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E-Governance and its Role in achieving Sustainable Development Goals (SDGs) in Pakistan

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ABSTRACT

This paper discusses how E-Governance has contributed to attaining Sustainable Development Goals in Pakistan using a qualitative approach to the analysis of government reports, policy documents, academic literature, and official publications. Results show that Pakistan has already gone far with regard to digital governance, and the Pakistan Reforms Report 2026 document reports 660 reforms in the federal institutions with 74 of them being digital-specific initiatives. The idea of reforms is highly consistent with SDG 16 (Peace, Justice, and Strong Institutions), SDG 9 and SDG 7 which emphasize the governance first method of development. The existing provincial projects especially Punjab show how digital monitoring systems, third-party validation and evidence-based project management can come to reality. E-Governance has positive effects on poverty reduction and social welfare, facilitated by efficiency in the delivery of services to society and mediated by digital literacy. Nevertheless, this progress has not eliminated such challenges as execution fatigue, lack of coordination, digital divide, and sustainability issues. The report finds that combining the reforms, broadening accessibility, and investing in human resources are significant in achieving the revolutionary potential of the E-Governance to the SDG agenda in Pakistan.

| **KEYWORDS** | Digitalization, Governance, Sustainable Development goals, Electronic Government, Pakistan |

Introduction

As many emerging economies, Pakistan has giant economic issues. This country has long been deprived of jobs, many poor people, and bad infrastructure (Government of Pakistan, 2022). These problems form a vicious cycle which is extremely difficult to break yet today when the world is becoming more digital than ever before, Pakistan stands a good opportunity to turn around this narrative. The application of technology in government and business has ceased to be an elegant concept but a solution to the old-established issues; studies have revealed that the use of digital tools enables countries to create jobs, make services quick and cheap, and get more people into the economy (World Bank, 2021; Nadeem, Ali, Rehman & Saarinen, 2024).

The intention of Pakistan to employ technology is quite applicable to the determination of the country to the world via Sustainable Development Goals (SDGs). These are 17 major objectives designed by the United Nations that all nations including Pakistan declared that they would attempt to achieve by 2030 (United Nations, 2015). The aims involve preventing poverty and hunger to providing good healthcare and education to all people but it is extremely hard to achieve such objectives. The United Nations has already claimed that the world is already behind the schedule and in the case of a country such as Pakistan, the problems are even greater (UNDP Pakistan, 2020). That is the reason why the concept of Electronic Governance or E-Governance is highly relevant. E-Governance does not simply mean making government papers online. It has to do with the utilization of computers,

internet, and mobile phones to transform the way the government communicates with its citizens and delivers services to them. It desires to clarify things, prevent corruption and allow people to participate more (Hassan & Gilani, 2021). It proved how powerful this can be and was demonstrated in such countries around the world as Estonia and India. Other initiatives have also begun in Pakistan, including the National Database and Registration Authority (NADRA) to issue digital IDs and the Pakistani Citizen portal where people can file complaints (NADRA, 2021).

The gap between what is desired and what is going on is huge. Despite these fine projects, not all people in Pakistan, most of them in villages and women, have the opportunity to use the internet or they are just unaware of it (Ali and Raza, 2022). The Internet and electricity services are not always good or even absent because there are also actual concerns about the safety of the Internet and ensuring the confidentiality of people (Pakistan Telecommunication Authority, 2023). Such issues imply that E-Governance may just be of service to a few individuals, and some others will be left behind, and this is not the desire of the SDGs.

In this research paper, a close examination of the connection between E-Governance and SDGs in Pakistan will be done. It will attempt to respond to such significant questions as how does the digital government projects contribute to the reduction of poverty or improvement of education and what are the primary reasons why they cannot work? The case of these questions is that by consulting them, this study will be able to provide clear helpful ideas to the leaders and policymakers. The primary goal is to make Pakistan establish a digital form of government that will be just to all, and in actual sense assist the nation develop in a sustainable manner as stated in the 2030 Global Goals.

