Electronic governance in local governments of Peru: A systematic literature review

Nevado Chauca, Merly del Rocío[1]*
[1]Cesar Vallejo University, Peru; mnevado@ucvvirtual.edu.pe (N.C.).

Abstract: This study aimed to analyze scientific papers published between 2020 and 2025 in the Scopus and SciELO platforms focused on electronic governance in local governments of Peru. A total of 10 articles from these databases were selected and reviewed. It was found that the SciELO database presents a limited amount of research on the study variable. On the other hand, Scopus stands out for having a larger number of publications, which can be attributed to the broader international scope in which the variable is studied and other relevant factors that facilitate its development in these repositories. In conclusion, the promotion of electronic governance in local governments of Peru reveals the need for an inclusive and multifaceted approach, requiring policies that recognize and address the barriers municipalities face in adopting and implementing digital tools. This will not only contribute to improving the quality of local public services but also strengthen governance, fostering more equitable and sustainable development.

Keywords: Digital transformation, E-government, Electronic governance, Local governments.

1. Introduction

Electronic governance, understood as the application of information and communication technologies (ICT) to enhance efficiency, transparency, and citizen participation in public administration, has emerged as a fundamental component of modern governance worldwide. In the Peruvian context, the topic has become increasingly relevant due to the urgent need to modernize municipal management and to reduce bureaucratic inefficiencies that traditionally affect service provision. The digitalization of procedures in municipalities not only represents an opportunity to streamline interactions between citizens and the state but also contributes to strengthening institutional trust and democratic legitimacy through more open and participatory channels of communication.

In Latin America, Peru stands out as a country that has initiated important efforts in the field of e-governance, although with highly heterogeneous results depending on the region and the institutional capacity of local governments. Metropolitan municipalities, such as those in Lima or Arequipa, have advanced considerably in implementing digital platforms for services such as tax payments, licenses, and public records. However, municipalities in rural or less economically dynamic areas face persistent limitations, largely due to the lack of robust technological infrastructure and the absence of specialized personnel to manage these systems effectively.

The transition toward e-governance in local governments has been motivated not only by the search for efficiency but also by the demand from citizens for more accessible services and opportunities for participation in decision-making processes. The availability of digital platforms has facilitated interactions that were previously cumbersome and time-consuming, such as requests for municipal permits or access to social programs. At the same time, the possibility of promoting participatory platforms contributes to bringing local governments closer to citizens, generating a new dynamic in governance where transparency and accountability can be strengthened.

Nevertheless, several challenges continue to hinder the full realization of e-governance in Peru. The digital divide remains one of the most pressing issues, as the disparity between urban and rural populations limits the ability of citizens from peripheral areas to access online services. Similarly, resistance to change among public officials, accustomed to traditional bureaucratic practices, has slowed the pace of digital transformation. Added to this is the mistrust of some citizens toward digital systems, largely motivated by concerns about cybersecurity, data privacy, and the risk of corruption in digital platforms.

Given this panorama, it is essential to conduct a systematic literature review that examines the current state of e-governance in Peruvian local governments. Such an analysis makes it possible to identify the advances achieved, the obstacles still present, and the contextual variables that determine the success or failure of digital initiatives. Moreover, the review contributes to highlighting best practices and replicable experiences that can serve as a reference for other municipalities in similar conditions.

The methodology adopted for this review involves analyzing scientific studies, government reports, and technical documents produced by international organizations with expertise in digital governance. This diversity of sources ensures a comprehensive perspective on the phenomenon, balancing theoretical insights with empirical evidence derived from concrete cases of municipal digitalization. The integration of these perspectives provides a clearer understanding of the structural and cultural challenges that local governments in Peru face in adopting ICT-based solutions.

Through this review, the intention is not only to summarize progress but also to critically evaluate the determinants of success in digital transformation processes. Factors such as political will, financial investment, citizen digital literacy, and inter-institutional coordination emerge as decisive variables in determining the sustainability of e-governance initiatives. Without addressing these dimensions, even the most sophisticated technological platforms risk becoming underutilized tools, failing to achieve the expected impact on public administration.

