UNIVERSIDAD NACIONAL DE SAN MARTIN

RCSI
https://revistas.unsm.edu.pe/index.php/rcsi
e-ISSN: 2709-992X

Review article
Artículo de revisión
Jan-Jun, 2026

Integration of digital technologies in tax systems: a review of strategies to improve tax revenue collection

Integración de tecnologías digitales en sistemas tributarios: revisión de estrategias para la mejora de la recaudación de impuesto

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Received: 04 Jan. 2025 | **Accepted:** 16 Sep. 2025 | **Published:** 20 Jan. 2026

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How to cite this article: Cárdenas-López, J. J. (2026). Integration of digital technologies in tax systems: a review of strategies to improve tax revenue collection. *Revista Científica de Sistemas e Informática*, *6*(1), e691. https://doi.org/10.51252/rcsi.v6i1.691

ABSTRACT

This study presents an exploratory systematic review on the application of digital technologies in municipal tax systems, with a focus on strategies aimed at improving property tax collection and other local revenues. Based on the analysis of 28 peer-reviewed articles indexed in Scopus between 2020 and 2025, significant progress was identified in the automation of tax functions, the implementation of digital platforms for fiscal management, and the use of analytical tools to support decision-making. The evidence suggests that technologies such as Geographic Information Systems (GIS), smart tax portals, blockchain, and interoperable systems have enhanced collection efficiency and reduced tax evasion. In addition, intangible benefits such as improved institutional transparency and citizen perception of tax administration were also noted. However, the review highlights persistent technical, regulatory, and organizational challenges that condition the success of digital transformation. It is concluded that the integration of digital technologies into local fiscal systems requires a strategic and adaptive approach, grounded in institutional capacity, clear legal frameworks, and active citizen engagement.

Keywords: tax digitalization; property tax; tax collection; municipal fiscal systems; information technologies; digital transformation

RESUMEN

Este estudio presenta una revisión sistemática exploratoria sobre la aplicación de tecnologías digitales en los sistemas tributarios municipales, con énfasis en estrategias orientadas a mejorar la recaudación del impuesto predial y otros tributos locales. A partir del análisis de 28 artículos científicos indexados en Scopus entre 2020 y 2025, se identificaron avances significativos en la automatización de funciones tributarias, la implementación de plataformas digitales de gestión fiscal, y el uso de herramientas analíticas para la toma de decisiones. La evidencia recopilada sugiere que tecnologías como los sistemas de información geográfica (SIG), los portales tributarios inteligentes, el blockchain y los sistemas interoperables han incrementado la eficiencia recaudatoria y reducido la evasión fiscal. Además, se destacan beneficios intangibles como la mejora en la transparencia institucional y la percepción ciudadana sobre la administración tributaria. No obstante, la revisión también pone en relieve desafíos persistentes de índole técnica, normativa y organizacional que condicionan el éxito de la transformación digital. Se concluye que la integración tecnológica en el ámbito fiscal municipal requiere un enfoque estratégico y adaptativo, sustentado en capacidades institucionales, marcos legales claros y participación ciudadana activa.

Palabras clave: digitalización tributaria; impuesto predial; recaudación de impuestos; sistemas fiscales municipales; tecnologías de la información; transformación digital

1. INTRODUCTION

Low revenue collection efficiency in local governments represents one of the main limitations for fiscal sustainability and the provision of public services in Latin America, particularly regarding property tax (Livert et al., 2022). This situation is driven by multiple structural factors, such as the informality of the real estate market, outdated urban cadasters, and weak enforcement of the tax base. In this context, digital technologies have begun to emerge as key tools to modernize municipal tax systems and reverse this trend. The use of technological solutions enables the optimization of tax cycle traceability, increases voluntary compliance, and facilitates a more efficient relationship between the administration and taxpayers (Hesami et al., 2024).

Several studies have shown that the incorporation of information and communication technologies (ICT) into subnational tax systems has generated positive impacts on the improvement of registration, collection, and enforcement of territorial taxes (Anomah et al., 2024). Among the most common solutions are Geographic Information Systems (GIS), which allow for the dynamic updating of cadasters and the identification of unregistered properties (Križanović et al., 2021), as well as digital platforms for self-assessment and online payment, which streamline tax compliance (Bassey et al., 2022). These technologies have been successfully adopted in pilot experiences in countries such as Colombia, Brazil, and Peru, where sustained increases in property tax collection levels have been observed (Bellon et al., 2022; Cabrera Cabrera, 2017; Vasconcelos Nascimento et al., 2023).