Literature Review

The conceptual grounding of the scholarly debate on digitalization and governance in Pakistan can create a clear situational perspective of technology as a tool of sustainable development. Electronic government, also known as e-governance, can be defined as an accelerating trend in the field of government administration that is utilizing information and communications technology (ICT) to improve its efficiency, transparency, and citizen interaction (Muzaffar, Fern and Yaseen, 2023). This is unlike e-government which basically allows the transaction of electronic activities but e-governance is more about the interaction between the government and the citizen at a deeper level mediated by technology to enhance accountability. These programs began in the 1990s by countries such as the United States, Singapore, and India which serve as a comparative framework to the efforts of Pakistan (Muzaffar, Fern &Yaseen, 210).

The Pakistani context research shows that digitalization is very crucial in breaking persistent socio-economic barriers including unemployment levels and low infrastructure thus contributing to inclusive development and creating new economic value. In Pakistan, this digital imperative is always placed within the framework of its dedication to the global Sustainable Development Goals (SDGs) 2015-2030 (Aslam and Muzaffar, 2025; 2025b). Nonetheless, research also highlights that there are serious issues concerning the future sustainability of such efforts such as data security, low levels of population digital literacy, and unequal access to technology (Aslam and Muzaffar, 2025a). The given body of work requires thematic and methodological trends in research to be analyzed thoroughly during 2018-2025 to determine knowledge gaps and evaluate how digitalization frameworks influence the efficiency, openness, and inclusiveness of the public services, thus providing practical recommendations that would be useful to policymakers (Fatima, Arif & Arif, 2026).

This paper analyze and critically discusses how digital governance and sustainable development has become a crucial field of academic interest particularly in the context of the developing countries like Pakistan. In the last ten years, the significance of information and

communication technologies (ICT) and E-Governance in promoting the United Nations Sustainable Development Goals (SDGs) has grown, with a focus on both the opportunities and challenges of the digital transformation in the emerging economies (Vyas-Doorgapersad, 2022; Asghar, Cheema, and Muzaffar, 2025).

ICT has been established globally as an agent of attainment of SDGs through innovation, economic development, and social equality. South African and other developing economy studies demonstrate that the actual implementation of digitalization in terms of SDG achievement is inconsistent since it is disrupted by limited budgets, the absence of strategies, organizational resistance, and inadequate human capital (Vyas-Doorgapersad, 2022; Islam, Ahmed, and Sayed, 2023). When properly used, digital technologies have the potential of improving employment, access to education, and digital literacy, and reduce the cost operations of businesses and governments, as well as contribute to the sustainability (Batool, Asmat, and Muzaffar, 2023; Perez-Martinez, Hernandez-Gil, San Miguel, Ruiz, and Arredondo, 2023). Nonetheless, trade-offs have been noted especially in areas involving the environment with economic growth models possibly being in conflict with climate change mitigation, protection of resources and waste management goals.

Regarding the developing countries, E-Governance becomes a critical tool of SDGs application. Rehman, Shah, and Ahmed (2018) pointed out that connectivity and open data are key elements of E-Government, which are directly and indirectly connected with all 17 UN SDGs. The desktop research on the National Information and Technology Board (NITB) and NADRA portals in Pakistan indicated that the 2030 SDG agenda can not be achieved to the full extent unless the quality of e-service delivery, assurance, and reliability are realized. On the same note, Yoo and Song (2021) highlighted the importance of the Internet and other digital technologies in promoting SDG in emerging economies, which demonstrates the applicability of digital inclusion when it comes to sustainable development.

These findings are further supported by the theory to be proven in Pakistan. The authors of the quantitative research are Tabasum, Khan, Khan, and Hussain (2024); the study was conducted among 242 stakeholders, such as government officials, IT professionals, and beneficiaries of E-Governance programs. Their result showed that E-Governance has a significant effect on such variables as poverty reduction ($b = 0.38$, $p < 0.001$) and social welfare benefit ($b = 0.22$, $p < 0.001$), but the most important moderating variables are digital literacy and accessibility ($b = 0.60$, $p < 0.001$). These findings highlight that the socio-economic benefits of E-Governance can be optimized only with the help of digital inclusion and effective provision of the services to the population.