The identification of best practices, particularly those that have successfully integrated technological innovation with inclusive public policies, represents a crucial contribution to the debate on e-governance in Peru. Such practices may include the development of mobile applications for service requests in rural areas, participatory budgeting systems through digital platforms, or the creation of transparency portals that facilitate real-time monitoring of municipal expenditures. By analyzing these initiatives, policymakers and local authorities can design more robust strategies adapted to their specific realities.

Aligned with this purpose, the research was guided by the question of what studies have been published on e-governance in local governments of Peru. The objective was not limited to cataloging articles but extended to synthesizing definitions, identifying conceptual dimensions, and extracting relevant conclusions that could inform the design of future policies. By focusing on publications indexed in Scopus and Scielo between 2020 and 2025, the review ensures a balance between rigor, updated knowledge, and contextual relevance to the Peruvian case.

Finally, the establishment of precise selection criteria for the analyzed studies guarantees the methodological solidity of this review. Only research directly related to e-governance in Peru, supported by empirical evidence, and framed within the scope of public management was considered. In contrast, works without methodological rigor, disconnected from the topic of study, or lacking a focus on human or documentary samples were excluded. This careful selection allows the conclusions to be based on robust and contextually relevant evidence, thus offering valuable insights for the ongoing debate on the digital transformation of local public administration in Peru.

2. Methodology

The review was conducted through academic databases such as Scielo and Scopus, which provide access to a wide range of relevant information. Scielo, specifically, is essential in Latin America, acting

as a crucial platform for accessing local resources, while Scopus stands out as a key tool for locating specialized literature in diverse fields.

In order to optimize the search, specific criteria were defined for the selection of articles, ensuring that only those meeting the established requirements and covering the determined period were included. To facilitate the process, key terms were used in the search engines, such as "governance," "e-governance," "digital transformation," and "digital administration." In addition, organized tables were created containing the keywords and their respective codes to effectively manage the information obtained.

Table 1.
Levels of Analysis and their codes.

Search Terms	Code
"gobernanza	1
"electronic governance"	2
"e-government"	3
"local governments"	4

3. Results

The systematic review conducted through SciELO and Scopus revealed a significant disparity in the availability of research across databases, reflecting not only differences in coverage but also in the geographical and thematic orientation of scientific production. While SciELO, with its focus on Latin America, offered more contextualized contributions for Peruvian and regional realities, Scopus provided a much larger number of documents, which indicates the global scope of research on governance and e-governance. The difference is particularly notable in terms such as "e-government," where Scopus presented nearly forty times more publications than SciELO, underscoring the central role of global repositories for comprehensive reviews, while also confirming the value of regional databases for capturing locally relevant insights.

The search results also highlight the thematic growth of electronic governance in recent years, with an increase in publications directly addressing its conceptualization, implementation, and evaluation. The relatively smaller number of articles in SciELO regarding "electronic governance" indicates that the subject is still consolidating within Latin American scholarship, whereas the much larger body of literature in Scopus reflects its positioning as a well-established field of research globally. This contrast reinforces the need for Latin American countries, including Peru, to expand academic production in order to build more robust, context-specific frameworks for e-governance, rather than relying predominantly on models developed in different sociopolitical and technological environments.

When analyzing the recurring themes across studies, one of the most prominent findings relates to barriers in digital literacy and attitudes toward technology. Several works emphasize that the effective adoption of e-governance is not determined solely by the existence of technological platforms but also by the capacity of citizens and public officials to interact with them in meaningful ways. Beliefs, perceptions of usefulness, and levels of digital trust condition the degree to which platforms are used effectively. Therefore, the role of training and education emerges as a critical component for the successful implementation of digital transformation strategies in local governments.