Moreover, artificial intelligence (AI) has begun to be explored as an innovative component in tax management, allowing for the automation of cadastral data analysis, the prediction of delinquency, and the segmentation of taxpayers to improve the effectiveness of collection campaigns (Serrano Antón, 2021). Machine learning algorithms enable the detection of evasion patterns and the optimization of human resource allocation for tax enforcement (Hernandez Aros et al., 2024), while image recognition systems applied to cadasters allow for the validation of constructions and the detection of inconsistencies with declared information (Ivanova et al., 2023). These solutions have shown promising results, particularly in urban environments with high property density and low tax control.

However, the integration of these technologies in local governments faces significant technical and organizational challenges. The lack of interoperability among municipal information systems, limited training of tax personnel, and weak technological infrastructure hinder the sustained adoption of digital tools (Lafioune et al., 2024). Furthermore, many municipalities operate under outdated regulatory frameworks, which restrict the use of open data and complicate real-time cadastral updates. These structural challenges require strategic and multisectoral planning to ensure an effective digital transformation of the local tax system.

At the ethical and regulatory level, tensions also arise related to the protection of personal data, the transparency of algorithms, and fairness in automated tax enforcement. Current regulatory frameworks do not yet fully address the use of technologies such as artificial intelligence in the fiscal domain, creating gaps regarding institutional responsibility for algorithmic decisions (Kokina et al., 2025). Therefore, the implementation of these technologies must be accompanied by robust ethical guidelines, digital audit protocols, and participatory processes that legitimize their use before the public (David et al., 2024).

The specialized literature on local fiscal innovation has grown significantly over the past five years; however, knowledge gaps remain regarding critical success factors, the quantifiable impacts of these technologies, and replicable best practices in contexts with low institutional capacity (Adetumi Adewumi et al., 2024). Few studies systematize the experiences of municipalities that have effectively integrated ICT, which limits the potential for inter-municipal learning and the development of transferable models for digital tax management. Furthermore, the heterogeneity in evaluation metrics and methodological approaches makes it difficult to compare results across different jurisdictions.

In this context, the present study aims to conduct a systematic review of the scientific literature indexed in Scopus between 2020 and 2025, focusing on the application of digital technologies to improve property tax collection in municipal tax systems. The study seeks to identify the main technological strategies, their reported effects, the challenges encountered, and the prospects for sustainable implementation in subnational contexts. In doing so, it aims to provide an analytical framework that contributes to the design of evidence-based public policies, aimed at strengthening municipal fiscal autonomy through integrated, efficient, and ethically responsible digital tools.

2. MATERIALS AND METHODS

Research Approach

This study adopted an exploratory systematic review design, a methodology widely used to examine complex and emerging phenomena within socio-technical contexts (Carrera-Rivera et al., 2022). This methodological choice allowed for a rigorous organization of the available scientific evidence on the integration of digital technologies in municipal tax systems, addressing both the observed benefits and the operational, regulatory, and technical challenges. According to Munn et al. (2018), an exploratory approach is appropriate when it is necessary to identify the scope, depth, and evolution of a thematic area with limited conceptual consolidation or high contextual variability, as is the case with digital transformation in local tax administration.

Methodological Design and Process Phases

The review was designed following the recommendations proposed by Okoli & Schabram (2010) and complemented by Boell & Cecez-Kecmanovic (2015) who propose an iterative and transparent structure for reviews in interdisciplinary settings. The process was organized into three main phases: (1) planning, (2) execution, and (3) analysis and interpretation.

In the planning phase, the research questions were defined, inclusion and exclusion criteria were established, and a protocol was designed to ensure the traceability of the process. Subsequently, in the execution phase, an advanced search strategy was applied in the Scopus database, and the documents were selected and critically evaluated. Finally, the data were systematized through a structured analysis matrix to facilitate their interpretation in relation to the study objectives.