The other issue in the E-Governance environment of Pakistan is digital trust. In her MS thesis at IBA Karachi, Mazhar (2026) conducted a systematic review of 20 peer-reviewed studies (2010-2023) in the PRISMA framework and could identify four major categories that influence E-Government adoption: policy and governance, technology and infrastructure, security and privacy, and digital trust. Sequential mixed-method research, such as the interviews with cybersecurity professionals and senior IT officials and quantitative surveys, helped Mazhar to develop a cybersecurity oriented digital trust framework that would lead policymakers as well as IT practitioners to increase trust and uptake of digital public services.

Concrete examples of the E-Governance practices are provided in provincial case studies. Haque and Salman (2024) reported some of the major initiatives of Punjab such as the Health Information and Service Delivery Unit (HISDU) to digitalize health services, the Punjab Information Technology Board (PITB) to be on the forefront of provincial digital transformation, and the Punjab Police Services (PPS) to deploy digital systems in law enforcement and citizen services. These examples illustrate the real implementation of the principles of E-Governance and the role they play in enhancing service delivery in the case of subnational level.

The recent trend in Pakistan is the development of policies that indicate an increased institutional interest in digital transformation. The Pakistan Reforms Report 2026 reported more than 600 governance reforms 74 of which were IT/digital reform and 160-190 people-centric reform emphasizing on digital service delivery, skill development, and SDG 16 (Mishal Pakistan, 2026; Ahmad, 2026). Likewise, World Bank-financed projects like the Public Resources for Inclusive Development - Multiphase Programmatic Approach (PRID-MPA) and the Digital Economy Enhancement Project (a total of 777.73 million) are designed to enhance digital infrastructure and e-procurement systems and websites that provide services to citizens (World Bank, 2025). These efforts outline the national policy concordance with the global contribution and the SDG agenda.

The sector specific studies also demonstrate how digitalization can be used to attain specific SDGs. Almeida and Okon (2024) reviewed port digitization projects and found that a majority of ports (72.1) worked on SDGs 8, 9, 13, and 17, and that digitalization increased the efficiency of the operations and climate resilience. Likewise, EU policies of applying the digital technologies to the transport sector have demonstrated the statistically significant decrease in CO2 emissions and the enhancement of the environmental sustainability, which serves as evidence of the cross-sectoral effect of digitalization on SDGs (Elmassah and Mohieldin, 2020).

In spite of these contributions, there still are a number of gaps in the literature. There are limited longitudinal studies that follow the long-term effects of E-Governance on SDGs as well as disaggregated studies that can explain the effects based on the regional, rural-urban, and socio-economic differences. Perspectives that are citizen-centric that capture the level of satisfaction, obstacles, and experience with digital platforms have not been studied, and there are rather no comparative studies between Pakistan and other emerging economies. It will be critical to fill these gaps to come up with inclusive, evidence-based, and sustainable digital governance frameworks that can help in advancing the SDG agenda.

Materials and Methods

In this study, the qualitative research design was adopted and the researcher examined the issue of whether e-governance was relevant to attaining the Sustainable Development Goals (SDGs) in Pakistan. This will be descriptive and analytical research, which employs secondary data sources, such as policy documents of the government and SDG progress reports, and scholarly literature on digital governance. The analysis of documents as a method of analyzing national e-governance initiatives and their compliance with SDG targets was used. Thematic content analysis was selected to analyze the data basing on major themes like transparency, institutional capacity, digital inclusion, and service delivery. In this way, it is possible to critically evaluate the role of digital governance in sustainable development in Pakistan.