Organizational structures and leadership capacity are also recurrently identified as determining factors in the success of e-governance initiatives. Municipalities with clear leadership, strong managerial coordination, and commitment to innovation tend to achieve better outcomes in digital transformation. Conversely, local governments that lack institutional capacity, face high levels of staff turnover, or maintain rigid bureaucratic cultures often experience slower adoption and greater difficulties in sustaining digital initiatives. These findings demonstrate that, beyond technical solutions, governance reform must be accompanied by organizational strengthening and leadership development at the municipal level.

Finally, the systematic review underscores persistent infrastructural and technological gaps in Peru's municipalities. Limited access to secure digital tools, poor interoperability between existing platforms, and insufficient human resources trained in ICT management directly hinder the quality of services provided through e-governance. The unequal distribution of infrastructure between urban and rural areas further deepens disparities in access and usage, reinforcing the digital divide as a structural obstacle to equitable implementation. These findings highlight that, while technological solutions exist and are being implemented, their effectiveness depends on parallel investments in infrastructure, training, and institutional capacity-building to ensure that electronic governance becomes an inclusive and sustainable tool for local public administration.

Table 2.
Summary table of the variable "electronic governance."

Author(s)	Country	Definition of e-Governance	Dimensions Analyzed	Results / Conclusions
Lubis et al. [1]	Indonesia, China	Use of ICT to improve efficiency, transparency, and citizen participation in relation to SDGs.	52 articles (2018–2023) reviewed; intersection of e-governance and SDGs.	E-governance contributes to SDGs, but methodological limitations arise from reliance on a single database. Future studies should broaden the scope.
Tskhadadze [2]	Georgia	Digitalization of public administration is synonymous with electronic government.	E-services, e-participation, data protection, and administrative efficiency.	Georgia progressed in transparency after the EU agreement (2015), yet it still faces legal and operational challenges in administrative reform.
Krasnykov et al. [3]	Ukraine	Digitalization of state processes to optimize services and municipal property management.	Public services, property management, digital integration.	Implementation of digital technologies improves service quality and municipal asset management, with potential for integration into other areas.
Almarashdah et al. [4]	Jordan	Digital governance fostering e-trust and digital citizenship.	E-trust as mediator; digital citizenship; accessibility and participation.	Positive relationship between e-governance and digital citizen behavior mediated by e-trust. Strengthens trust in public services.
Chen and Su [5]	China	Smart cities as an e-governance framework for environmental sustainability.	Smart homes, smart transport, smart health, smart power; e-governance moderation.	Positive connection confirmed between smart cities and environmental development, with e-governance as a key moderator.
RobAj [6]	Kosovo	Public administration reform with decentralization, digitalization, and e-governance.	Simplification of procedures; e-services; decentralization.	Reform aligned with European integration. Advances in transparency are observed, though challenges in implementation and human resources persist.
Vashkevich et al. [7]	Russia & China	E-governance applied to digital sustainability and social marketing for the elderly.	Adoption by elderly citizens; ease of use; trust; supportive conditions.	Education moderates the link between attitudes and usage intention. Inclusive design of digital platforms for older adults is urgently needed.
Valsamidis et al. [8]	Greece	Use of e-government in municipalities as an indicator of digital service maturity.	Municipal services; citizen perception; usability.	Kavala demonstrates maturity in local e-governance. Citizens value digital services positively, though adoption challenges remain.
Kyeong et al. [9]	South Korea & USA	Electronic governance as a channel for selective government responsiveness.	Citizen petitions; institutional and political resources.	Government responds selectively depending on available resources. Provides practical lessons to improve fairness in digital responsiveness.

Verma et al. [10]	Nepal (India as an academic setting)	Use of IT to facilitate administrative support, communication, and transparency.	Conceptual implementation models; critical success factors.	Presents a conceptual framework for e-governance in Nepal, considering geographic, cultural, and technological challenges.