Bibliographic Search Strategy

The literature search was conducted exclusively in Scopus due to its multidisciplinary coverage and its recognition as a reliable source of peer-reviewed scientific literature. The search string was constructed using Boolean operators and key terms derived from the study's focus, including synonyms and concepts related to digitalization, taxation, and public management. The final search string used was: TITLE-ABS-KEY (("digital technology" OR "ICT" OR "e-government" OR "digital tools" OR "digital transformation") AND ("tax" OR "taxation" OR "fiscal" OR "public finance" OR "taxpayer" OR "municipal revenue") AND ("system" OR "platform" OR "services" OR "management" OR "administration")). This strategy yielded a total of 1276 articles in the initial search. Subsequently, the results were refined using filters and thematic criteria.

Inclusion and Exclusion Criteria

To ensure the relevance and methodological quality of the selected documents, the following criteria were applied:

Inclusion criteria: scientific articles published between 2020 and 2025; written in English or Spanish; explicitly focused on the application of digital technologies in fiscal, tax, or public revenue systems; available in full text and peer-reviewed.

Exclusion criteria: duplicate studies, documents not accessible in their final version, works focused exclusively on macroeconomic models without a technological component, and articles whose unit of analysis did not include municipal or regional administrations.

Study Selection and Evaluation

The selection process was carried out in three stages: (1) review of titles and abstracts to eliminate irrelevant documents; (2) critical reading of the full texts of the selected documents; and (3) application of a methodological quality checklist adapted from the proposal by Petticrew & Roberts (2006), based on criteria of validity, clarity, relevance, and originality. As a result, 28 articles were selected that met all established requirements and addressed, using various methodologies, the integration of digital technologies in local or national tax systems, with an emphasis on collection processes, tax compliance, transparency, and administrative efficiency.

Data Organization and Analysis

The articles were coded and entered into a database constructed in Microsoft Excel, where relevant information was systematized, including: identifier code, authors, year of publication, country of study, type of technology applied, purpose of use, observed results, and identified barriers. This matrix allowed for the development of a comparative thematic analysis, with an emphasis on the most recurrent strategies, documented impacts, and contextual differences between countries or regions.

Research Questions

To guide the analysis and facilitate the alignment of the findings with the conceptual framework, the following research questions were formulated: (1) Which tax functions have been modernized through the implementation of digital technologies in local governments?; (2) Which technological tools have proven most effective in increasing property tax collection or other municipal taxes?; (3) What factors determine the success or failure of digital adoption in municipal tax systems?; (4) What tangible or intangible benefits have been reported as a result of tax digitalization?; (5) What ethical, technical, or regulatory challenges limit the effective implementation of digital strategies in municipal fiscal contexts?

3. RESULTS AND DISCUSSION

The review of the 30 selected articles allowed for the identification of a broad range of strategies, platforms, and digital solutions aimed at strengthening tax collection in municipal tax systems. The evidence shows that the integration of information and communication technologies (ICT) has contributed significantly to improving administrative efficiency, traceability of fiscal processes, institutional transparency, and tax compliance. These technologies range from automated declaration and payment systems to intelligent electronic auditing platforms, enabling not only more agile management but also a more direct relationship between the tax administration and taxpayers.

The systematic analysis allowed the findings to be grouped into five major thematic lines, reflecting the main areas of application of digital tools: modernization of fiscal platforms, impact on municipal revenue collection, taxpayer perception, risks and gaps in implementation, and success factors in digital transformation processes. While significant progress in the adoption of these technologies is recognized, the study also reveals persistent challenges such as limited system interoperability, technical barriers in local governments, and the need for regulatory frameworks that ensure sustainability, security, and fairness in digital processes. The following sections detail the results obtained according to the formulated research questions, providing a comprehensive view of current trends and emerging opportunities in municipal tax digitalization.

Modernization of Tax Functions through Digital Technologies

The analyzed studies reveal a remarkable process of modernization of various tax functions in local governments, driven by the incorporation of digital technologies, particularly within the framework of digital transformation and administrative automation processes. One of the most representative functions is the management and processing of tax declarations, which has been digitalized through e-filing platforms and automated verification systems, allowing for a significant reduction in errors, decreased operational costs, and improved taxpayer experience (A2, A4, A12, A21, A27). These systems have evolved from basic web solutions to integrated environments with business intelligence and real-time monitoring capabilities.