Results and Discussion

Policy Framework and Digital Transformation: The 2026 Reforms Landscape

Pakistan has entered the era of significant change of governance. The Pakistani reforms report 2026 records reforms in 660 institutions in 135 federal establishments in the year 2025 with reforms five times more than those in the previous year (Mishal Pakistan, 2026; Ahmad, 2026). Nearly one out of three reforms was digital (74 IT-related reforms) and 160-190 were people centric which included digital service portals, mobile redress services and digital certification applications. Digital Nation Pakistan Bill 2025 offered the legal structure of the so-called Pakistan Stack that is a digital layer of information exchange to avoid any paper-based operations and ensure the efficient interaction between the citizens and the state (Ministry of Information Technology, 2025).

The strategic prioritization is presented in sectoral analysis. The first one was the power and energy industry, where there were 118 reforms regarding the restructuring of the circular debt and negotiations with the independent power producers, and about PKR 4.2 trillion lifecycle savings were estimated. The law and justice sector implemented 96 reforms that emphasized the concept of Digital Justice like the system of automated case tracking, e-filing system and transparency systems of procurement (Mishal Pakistan, 2026; Ahmad, 2026). These digital reforms have been perceived to be economic facilitators, which increase investor confidence and general efficiency in the institutions.

SDG Development priority and alignment

The Sustainable Development Goals have been well cohered with the reforms. The Pakistan Reforms Report 2026 has set SDG 16 (Peace, Justice and Strong Institutions) as the more related to 180-210 reforms which are directly connected to the institutions strengthening and their transparency (Mishal Pakistan, 2026). The following targets are SDG 9 (Industry, Innovation and Infrastructure), SDG 7 (Affordable and Clean Energy), which means that the sphere of interest is modernization of the industrial industry, as well as reforms in the industry of energy. SDG 8 (Decent Work and Economic Growth) is stimulated by trade facilitation, improved business registration processes and computerization of regulatory compliance (Ahmad, 2026).

Nonetheless, despite the development, the number of climate-related reforms is still not proportionate to the vulnerability of Pakistan to climate-related threats as it is one of the future priorities (Mishal Pakistan, 2026). Haque and Salman (2024) caution that despite the increment of the policy framework, the digital reforms transformation into measurable SDG deliverables still largely relies on the presence of the consistent implementation, monitoring, and sufficient resources on the provincial and local levels.

Digital Governance and Human Capital Infrastructure

Reform sustainability relies on the investments in digital infrastructure and the human capital. More than 1,500 federal workers were trained by the National Information Technology Board (NITB) about the e-office system which enabled the collaboration of the multi-minuses and control over the management of the information centrally. In order to facilitate such initiatives, a fiber optic, secure e-government intranet is created (Institute for eGovernment, 2026).

In 2025, 12,000-15,000 officials will have undergone upskilling (12,600 Skill Tech certifications and 7,000 Google Career Certificate) suggesting that human capital will be viewed as enabling and not an administrative expense (Mishal Pakistan, 2026; Ahmad, 2026). In order to rearrange e-office applications, there was extensive survey on human resource position in the ministry, IT infrastructure and work process. Change and orientation have been managed using the focal persons who are appointed by 30 ministries (Institute for eGovernment, 2026). The presence of such investments demonstrates that sustainable E-Governance is not only about technology but about highly qualified human resources that can work, support and develop innovations in the digital systems to ensure that reforms do not end with policy documents but introduce functional increase.

E-Governance in the Provinces: Punjab Experience.

One of them is the province of Punjab which has applications of E-Governance on the Health Information and Service Delivery Unit (HISDU), the Punjab Information Technology Board (PITB), and digitization of the Punjab Police Services (Haque and Salman, 2024). Evidence-based monitoring is more transparent, accountable, and efficient, which is biased to SDG-oriented development (IEEE, 2025).

The Chief Minister offers the District Sustainable Development Goals Programme (CMD-SDGs) which incorporates the Third-Party Validation (TPV) and digital monitoring of 3,481 development schemes in 35 districts (CW Pakistan, 2025). Geographic Information system mapping (GIS) and mobile applications are used to assist them in uploading their evidence of progress and environmental analysis so as to give real time control to the contractors. The quality of materials and infrastructure are evaluated by four quality assessment laboratories, where TPV is done on 20% schemes before they are approved. Those attempts are the shining examples of the way the corruption could be reduced and the correctness of the data and the effective distribution of the resources to the population with the help of the digital monitoring.

