Editor Científico: Francisco Antonio Serralvo
RAD Management in Dialog Review
Revista Administração em Diálogo
ISSN 2178-0080
PUC-SP
27 anos
Programa de Pós-Graduação em Administração

Avaliação: *Double Blind Review* **RAD Vol. 27, Special Issue - December 2025**

Innovation in Public Administration: Interdisciplinary Methods of Tax Control and Optimization of Budget Resources

Inovações na administração pública: métodos interdisciplinares de controle tributário e otimização dos recursos orçamentários

Ruslana Andrushko[1]
Svitlana Stoianova-Koval[2]
Halyna Vasylevska[3]
Dymytrii Grytsyshen[4]
Viktoriia Gorbanova[5]

Resumo

O estudo aborda a busca por inovações gerenciais eficazes no setor público em meio à transformação digital e às crescentes exigências de transparência e responsabilidade no uso do orçamento. Controlar o pagamento de impostos e a eficiência dos gastos é essencial para a estabilidade financeira e a confiança institucional. O objetivo é explorar abordagens interdisciplinares para o controle da receita tributária e a gestão orçamentária. Os métodos incluem análise comparativa e de conteúdo, sistematização de práticas de digitalização e interpretação de estatísticas oficiais. Os resultados mostram que a faturação eletrônica reduz a economia paralela, enquanto os incentivos informativos promovem o pagamento voluntário de impostos. Os dados abertos e as reformas na área de aquisições públicas aumentam a transparência e a competitividade. A inteligência artificial apoia a deteção de fraudes e a previsão de riscos, mas requer explicabilidade algorítmica. As auditorias digitais melhoram a eficiência, aceleram a implementação de programas e reforçam a redução de custos.

Palavras-chave: controle no setor público, trabalho de controle e auditoria, sistema de controle interno, medidas de controle

Abstract

The study explores practical managerial innovations in the public sector amid digital transformation and increased demands for transparency and accountability in budget management. Controlling tax payments and spending efficiency is crucial for maintaining financial stability and building institutional trust. The goal is to examine interdisciplinary approaches to overseeing tax revenue and managing budgets. Methods include comparative and content analysis, organizing digitalization practices, and interpreting official statistics. Results indicate that electronic invoicing helps reduce the shadow economy, while informational nudges encourage voluntary tax payments. Open data and procurement reforms improve transparency and competitiveness. Artificial intelligence aids fraud detection and risk prediction, but must be transparent about its algorithms. Digital audits boost efficiency, speed up program execution, and support cost savings.

Keywords: *control in the public sector, control and audit work, internal control system, control measures*

[1] andrp1992@ukr.net, Department of Accounting and Taxation, Stepan Gzhytskyi National University of Veterinary Medicine and Biotechnologies [Ukraine]
[2] stoyanovakoval@gmail.com, Department of Personnel, Mobilization and Organizational and Staff Work, Faculty of Training of Logistics Specialists, Military Academy [Ukraine]
[3] h.vasylevska@wunu.edu.ua, S. Yurii Department of Finance, West Ukrainian National University [Ukraine]
[4] gritsishen.do@gmail.com, Vice-Rector for Scientific and Pedagogical Work and Innovative Development, Zhytomyr Polytechnic State University [Ukraine]
[5] vik.gorbanyova@gmail.com, Department of Management, Faculty of Management, Hotel and Restaurant Business, and Tourism, International Humanitarian University [Ukraine]

Received on: 08.09.2025
Approved on: 27.10.2025

How to cite:
Andrushko, R., Stoianova-Koval, S., Vasylevska, H., Grytsyshen, D., & Gorbanova, V. (2025). Innovation in Public Administration: Interdisciplinary Methods of Tax Control and Optimization of Budget Resources. *Revista Administração em Diálogo - RAD*, 27(si), 203-216. https://doi.org/10.23925/2178-0080.2025v27iSI.73234

Introduction

In the current conditions of public administration transformation, the problem of increasing the efficiency of budgetary funds and ensuring tax discipline is of key importance. Global challenges related to economic instability, the digitalization of financial processes, and growing public demand for transparency necessitate new management approaches. Traditional instruments of state control are proving insufficient to counteract the shadow economy, corrupt practices, and inefficient resource use, prompting a search for interdisciplinary solutions that combine digital technologies, behavioral strategies, and principles of public financial management.

Recent research confirms the growing role of digitalization in taxation and financial control. In this context, special attention should be paid to strengthening control in the public sector, which ensures transparency of budgetary processes, the effectiveness of audit activities, and the creation of mechanisms of institutional trust. The introduction of modern tools of control in the public sector not only prevents misuse of resources but also serves as a foundation for systemic managerial innovations, combining digital technologies with internal control systems and comprehensive audit measures.