Furthermore, tax collection and enforcement have experienced a qualitative leap with the use of technologies such as digital payment portals, interoperable systems with financial institutions, and electronic gateways that facilitate timely and voluntary compliance with tax obligations (A1, A7, A8, A14, A17, A25). In some contexts, as documented in articles A8 and A25, the use of electronic wallets and mobile applications has promoted fiscal inclusion for traditionally marginalized sectors, such as small taxpayers and informal workers.

Another key function that has been transformed is tax auditing and enforcement, which has been strengthened through data mining tools, large-scale information cross-checks, and predictive analytics engines that allow for faster detection of inconsistencies, fraud, or atypical behavior (A3, A5, A11, A13, A18, A20, A23). These solutions not only improve the efficiency of audit teams but also increase taxpayers' perception of fiscal risk, encouraging a stronger culture of compliance.

Additionally, there is a growing implementation of technologies for citizen services and tax compliance management, such as interactive web interfaces, virtual assistants, inquiry bots, and personalized obligation tracking systems (A6, A9, A10, A15, A19, A22, A26). These tools, besides facilitating tax guidance, promote transparency and strengthen the relationship between taxpayers and the local administration. Table 1 summarizes the main modernized functions and the studies that support them.

Table 1. Tax Functions Modernized through Digital Technologies

Tax Function	Code
Declaration and submission of taxes	A2, A4, A12, A21, A27
Collection and electronic payment	A1, A7, A8, A14, A17, A25
Tax auditing and enforcement with data analytics	A3, A5, A11, A13, A18, A20, A23
Taxpayer assistance and guidance	A6, A9, A10, A15, A19, A22, A26
Compliance management and reminders	A7, A10, A14, A19, A21, A24
Interoperability with other public entities	A4, A11, A16, A20, A28
Automation of internal administrative processes	A3, A5, A12, A16, A17, A23

Technological Tools Effective in Increasing Municipal Tax Collection

The analysis of the articles shows a diversity of technological tools used by local governments to strengthen property tax collection and other municipal taxes. These technologies, framed within the digital transformation of the public sector, have been essential in overcoming traditional barriers such as low financial inclusion, limited taxpayer traceability, and structural informality affecting many municipalities. The most effective tools identified in the studies are mainly grouped into seven functional categories (Table 2).

One of the most notable examples is integrated tax administration platforms, which allow the centralization of registry management, issuance of tax bills, debt tracking, and automated report generation. These solutions have been particularly effective in contexts where improving institutional efficiency and reducing evasion margins were required (A1, A2, A3, A5, A7, A11). In parallel, electronic payment systems, including mobile applications and digital wallets, have facilitated direct collection without the need for in-person interaction, reducing operational costs and increasing tax coverage (A4, A8, A14, A17, A25).

Another widely documented type of tool is georeferencing and digital cadastre modules, which allow real-time updating and cross-referencing of property information with satellite imagery and geospatial databases. This approach has been essential for identifying unregistered or misclassified properties, contributing to a fairer and more comprehensive tax collection (A6, A9, A16, A23, A28). Likewise, automatic reminder systems via digital channels, such as SMS, email, or push notifications, have shown a positive impact on reducing delinquency, especially among small taxpayers (A10, A14, A21, A24, A26).

Tools based on artificial intelligence and predictive analytics were also identified, which allow for segmenting taxpayer payment behavior and designing targeted incentive or enforcement campaigns. Although their use is still emerging in subnational governments, the reviewed studies indicate that this technological category has high potential to improve the targeting of revenue collection strategies (A12, A13, A15, A18, A20). Other relevant solutions include tax virtual assistants for automated queries (chatbots) and citizen portals with access to tax history, download of receipts, and self-service options (A19, A22, A27). Table 2 summarizes these tools and the articles in which they were documented.

Table 2. Effective technological tools to increase municipal revenue

Technological tool	Code
Integrated tax administration platforms	A1, A2, A3, A5, A7, A11
Electronic payment systems (web, mobile, QR, digital wallets)	A4, A8, A14, A17, A25
Digital cadastre and georeferencing	A6, A9, A16, A23, A28
Automatic reminders via digital channels	A10, A14, A21, A24, A26
Data analytics and artificial intelligence	A12, A13, A15, A18, A20
Virtual assistants and automated service systems	A19, A22, A27
Citizen portals with self-service tax management options	A4, A19, A22, A27

Factors determining the success or failure of digital adoption in municipal tax systems

A series of critical factors influencing the success or failure of implementing digital technologies in municipal tax systems were identified. These factors can be grouped into four key dimensions: organizational, technological, contextual, and end-user, and their interaction largely determines the sustainability of digital tax transformation initiatives.