E-Governance Impact on Poverty Reduction and Social Welfare

Empirical studies confirm that E-Governance contributes significantly to poverty reduction ($\beta = 0.38$) and social welfare improvements ($\beta = 0.22$), mediated by public service efficiency (Tabasum et al., 2024). Digital literacy acts as a significant moderating factor ($\beta = 0.60$), highlighting the need for inclusive access to maximize outcomes.

These findings underscore that while policy frameworks and technology are essential, complementary investments in digital skills, infrastructure, and citizen engagement are critical for translating digital governance into tangible socio-economic benefits (Tabasum et al., 2024).

Challenges and Barriers to E-Governance Implementation

There are still implementation challenges that remain amidst improvement. Implementation exhaustion, lack of coordination between federal and provincial governments, and institutional capacity restraint are some of the factors, which prevent effective implementation of reforms in Pakistan (Mishal Pakistan, 2026). Some of the departments have parallel manual systems that cause efficiency and confusion among the citizens (Haque & Salman, 2024).

There are also technological gaps, bureaucratic hindrances, and political barriers to evidence-based monitoring systems (IEEE, 2025). Stakeholders who are not ready to embrace transparency may be problematic to the CMD-SDGs program in Punjab and this has necessitated the enhancement of the political backing of the program coupled with citizen accountability (CW Pakistan, 2025). Meanwhile, the aspect of long-term sustainability is also problematic because agencies are not responsible of the efficiency of the post-implementation scheme and may lead to the worsening of the digital governance benefits.

Digital Divide and Inclusion Problems

The digital gaps and infrastructure are also still major impediments. Universal Telecentres have also grown to 500 to 35 to enable e-services to rural population, yet the coverage is inadequate compared to the rural population (Institute for eGovernment, 2026). In the absence of effective broadband and ICT literacy initiatives, the digital form of governance can be skewed in favor of urban residents, and inequalities will continue to increase (Tabasum et al., 2024). The potential is demonstrated by mobile commerce development through the Easypaisa, Mobicash, and other applications, but the lack of connectivity and disparities in skills impairs the full potential.

Applications of Sectoral E-Governance

Digital Financial Services

The services of Easypaisa, Mobicash, and UBL OMNI increase access to finance among the unbanked populations and improve poverty alleviation and inclusion of the economies (Tahir et al., 2025; Muzaffar et al., 2020; Institute for eGovernment, 2026). The innovations driven by start-ups are used to facilitate the collaboration with the banks and national financial bodies in order to scale digital financial services.

Telemedicine and Digital Health

The use of telemedicine programs in Rawalpindi, Karachi, and Multan supports remote population specialist consultations. Flood-impacted zones equipped with mobile units send live video to health professionals, which will minimize travel expenses and enhance the accessibility of treatment (Institute for eGovernment, 2026; Mukhtar et al., 2025). Patients have digital health literacy which leads to patient-centered care.

Law Enforcement and Public Safety

Sindh police computerized records making accessibility and operational efficiency better. The Excise and Taxation Department of Islamabad launched chip-based vehicle registration cards, and it is the first in multi-security digital systems (Institute for eGovernment, 2026).

Systems of Electorates and Systems of Identity.

Text-based vote verification and biometric SIM systems of NADRA reduce inefficiencies and increase the lessee involvement and connectivity, having an impact on SDG (Rehman et al., 2018; Institute for eGovernment, 2026). These systems combine the verification of identity, access to data and availability of services that are crucial to open governance.