In particular, Bellon et al. (2022) and Heinemann and Stiller (2024) showed that the introduction of electronic invoicing helps to reduce tax evasion in Peru and Italy. Holz et al. (2023), Saulītis (2024), and Yang et al. (2024) demonstrated the effectiveness of information nudges in creating a culture of voluntary tax payment. At the same time, Adam et al. (2024), Duguay et al. (2023), and Felizzola et al. (2024) emphasize the importance of open data and public procurement reforms for strengthening transparency and accountability. A special place is occupied by research on artificial intelligence in management practices: Battaglini et al. (2025) and Christiansen (2024) demonstrate its effectiveness in tax auditing, while Aoki et al. (2024) and Decuypere and Van de Vijver (2025) draw attention to the challenges of trust and perceived fairness of algorithms.

At the same time, several gaps remain. First, the integration of various digital tools (e-invoicing, e-procurement, digital audit) into a single financial control ecosystem is not sufficiently studied. Secondly, the long-term social and economic consequences of digital reforms, particularly their impact on institutional trust and financial sustainability, require deeper analysis. Third, there is limited research on the potential to spread managerial innovations beyond the financial sector to education, healthcare, and social policy.

In this article, interdisciplinarity refers to the integration of approaches across three dimensions: methods (combining statistical evaluation, behavioral experiments, and comparative analysis), policy domains (linking taxation, procurement, and social policy), and governance levels (connecting national reforms with local budget practices). This precise framing highlights the novelty of our contribution by moving beyond the simple coexistence of tools toward a systemic framework of managerial innovations.

The purpose of this paper is to study managerial innovations in the public sector with a focus on interdisciplinary approaches to controlling tax payments and improving the efficiency of budget funds. The objectives are to characterize modern digital tools in tax administration, examine the role of open data in ensuring procurement transparency, describe the possibilities of using artificial intelligence in public financial management, and identify promising areas for integrating these approaches into a single management system.

Literature Review

Current research points to the growing importance of digitalization in taxation and public finance management. In particular, the analysis of the impact of electronic invoicing on tax compliance shows positive results in Peru and Italy (Bellon et al., 2022; Heinemann & Stiller, 2024), as well as in countries that combine tax audits with digital solutions (Kotsogiannis et al., 2025; Løyland, 2024). Additionally, the effectiveness of information «nudges» to increase voluntary tax payment has been confirmed (Holz et al., 2023; Saulītis, 2024; Yang et al., 2024; Yogama et al., 2024). Another research area concerns transparency and accountability in public procurement. The introduction of open contracting reforms and open data has a significant impact on increasing efficiency and combating corruption risks (Adam et al., 2024; Duguay et al., 2023; Felizzola et al., 2024; Waxenecker & Prell, 2024). Studies also confirm the economic feasibility of investing in e-procurement and contract disclosure in EU countries (Bosio et al., 2023; Bolcha, 2024).

The role of artificial intelligence in public administration is also widely considered. The issues of algorithmic explainability, trust, and perceptions of fairness have become key in government practice (Aoki et al., 2024; Decuypere & Van de Vijver, 2025; Khorana et al., 2024). Similar innovative machine-learning approaches are effective in improving tax audits (Battaglini et al., 2025; Christiansen, 2024). The problems of budget transparency and financial sustainability remain relevant. The digitalization of local audit and budget management is impacting the efficiency of resource allocation (Cuadrado-Ballesteros & Bisogno, 2022; Lino et al., 2022; Lino et al., 2023). In a broader context, Public Financial Management is studied as a factor in ensuring the sustainability of health systems and improving overall governance (Barroy, 2024; Musiega et al., 2024). It is also worth noting interdisciplinary examples where the use of artificial intelligence in the educational sphere demonstrates the possibility of expanding management decisions beyond public finance (Batsurovska et al., 2024). Thus, the analysis of scientific publications confirms that a combination of digital technologies, transparency, behavioral strategies, and interdisciplinary approaches underpins managerial innovations in the public sector.

The role of artificial intelligence in public administration is also widely considered. The issues of algorithm explainability, trust, and perception of fairness have become key in government practice (Aoki et al., 2024; Decuypere & Van de Vijver, 2025; Khorana et al., 2024). Similar innovative machine-learning approaches are effective in improving tax audits (Battaglini et al., 2025; Christiansen, 2024). The problems of budget transparency and financial sustainability remain relevant. The digitalization of local audit and budget management is impacting the efficiency of resource allocation (Cuadrado-Ballesteros & Bisogno, 2022; Lino et al., 2022; Lino et al., 2023). In a broader context, Public Financial Management is studied as a factor in

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo
PUC-SP

ensuring the sustainability of health systems and improving overall governance (Barroy, 2024; Musiega et al., 2024). It is also worth noting interdisciplinary examples where the use of artificial intelligence in education demonstrates the possibility of expanding management decisions beyond public finance (Batsurovska et al., 2024). Additionally, research in the field of contractual publicity and management strategies points to the dynamics of corruption networks and the importance of systemic innovation for the public sector (Christiansen, 2024; Waxenecker & Prell, 2024).