4. Discussion

In a recent analysis of electronic governance, scientific studies published between 2023 and 2024 in different countries and under diverse institutional contexts were reviewed. The findings reveal a wide range of approaches to the conceptualization and implementation of electronic governance, where both convergences and divergences are evident in the way governments and societies embrace digitalization. While some studies emphasize efficiency and transparency as central outcomes, others highlight citizen trust, participation, and even environmental sustainability as essential dimensions. This scenario confirms that electronic governance is not a uniform process but rather a complex and multidimensional construct shaped by sociopolitical contexts, technological readiness, and the governance priorities of each nation.

Table 2, which summarizes the selected documents, reflects the diversity of definitions and applications of electronic governance. Lubis et al. [1], in their comparative study between Indonesia and China, conceive electronic governance as a mechanism to advance the Sustainable Development Goals, emphasizing, through a review of 52 articles, its role in administrative efficiency and citizen participation. Similarly, Chen and Su [5] in China address electronic governance within the paradigm of smart cities, demonstrating the strong relationship between smart technological applications and environmental development, with electronic governance acting as a key moderating element. Both cases reinforce the idea that electronic governance goes beyond mere administrative improvement and serves as a catalyst for sustainability.

From an institutional perspective, studies in Georgia and Kosovo show a particular emphasis on the digitalization of public administration as a synonym for electronic governance. Tskhadadze [2] describes relevant progress following the signing of the agreement with the European Union, but points out that significant legal and operational challenges remain. Similarly, RobAj [6] in Kosovo reaches comparable conclusions, noting that although digital reforms are aligned with the European integration process, they face limitations in implementation and deficiencies in human resource training. These findings suggest that international agreements and regional commitments can act as drivers of digital transformation, provided that institutional capacities are strengthened to ensure viability.

Citizen-centered perspectives also contribute a fundamental dimension to the analysis of electronic governance. In Jordan, Almarashdah et al. [4], confirm that digital trust strengthens electronic citizenship, consolidating the importance of citizen confidence as a condition for sustained participation in digital environments. Complementarily, Vashkevich et al. [7] in Russia and China highlight that older adults experience greater difficulties in adopting electronic governance platforms, revealing the moderating role of digital education and the need for inclusive policies. In Greece, Valsamidis et al. [8] show that local initiatives, such as those of the municipality of Kavala, have reached an advanced stage of service delivery, although they still face barriers related to usability and effective adoption by citizens.

The case of South Korea adds a different angle to the analysis. Kyeong et al. [9] examine the national citizen petition platform, demonstrating that government responsiveness is selective and influenced by institutional and political resources. This finding provides practical lessons for balancing principles of equity in digital governance systems, avoiding biases in responding to citizen demands. Likewise, Verma et al. [10] in Nepal propose a conceptual model that identifies the critical factors for successful implementation of electronic governance, recognizing the cultural, geographical, and technological constraints specific to developing contexts.

The literature review underscores that in advanced economies, electronic governance is primarily associated with sustainability, smart cities, and technological innovation. In contrast, in emerging countries, the prevailing vision is oriented toward administrative modernization and the inclusion of

citizens in digital processes. This difference reflects that the development of electronic governance does not follow a homogeneous trajectory but depends on national priorities and the existing level of digital infrastructure.

Citizen trust emerges as a cross-cutting pillar in all the contexts analyzed. Without it, digital processes risk becoming mere technological instruments lacking social legitimacy. In this regard, the implementation of digital platforms must be accompanied by strategies that strengthen governmental transparency and guarantee the security of personal data, both of which are fundamental conditions for consolidating citizen participation in digital environments.

Another key aspect identified in the reviewed studies is digital inclusion, especially for vulnerable populations such as older adults, rural communities, or groups with low technological literacy. The findings in Russia, China, and Nepal highlight the urgency of designing public policies that reduce digital divides and ensure that electronic governance does not become a factor of exclusion but rather a means to democratize access to public services. This challenge is particularly relevant in developing countries, where technological infrastructure remains insufficient.