Conclusion

The useful conclusion that came out of the current research on E-Governance and the contribution that it makes to fulfilling Sustainable Development Goals in Pakistan is the fact that digital governance has the potential to transform the country in terms of basic institutional, economic, and social problems. Pakistan is an underdeveloped country pursuing a sustainable development, and the successful application of E-Governance can help to promote its path to the 2030 Agenda considerably. The analysis indicates that Pakistan has achieved an impressive policy achievement, and the Digital Nation Pakistan Bill 2025 and Pakistan Reforms Report 2026 report detail more than 600 governance reforms in federal institutions. It shows that even the top leadership fully understands that the digital transformation is the key to modernizing governance and speeding up the development.

The paper concludes that the E-Governance projects in Pakistan are clearly geared towards Sustainable Development Goals, and particularly SDG 16, which is concerned with peace, justice and strong institutions. The automation of case tracking and procurement systems, among other digital reforms in the law and justice sector, are changing the institutional accountability and decreasing the chances of corruption. Punjab provincial projects such as digitized monitoring of development projects and third party validation mechanisms are examples of how technology can be used to increase transparency and efficiency in the delivery of the public services. The spread of the digital governance in the various fields of interaction between citizens and the state can be observed through sectoral applications in financial services, healthcare, and citizen services.

Nevertheless, the study also states that in spite of the policy momentum, Pakistan has chronic difficulties to transform digital vision to the ground-level reality. Corruption is also an entrenched part of the institutional fabric, and even though E-Governance can decrease the possibility of corruption by limiting the face-to-face interactions and automating the procedures, it needs a good implementation and institutional motivation. The digital divide has persistently left out the marginalized groups, especially the rural and women groups, outside of having access to digital services. The lack of extensive data protection laws makes digital trust weak because of the fear of privacy and security of the data. The bureaucratic resistance and the lack of coordination between federal and provincial governments are also impediments to useful implementation.

The major factors behind these implementation challenges are poor levels of digital infrastructure in the remote areas, low rates of digital literacy amongst the citizens and the government, absence of robust institutionalized data protection, lack of effective co-ordination systems among the various levels of government, and opposition to the stakeholders who perceive transparency as weakening of the established power systems. Lack of effective mechanisms of punishing data breaches and cybercrime and poor implementation of the existing laws also compromise the trust that people have on the digital systems.

To address these obstacles and achieve maximum potential of E-Governance in sustainable development, reforms need to be conducted on a large scale in Pakistan in various levels. The digital divide should be narrowed by increasing the infrastructure investment and countrywide digital literacy. Extensive data protection laws should be passed to create confidence among the citizens and create accountability to the misuse of their data. The federal and provincial authorities should enhance their coordination mechanisms that will help to fill gaps in the execution and interoperability of digital systems. The development of human capital should be a long-term objective, and government officials should be trained constantly on all levels. The principles of citizen-centric design should be applied to all E-Governance projects, and the digital platforms should be usable, accommodative, and receptive towards the needs of various users.

The National Database and Registration Authority, Information Technology Board of Pakistan and other organizations involved in the digital governance need to use all the powers bestowed by the state to enhance better service delivery and lead by examples to others. Consistent feedback mechanisms to the population should be undertaken to evaluate the experiences of the citizens on the digital services and rectify where needed. Over the past years, Pakistan has accomplished a good step in institutionalizing the policy template of digital governance, however, the emphasis now is on the quantity of reform being recorded in the document, rather than the quality of the reform being enacted, the equity of access to the same and its permanency.

To sum up, E-Governance in Pakistan is in a precarious juncture. These are good policy underpinnings, unprecedented reform momentum, and reinforcement of international relations. Nevertheless, the enduring effectiveness of digital governance in the acceleration of the development process towards the Sustainable Development Goals will not be based on how many reforms are issued but rather on their reasonable implementation and a wider scope. The key issue is to bridge the gap between the policy intent and the citizen experience. Provided the causes and symptoms of implementation failures are identified and mitigated with long-term political dedication, strategic investment, and uncompromising attention to the needs of the citizens, E-Governance will be able to deliver on the promise it makes of being a transformational force to sustainable development in Pakistan, introducing transparency, efficiency and prosperity in the country.