At the organizational level, institutional leadership and political will are key determinants. The existence of a clear administrative modernization strategy, accompanied by allocated budgetary resources, facilitates the adoption of digital solutions and the reengineering of tax processes (A1, A7, A13, A21, A24). Conversely, in contexts where there is resistance to change from authorities or technical staff, digital platforms tend to be underutilized or fail in their operational implementation (A6, A17, A23).

From a technological perspective, interoperability between systems, platform stability, and the availability of digital infrastructure are decisive factors. Lack of connectivity, outdated software, or failures in the integration of cadastral and financial systems have been reported as critical barriers in various studies (A3, A5, A10, A14, A16). In addition, data quality—particularly the reliability of registries and tax records—directly affects the performance of implemented technologies (A9, A20, A27).

Regarding contextual factors, the level of institutional development of the municipality, its population size, and its degree of fiscal autonomy directly impacts technological adoption. Local governments with greater technical capacity, better-trained staff, and budgetary autonomy demonstrate better performance in the implementation of digital innovations (A2, A11, A18, A25). Conversely, in municipalities with institutional weaknesses, technological platforms often rely on temporary programs, resulting in discontinuity and inefficiency.

Factors related to the end user, that is, the taxpayers, also influence the success of digital solutions. Studies such as those by Zhang and She (A9) or Oreku (A25) highlight the importance of digital literacy, perceived usefulness, ease of use, and trust in the system for achieving sustained adoption. Without active taxpayer

participation and an adequate communication strategy, even technically efficient systems tend to show low levels of usage and compliance. These factors, organized by dimension, are detailed in Table 3.

Table 3. Factors influencing the success or failure of digital tax adoption

Dimension	Critical factors	Code
Organizational	Leadership, organizational culture, political will, budget	A1, A6, A7, A13, A17, A21, A23, A24
Technological	Interoperability, data quality, infrastructure, security	A3, A5, A9, A10, A14, A16, A20, A27
Contextual	Institutional capacity, fiscal autonomy, municipality size	A2, A11, A18, A25
End user	Digital literacy, trust, ease of use, perception	A4, A9, A19, A22, A25, A26

Tangible and intangible benefits reported as a result of tax digitalization

The results of the systematic review show that tax digitalization in local governments has generated a variety of benefits, both tangible—measurable and quantifiable—and intangible, related to perception, trust, and institutional improvements. These benefits have been widely documented in the reviewed scientific literature and are grouped into four dimensions: fiscal, operational, social, and organizational.

In the fiscal dimension, one of the most frequently reported tangible benefits is the increase in tax revenue, especially from property tax and similar local levies. Several studies highlight that the use of tax management systems, online self-assessment platforms, and electronic auditing mechanisms has significantly reduced tax evasion and expanded the tax base (A1, A5, A6, A9, A14, A20). This increase is not only due to improved control but also to the automation of processes that have made collection more efficient.

From an operational perspective, improvements have been reported in the efficiency of administrative processes, including reduced service times, the elimination of unnecessary in-person procedures, and a decrease in the margin of human error (A2, A4, A10, A13, A15, A22). A positive effect has also been observed in interoperability between tax offices and municipal cadastre systems, facilitating data consolidation and informed decision-making.

At the social level, the most prominent intangible benefits include strengthened citizen trust in local government, a greater perception of transparency, and increased taxpayer satisfaction with the services received (A3, A7, A8, A11, A23, A26). These improvements are directly related to the ability to conduct inquiries, make payments, and track procedures remotely and securely, which increases voluntary tax compliance.

In organizational terms, several articles highlight the development of internal capacities, the professionalization of technical staff, and the promotion of a culture of technological innovation within public administration (A12, A16, A18, A21, A24, A25). These changes, although less visible in the short term, create favorable conditions for the sustainability of digital reforms and their future adaptation to new technologies. The identified benefits are summarized in Table 4.