The environmental dimension also gains relevance in the debate on electronic governance. Studies conducted in China and Indonesia reveal that digitalization not only improves administrative efficiency but can also contribute to the Sustainable Development Goals by optimizing resources, reducing the ecological footprint, and promoting more responsible management practices. In this sense, electronic governance can be considered a strategic vehicle for advancing toward a more sustainable and resilient development model.

In summary, electronic governance emerges as a multifaceted phenomenon, conditioned by institutional, technological, social, and cultural factors. Its success depends on the capacity of states to integrate digital tools with policies of inclusion, trust, and sustainability, adapted to their contextual realities. Comparative evidence demonstrates that implementing digital platforms is not enough: it is essential to articulate a governance framework that promotes equity, strengthens citizen participation, and generates trust in institutional processes. Only in this way will electronic governance be able to fulfill its role as a driver of sustainable and equitable development in an increasingly digitalized world.

5. Conclusions

Regarding definitions, it is concluded that e-governance should be understood as a multifactorial and dynamic process shaped by technological, institutional, and social determinants that collectively aim to promote efficiency, transparency, and citizen participation within public administration. Its scope is strongly conditioned by cultural, political, and legal contexts, which influence how societies adopt and integrate digital solutions into their governance systems. For this reason, a comprehensive approach is required, one that not only incorporates digital innovation but also emphasizes the importance of education and the reduction of digital literacy gaps, fostering citizen inclusion and building trust in governmental platforms. Likewise, the sustainability of e-governance depends on the establishment of robust public policies that prioritize digital transformation strategies, protect data privacy and security, and guarantee access to reliable technological infrastructure across regions. Only through the alignment of these dimensions can e-governance evolve into a consistent and equitable model that strengthens institutional legitimacy, empowers citizens in decision-making processes, and contributes to the long-term development of societies in an increasingly digital era.

The most common dimensions identified in the studies highlight e-services, e-participation, citizen trust, inclusivity, and the modernization of administrative processes as central components that define the scope and impact of e-governance. E-services reflect the capacity of governments to provide efficient, accessible, and user-friendly digital platforms, while e-participation emphasizes mechanisms that allow citizens to engage in decision-making processes, strengthening transparency and accountability. At the same time, citizen trust emerges as a critical condition for adoption, as digital platforms cannot function effectively without confidence in their security and reliability. Inclusivity is another essential factor, as equitable access to digital governance tools is necessary to prevent social

exclusion and ensure that vulnerable groups are not left behind. Finally, the modernization of administrative processes represents both an outcome and a driver of digital transformation, creating more agile and responsive public institutions. However, these dimensions are often constrained by structural limitations such as inadequate infrastructure, insufficient levels of digital literacy among both citizens and public officials, and legal or regulatory challenges that delay or complicate implementation.

Barriers to the development and utilization of e-governance systems in low- and middle-income countries are deeply interconnected, reflecting the complex interplay between technological, institutional, and social factors that shape the digital transformation of public administration. Limited infrastructure, uneven access to reliable internet services, and scarce technological resources restrict the ability of governments to implement robust platforms that reach all citizens. These limitations are further compounded by insufficient levels of digital education and training, which prevent both public officials and communities from fully engaging with new systems. To address these challenges, it is essential to promote comprehensive digital education programs, strengthen institutional capacity through investment in resources and skilled personnel, and design strategies that are culturally sensitive to the realities of marginalized or underserved populations. Such efforts can help ensure inclusivity and reduce the risks of reinforcing existing inequalities in access to public services. Moreover, persistent disparities in technological adoption and unequal distribution of resources across regions exacerbate the challenges of equitable governance, making it imperative for public policies to focus not only on expanding technological infrastructure but also on guaranteeing accessibility, affordability, and trust in digital solutions for all sectors of society.

Regarding the main objective, it was found that the Scielo database presents a limited amount of research on e-governance, while Scopus demonstrates a greater volume of publications, reflecting its stronger academic presence and broader international reach. This indicates the importance of expanding research visibility in diverse repositories to strengthen the theoretical and practical contributions of e-governance to sustainable development.

Transparency:
The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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