Recommendations

The recommendations that can be given to the policymakers, government institutions and stakeholders engaged in E-Governance and sustainable development in Pakistan are as follows:

The government should focus on reducing the digital divide by making special investments in the infrastructure and digital literacy initiatives. The number of Telecentres should be increased to 500 to every part of the country where the need is unmet, especially in rural locations and women. Internet connectivity should be classified as a communal good, and low-income citizens should have subsidies in order to access it cheaply. Digital literacy must be taught in schools at every level and training programs should be made community based to reach the adult population with low level of digital literacy.

An effective data protection law that is comprehensive should be passed with immediacy. Lack of a strong legal framework on data privacy will destroy the trust of the citizens in data-based services and put the citizens at the risk of misusing data and committing cyber-crimes. The Personal Data Protection Bill ought to be completed and enacted into a law and with a powerful enforcement and an autonomous data protection body. This legislation should be accompanied by public awareness to sensitize the citizens of their rights over their data and redress mechanisms.

The communication between the federal and federal governments should be enhanced to close the gaps in the execution. There should be a special E-Governance Coordination Council with representatives of all provinces and federal ministries, which will monitor the implementation, exchange best practices and solve inter-jurisdictional conflicts. Digital systems should have standardized protocols that are also created to achieve interoperability across provinces and departments to avoid the spread of siloed and non-compatible platforms.

Development of human capital should be a long-term agenda. The training programs that have been achieved in the Pakistan Reforms Report need to be increased and institutionalized and the professional development programs of government officials should be carried out all the time at all levels. The digital governance goals should be also incorporated into the incentives framework, with innovation and efficiency, as well as change-aversion discouraged. Technology companies should also be increased and strengthened in partnerships with the company to train and certify.

All E-Governance efforts have to be citizen-centric. Digital platforms will have to be established using end-user input and be tested within various communities and then continue to be bettered according to the feedback. The services should be designed in local languages, they should be accessible to individuals with disabilities and should be accessible to users with different levels of digital literacy. The redress mechanisms of grievances must be easy to understand, transparent and responsive to establish confidence among citizens on digital systems.

Digital governance projects should be made sustainable by proper maintenance budgets and institutional ownership. All digital undertakings need to have a sustainability strategy that has distinct resources to maintain it, upgrade it, and provide support to users throughout the project lifecycle. Absolving the implementing agencies off the post-completion responsibility practice should be abandoned.

E-Governance should be applied more and more in sectors. Telemedicine networks in healthcare should be expanded to all district headquarters hospitals with referral centers to the tertiary care facilities. Digital learning platforms must be incorporated in mainstream education system with off-line educational facilities in some regions with poor connectivity.

Digital extension services in agriculture should offer the best practices, market prices, and weather information to the farmers through the mobile platform. Digital payment systems in the context of financial services must be interoperable and available to populations without bank accounts by simplifying the Know Your Customer process.

Monitoring and evaluation systems ought to be enhanced in order to quantify not only the volume of reforms but the real developmental results. SDG indicators are supposed to be introduced in the design of E-Governance projects at the initial stage with baseline surveys and periodic progress evaluations. All significant digital projects must be tested on an independent third-party basis. Results of such assessments must be easily accessible to the society and employed to make policy changes.

Knowledge exchange and technical assistance should be used through international cooperation. Pakistan needs to be involved in international conferences on digital governance and learn through the experience of other countries such as Estonia, South Korea, and Singapore. The bilateral agreement with the technology leading countries must also contain the capacity building, technology transfer and research on the E-Governance innovations with the countries.

Digital governance should be politically committed to be maintained over the electoral periods. The Digital Nation Pakistan Bill has a very solid base though its application must be enforced regularly by successive governments. The civil society, the media, and the academic institutions are expected to be actively involved in the checks of progress, the promotion of the rights of the citizens, and holding governments answerable to their digital governance pledges. When such actions are undertaken, then automatically, the efficiency and productivity of E-Governance initiatives will be boosted and Pakistan will be on the road to Sustainable Development Goals achieving the promise of a digitally empowered, transparent, and prosperous nation.

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