Table 4. Benefits of tax digitalization in local governments

Dimension	Critical factors	Code
Fiscal	Increased revenue collection, reduced tax evasion, expansion of the tax base	A1, A5, A6, A9, A14, A20
Operational	Streamlined processes, interoperability, reduced errors and processing times	A2, A4, A10, A13, A15, A22
Social	Improved trust, perception of transparency, higher taxpayer satisfaction	A3, A7, A8, A11, A23, A26
Organizational	Capacity development, professionalization, culture of innovation	A12, A16, A18, A21, A24, A25

Ethical, technical, and regulatory challenges in the implementation of digital strategies in municipal tax systems

The digitalization of municipal tax systems poses a series of challenges that hinder effective implementation, particularly in contexts where institutional, regulatory, and technological capacities are still limited. Based on the analyzed articles, three major categories of barriers were identified—ethical, technical, and regulatory—which interact with one another and condition the success of digital tax transformation processes.

At the technical level, the main challenges include the lack of interoperability between municipal platforms and external systems, obsolete or insufficient technological infrastructure, as well as limited training of the personnel responsible for operating and maintaining digital systems (A2, A5, A9, A14, A16, A21). Dependence on fragmented or poorly integrated solutions creates bottlenecks in tax processes, prevents the efficient use of data, and limits the scope of projected improvements in efficiency or coverage. In addition, the lack of continuous maintenance and specialized technical support undermines the sustainability of the implemented solutions.

From a regulatory perspective, gaps are observed in local legislation that do not explicitly address the use of digital tools in tax procedures, generating legal uncertainty and resistance to innovation (A3, A6, A10, A13, A17, A22). Some regulations are not aligned with digital government frameworks or impose restrictions on the processing of personal data, which hinders proper management of tax information. This regulatory misalignment is exacerbated in decentralized contexts where local governments lack the autonomy to update their fiscal regulations.

In the ethical domain, studies warn about insufficient protection of taxpayer data, the lack of clear policies on algorithmic transparency, and the risk of digital exclusion of vulnerable groups (A1, A4, A7, A15, A20, A24). Implementing automated platforms without considering principles of equity, fiscal justice, and inclusive access may exacerbate existing gaps between digitally connected citizens and those with limited digital literacy or connectivity. Moreover, the use of algorithms without external auditing or accountability mechanisms raises concerns about the legitimacy of automated decision-making. These challenges should not be understood as insurmountable barriers, but rather as structural conditions that require comprehensive digital governance strategies, sustained investment in institutional capacities, and proactive regulatory adaptation. Table 5 summarizes the main challenges identified.

Table 5. Challenges in the implementation of digital technologies in municipal tax systems

Dimension	Critical factors	Code
Technical	Non-interoperable systems, low-quality or insufficient infrastructure, limited technical training	A2, A5, A9, A14, A16, A21
Regulatory	Legal gaps, regulatory incompatibilities, lack of regulation for digital data	A3, A6, A10, A13, A17, A22
Ethical	Risks of digital exclusion, lack of algorithmic transparency, data protection issues	A1, A4, A7, A15, A20, A24

General synthesis of results on the implementation of digital technologies in tax collection

The results obtained from the systematic analysis demonstrate a growing integration of digital technologies in the tax systems of local governments, with an emphasis on improving the collection processes of property tax and other fiscal obligations. This transformation has been characterized by the progressive incorporation of digital platforms, automated tax information systems, data analytics tools, and e-government solutions, shaping a more agile, transparent, and results-oriented tax ecosystem.

Among the modernized tax functions, notable examples include the registration and updating of the fiscal cadastre, the electronic issuance of tax bills, the automation of auditing processes, and the digitalization of

payment and notification channels. These innovations have made it possible to reduce tax evasion, expand the taxpayer base, and facilitate voluntary compliance by citizens, as evidenced by studies such as those by Djinarto et al. (2024) and Rossikhina et al. (2025).

The technological tools that have proven most effective in this process are those based on integrated tax management systems, interoperable platforms connected to civil registries and cadastral databases, and data analytics solutions for taxpayer segmentation and inconsistency detection (Petcu et al., 2024; Rufasto et al., 2024). Likewise, the use of mobile applications, self-service web portals, and georeferencing systems has been reported as a key element in increasing the accessibility and efficiency of the tax collection process.

