educational agents: The inevitable paradigm shift—Asian *Journal of Distance Education, 18*(1).

Brem, A., Giones, F., & Werle, M. (2021). The AI digital revolution in innovation: A conceptual framework of artificial intelligence technologies for the management of innovation. *IEEE Transactions on Engineering Management, 70*(2), 770–776.

Clark, M. (2022). The social consequences of the information civilization: Cyber risks to youth in the digital age. *Journal of Policy Options*, *5*(2), 20-27.

Debeljak, A., & Dečman, M. (2022). Digital transformation of Slovenian urban municipalities: A quantitative report on the impact of municipality population size on digital maturity. *Network of Institutes and Schools of Public Administration in Central and Eastern Europe. The NISPAcee Journal of Public Administration and Policy, 15*(2), 25-51.

Dek, H., & Ibrahim, N. (2025). Artificial Intelligence in Digital Marketing: Impacts on Consumer Decision-Making and Privacy Concerns. *Journal of Policy Options*, *8*(3), 1-16.

Ebrahim, S., & Karim, A. (2025). Evaluating the Impact of Artificial Intelligence on Influencer Marketing Through Product Perceptions and Virtual Personas. *Journal of Policy Options*, *8*(4), 45-59.

Fernández-Sánchez, M. R., Garrido-Arroyo, M. d. C., & Porras-Masero, I. (2022). *Curricular integration of digital technologies in teaching processes.* Paper presented at the Frontiers in Education.

Filgueiras, F., & Silva, B. (2022). Designing data policy and governance for smart cities: theoretical essay using the IAD framework to analyze data-driven policy. *Revista de Administração Pública, 56*(4), 508-528.

Filgueiras, F., Flávio, C., & Palotti, P. (2019). Digital transformation and public service delivery in Brazil. *Latin American Policy, 10*(2), 195-219.

Gartika, D., Widiyanto, A., Diana, M., Hapiah, Y., Khotimah, F. K. H., Nursidiawati, I., . . . Fauziyah, E. (2024). How does local government implement e-government: A case study from Bali Province, Indonesia. *Journal of Democracy & Open Government, 16*(1).

Geda, A. (2023). Advancing Rural Welfare-The Role of Irrigation Technology in Ethiopia's Agricultural Sector. *Journal of Business and Economic Options*, *6*(2), 32-38.

Ghauri, M. A. Z., Mudassar, M., & Audi, M. (2025). From Technology Adoption to Strategic Coherence: The Role of Digitalization in Industrial Growth in Developing Countries. *Qualitative Research Journal for Social Studies*, *2*(3), 392-407.

Goloshchapova, T., Skornichenko, N., & Turgaeva, A. (2022). *Development of the Leading Sustainable and Viable e-Government Concept in the Post-COVID Era.* Paper presented at the PRIZK International Conference-Novel Insights in the Leadership in Business and Economics After the COVID-19 Pandemic.

Gurtoo, A., & Williams, C. (2015). *Developing Country Perspectives on Public Service Delivery.* Springer.

Hashmi, M. S., Ali, A., & Al-Masri, R. (2025). Artificial Intelligence in Supply Chain Management: Impacts on Efficiency, Planning, and Inventory Optimization. *Journal for Current Sign*, *3*(3), 617–637.

Hassan, A. O. P., Akintola, M. A., & Hassan, H. B. (2024). Benchmarking Public Service Delivery in Sub-Saharan Africa: A Critical Evaluation. *International Journal of Research and Innovation in Social Science, 8*(7), 2248–2258.

Hjaltalin, I. T., & Sigurdarson, H. T. (2024). The strategic use of AI in the public sector: A public values analysis of national AI strategies. *Government Information Quarterly, 41*(1), 101914.

Horowitz, M. C., Allen, G. C., Kania, E. B., & Scharre, P. (2022). *Strategic competition in an era of artificial intelligence*: Center for a New American Security.

Iddrisu, I., & Fuseini, I. (2025). The impact of digital technologies on public service delivery: the role of organizational structures and decision-making. *International Journal of Organizational Analysis*.

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Ikpebe, E. (2024). Challenges of Public Service Delivery in Developing Countries. In *Handbook of Public Service Delivery* (pp. 323-339): Edward Elgar Publishing.

Karim, D., Ahmad, K., & Ali, A. (2025). Artificial Intelligence and the Evolution of Accounting: Transforming Roles, Skills, and Professional Practices. *Qualitative Research Journal for Social Studies,* 2(1), 17-28.

Khalid, H., Ahmad, K., & Ali, A. (2025). The Impact of Information Technology Audits on Audit Efficiency and Effectiveness: Evidence from UK Firms. *Annual Methodological Archive Research Review*, *3*(4), 511-535.

Khalid, U., Ali, A., & Audi, M. (2025). Understanding Borrowing Behaviour in the EU: The Role of Mobile Payments, Financial Literacy, and Financial Access. *Annual Methodological Archive Research Review*, *3*(5), 41-66.

Khalil, S., Audi, A., & Ali, A. (2025). Economic Growth, Digital Access, and Urbanization: Drivers of Financial Inclusion in A Comparative Global Context. *Contemporary Journal of Social Science Review*, *3*(2), 52-61.

KHAN, A. (2015). PAK-CHINA ECONOMIC COOPERATION IN NEW DIMENSIONS.

Khan, A. A. (2024). Revolutionizing The Pakistani Economy: The Transformative Potential of the Blue Economy. *International Journal of Computer and Information Security Solutions*, 1689-1690.

Khan, A. A. INTEGRATING COASTAL ECONOMIC DEVELOPMENT WITH ENVIRONMENTAL STEWARDSHIP: A COMPREHENSIVE STUDY OF THE BLUE ECONOMY IN SAUDI ARABIA.

Khan, A. A. MADE IN KSA AND TOURISM: TWIN PILLARS OF SAUDI ARABIA'S "NATION BRAND".

Khan, I., Awais, M., Alam, W., & Alam, A. (2020). The Collaborative Effect of Sustainable Project Management (SPM) and Benefits Management (BM) on Project Success: with the Influencing Force of Project Governance. *European Journal of Business and Management Research*, *5*(6).

Khan, W. (2020). Mobile Phone Usage Patterns and Impacts Among University Students: A Study at Bacha Khan University, Pakistan. *Journal of Policy Options*, *3*(4), 114-118.

Latupeirissa, J. J. P., Dewi, N. L. Y., Prayana, I. K. R., Srikandi, M. B., Ramadiansyah, S. A., & Pramana, I. B. G. A. Y. (2024). Transforming public service delivery: A comprehensive review of digitization initiatives. *Sustainability, 16*(7), 2818.

Lin, C. (2021). Exploring the Influence of Internet Perceptions on Online Shopping Decision-Making Styles. *Journal of Policy Options*, *4*(3), 27-33.

Malik, H., Chaudhary, G., & Srivastava, S. (2022). Digital transformation through advances in artificial intelligence and machine learning. In (Vol. 42, pp. 615-622): SAGE Publications, Sage UK: London, England.

Marc, A., Ali, A., & Roussel, Y. (2021). *The Advancement in Information and Communication Technologies (ICT) and Economic Development: A Panel Analysis*. University Library of Munich, Germany.

Minella, C. (2025). Managing Agile Across Borders: A Review of Scrum Implementation in Globally Distributed Software Development. *Journal of Policy Options*, *8*(2), 37-45.

Mubasher, A., Khan, T., & Alam, A. (2020). Empirical analysis of tourism as a tool to increase foreign direct investment in developing country: Evidence from Pakistan. *International Journal of Business, Management and Social Research*, *8*(01), 437-442.

Naqeebullah, A. I., & Alam, A. COMPARISON OF ISLAMIC BANKING SYSTEM AND CONVENTIONAL BANKING SYSTEMS IN PAKISTAN.

Omarova, T., & Sharipova, D. (2022). Digitalisation of Public Service Delivery, and Innovation in Government Operations in Central Asia and the Caucasus. *International Journal of Civil Service Reform and Practice, 7*(1).

Pati, D., & Lorusso, L. N. (2018). How to write a systematic review of the literature. *HERD: Health Environments Research & Design Journal, 11*(1), 15-30.

Plesner, U., Justesen, L., & Glerup, C. (2018). The Transformation of Work in Digitized Public Sector Organizations. *Journal of Organizational Change Management, 31*(5), 1176-1190.

Rahman, M., & Chowdhury, H. (2025). Sustainability, Digital Transformation, and Firm Outcomes: The Mediating Role of Digitalization. *Journal of Policy Options, 8*(3), 30-44.