Regarding the success factors in the adoption of these technologies, studies identify the presence of committed political leadership, supportive regulatory frameworks, institutional interoperability, and the availability of financing as essential conditions. Conversely, the lack of technological infrastructure, resistance to change among administrative staff, and limited digital literacy in local contexts emerge as the main barriers (Jedlička, 2021; Ben Youssef & Dahmani, 2024).

The observed tangible benefits include increased levels of effective tax collection, reduced operational costs, and strengthened fiscal transparency. In parallel, intangible benefits have been reported, such as improved citizen trust, a greater perception of equity in tax management, and strengthened institutional capacity of municipalities (De Aquino et al., 2022; Gkoni et al., 2024).

Nevertheless, challenges persist. Studies highlight ethical limitations related to the use and protection of personal data, regulatory tensions regarding system interoperability, and technical difficulties associated with the sustainability and scalability of implemented solutions. These constraints require a comprehensive approach to the design of digital public policies, combining technological innovation, data governance, and the development of local capacities (Hrytsenko et al., 2022; Zhang & She, 2024).

Overall, the findings suggest that tax digitalization represents a strategic pathway to strengthening municipal tax systems; however, its effectiveness depends on contextualized, collaborative, and ethically responsible implementation. Local governments that have achieved substantial progress in this area have articulated interinstitutional efforts, prioritized digital inclusion, and promoted an organizational culture oriented toward public service and innovation.

CONCLUSIONS

The results of this systematic review allow us to conclude that the digitalization of municipal tax systems constitutes an effective strategy to strengthen tax functions, improve administrative efficiency, and expand the revenue-generating capacity of local governments. The implementation of integrated fiscal management platforms, interinstitutional interoperability tools, and taxpayer-oriented digital solutions has generated positive impacts on reducing tax evasion, expanding the tax base, and automating critical processes such as the cadastre, tax issuance, and the monitoring of tax compliance.

It has also been shown that the benefits of tax digitalization are not limited solely to the financial domain. Several studies highlight significant intangible effects, such as improved citizen perceptions of institutional transparency, the promotion of a culture of tax compliance, and the strengthening of local fiscal governance. However, these achievements largely depend on enabling conditions, including an appropriate regulatory framework, the training of municipal staff, the availability of technological infrastructure, and the level of digital literacy among users.

This review also highlights that the process of digital transformation in municipal fiscal contexts faces structural, technical, and ethical barriers that limit its effectiveness. These include the absence of interoperability standards, institutional resistance to change, connectivity gaps in rural areas, and the lack of regulatory guidelines for the handling of fiscal data. Overcoming these limitations requires a strategic,

multisectoral, and sustained approach over time that integrates technical capacities, political leadership, and informed citizen participation.

FINANCING

The author did not receive sponsorship to carry out this study-article.

CONFLICT OF INTEREST

There is no conflict of interest related to the subject matter of this study.

AUTHORSHIP CONTRIBUTION

Conceptualization, data Curation, formal analysis, research, visualization, writing - original draft, Writing - revision and editing: Cárdenas-López, J. J.

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APPENDIX

Appendix A.1. Coding of selected items

Code	Authors	Code	Authors
A1	(Rossikhina et al., 2025)	A15	(Joukhadar et al., 2023)
A2	(Nastiti et al., 2025)	A16	(Guo et al., 2022)
A3	(Wang, 2025)	A17	(Hrytsenko et al., 2022)
A4	(Chowdhury et al., 2025)	A18	(De Aquino et al., 2022)
A5	(Djinarto et al., 2024)	A19	(Harkushenko, 2022)
A6	(Abu-Silake et al., 2024)	A20	(Dmytryk et al., 2022)
A7	(Rufasto et al., 2024)	A21	(Zichová, 2022)
A8	(Restrepo-Carmona et al., 2024)	A22	(Remlein et al., 2022)
A9	(Zhang & She, 2024)	A23	(Belda, 2021)
A10	(Petcu et al., 2024)	A24	(Jedlička, 2021)
A11	(Gkoni et al., 2024)	A25	(Oreku, 2021)
A12	(Ben Youssef & Dahmani, 2024)	A26	(Sobotovičová & Blechová, 2021)
A13	(Hrebenozhko & Melnyk, 2024)	A27	(Noamna & Kiattisin, 2020)
A14	(Kirova et al., 2024)	A28	(Sijabat, 2020)