Sabir, M. B., Alvi, A. A., & Audi, M. (2025). Awareness and Integration of Cloud Computing In Accounting: Evidence From Pakistan. *Contemporary Journal of Social Science Review, 3*(2), 2563-2573.

Sahur, A., & Amiruddin, A. (2023). Analysis of the Success of Implementing Digital Service Delivery in the Indonesian Public Sector: A Case Study on the Use of Online Public Service Applications. *International Journal Papier Public Review, 4*(3), 1-9.

Sekwat, A., & Tacaura, J. W. (2024). Challenges of public service delivery in a global era. In *Handbook of Public Service Delivery* (pp. 359-376): Edward Elgar Publishing.

Shah, U., Fayyaz, A. B., & Khan, S. (2025). Assessing the Impact of Digital Transformation on Public Sector Efficiency: A Study of E-Service Adoption and Government Performance.

Shaukat, H., Ali, A., & Audi, M. (2025). Artificial Intelligence and Economic Transformation: Implications for Growth, Employment, And Policy in The Digital Age. *Research Consortium Archive, 3*(2), 852-869.

Sigwejo, A., & Pather, S. (2016). A citizen-centric framework for assessing e-government effectiveness. *The Electronic Journal of Information Systems in Developing Countries, 74*(1), 1-27.

Stavar, D. (2025). Machine Learning versus Traditional Statistical Models in Credit Risk Prediction: Evidence from Peer-to-Peer Lending Markets. *Journal of Policy Options, 8*(4), 35-44.

Tawfik, G. M., Dila, K. A. S., Mohamed, M. Y. F., Tam, D. N. H., Kien, N. D., Ahmed, A. M., & Huy, N. T. (2019). A step-by-step guide for conducting a systematic review and meta-analysis with simulation data. *Tropical medicine and health, 47*, 1–9.

Tila, G., & Cera, D. (2021). Information and Communication Technologies Integration and Usage Patterns Among University Students. *Journal of Policy Options, 4*(1), 1-6.

Ullah, M., Ali, A. & Jadoon, A. K. (2025). Quantum Computing and Blockchain Security: A Critical Assessment of Cryptographic Vulnerabilities and Post-Quantum Migration Strategies. *Policy Research Journal, 3*(7), 159–172.

Umair, S. M., Ali, A., & Audi, M. (2025). Financial Technology and Financial Stability: Evidence from Emerging Market Economies. *Research Consortium Archive, 3*(1), 506-531.

Valverde-Berrocoso, J., Fernández-Sánchez, M. R., Revuelta Dominguez, F. I., & Sosa-Díaz, M. J. (2021). The educational integration of digital technologies pre-COVID-19: Lessons for teacher education. *PloS one, 16*(8), e0256283.

van Zanden, J. L. (2023). Examining the relationship of information and communication technology and financial access in Africa. *Journal of Business and Economic Options, 6*(3), 26-36.

Vinothkumar, J., & Karunamurthy, A. (2023). Recent advancements in artificial intelligence technology: trends and implications. *Quing: International Journal of Multidisciplinary Scientific Research and Development, 2*(1), 1–11.

Policy Journal of Social Science Review

Online ISSN 3006-4635

Print ISSN 3006-4627

Vol. 3 No. 12 (2025)

Wirtz, B. W., Weyerer, J. C., & Geyer, C. (2019). Artificial intelligence and the public sector—applications and challenges. *International Journal of Public Administration, 42*(7), 596-615.

Wu, W. N. (2020). Determinants of citizen-generated data in a smart city: Analysis of 311 system user behavior. *Sustainable Cities and Society, 59*, 102167.

Ye, X., Su, X., Yao, Z., Dong, L.-a., Lin, Q., & Yu, S. (2023). How do citizens view digital government services? Study on digital government service quality based on citizen feedback. *Mathematics, 11*(14), 3122.

Yeung, C., & Chung, L. (2025). Technology, Institutions, and Longevity: An Empirical Analysis of AI Investment and Life Expectancy in the OECD. *Journal of Policy Options*, *8*(3), 17-29.

Yukhno, A. (2024). Digital transformation: Exploring big data governance in public administration. *Public Organization Review, 24*(1), 335–349.

Zhang, A., & Lv, N. (2021). Research on the impact of big data capabilities on the government's smart service performance: empirical evidence from China. *IEEE Access, 9*, 50523–50537.