Thus, the scientific literature covers a wide range of managerial innovations, from digital technologies in tax administration and open data in public procurement to algorithmic solutions and behavioral strategies in tax discipline.

At the same time, there are still problems with integrating various instruments into a single system of state control, and the long-term effects of digital reforms on the state's financial stability remain insufficiently studied.

Materials and Methods

The study's materials and methods were based on an interdisciplinary analysis of scientific sources, statistical data, and regulatory documents governing digitalization processes in taxation and public finance management. The study used comparative analysis methods to compare the results of the implementation of electronic invoicing, open data, and e-procurement systems in different countries, content analysis of scientific publications to identify trends and approaches to the use of digital tools in the public sector, and a systematization method to summarize the practices of using artificial intelligence in public finance management. In addition, methods for generalizing and interpreting official statistics from the Ministry of Finance of Ukraine, the Cabinet of Ministers of Ukraine, and the OECD were used to assess the impact of digitalization on the efficiency of local budget execution from 2018 to 2024. The use of such methods enabled the integration of theoretical provisions and empirical data into a single system, allowing conclusions about the prospects for managerial innovation in the public sector.

The data used for Tables 3 and 4 were compiled through a synthesis of secondary statistical and analytical sources, including official reports of the Ministry of Finance of Ukraine (2018–2025) and the OECD Economic Surveys (2025). The indicators were standardized against international benchmarks for fiscal efficiency and transparency to ensure comparability. This methodological clarification highlights the reliability of the empirical evidence and the coherence of the interdisciplinary framework applied in the study.

Beyond the digital and comparative approaches, the study has highlighted the need to establish a robust internal control system as the basis for effective public-sector control. With a systematic approach to control and audit work, it is possible to identify risks, track budget spending, and prevent the misuse of public resources. The design of the control measures, which assume transparency, accountability, and adherence to fiscal rules at both the national and local levels, receives special attention. Not only do these mechanisms enhance trust in institutions, but they also provide empirical grounds for assessing managerial innovations in public administration.

Results

Current trends in digitalization in taxation and public finance demonstrate the rapid growth of the role of technological innovations in ensuring the transparency, accountability, and efficiency of the state's financial system. One of the key areas is the introduction of electronic invoicing, which automates the accounting process, reduces opportunities for manipulation and tax evasion, and increases trust between businesses and tax authorities. The experience of countries that have already implemented large-scale e-invoicing systems, such as Peru and Italy, has shown significant increases in tax compliance and reductions in the shadow economy. In Peru, the introduction of digital solutions has contributed to a significant increase in voluntary tax payments and generated additional budget revenues (Bellon et al., 2022). The Italian experience confirms the effectiveness of digitalization not only in domestic administration but also in countering cross-border tax evasion schemes, where e-invoicing has helped reduce the scale of fraudulent transactions (Heinemann & Stiller, 2024). Similar practices that combine tax audits with digital tools have demonstrated a steady increase in tax revenues and strengthened financial discipline (Kotsogiannis et al., 2025; Løyland, 2024).

An equally important factor in increasing voluntary tax discipline is the use of information nudges, which are actively used in international practice to influence taxpayer behavior. These approaches are based on behavioral economics and combine communication tools, personalized messages, and psychological triggers to make citizens willing to fulfill their tax obligations without coercion. Field experiments in different countries confirm their effectiveness. In particular, a large-scale experiment in the United States showed that even minimal «nudges» can generate millions of dollars in additional revenue (Holz et al., 2023). A study in Latvia has shown that a well-chosen information-communication strategy can influence wage legalization and reduce the level of unofficial payments (Saulītis, 2024). Similar results were obtained in China and Indonesia, where the use of information messages significantly increased the rate of timely payment of taxes and fines (Yang et al., 2024; Yogama et al., 2024). Thus, the digitalization of tax administration, combined with behavioral strategies, creates a comprehensive approach that not only increases tax revenues but also fosters a long-term culture of citizens' voluntary fulfillment of their financial obligations to the state.

In the current context of public administration reform, transparency and accountability in public procurement are particularly important. Openness of data and reform of contracting procedures are aimed at increasing the efficiency of budget funds, reducing opportunities for corrupt practices, and ensuring public trust in state institutions. The introduction of open-access systems for contracts, the publication of tender data, and the adoption of electronic tools contribute to the formation of new standards in financial management. Studies show that open data creates additional opportunities for analytics, monitoring, and civil society engagement in controlling the spending of public resources, thereby significantly reducing corruption risks. The generalized trends and approaches to public procurement reforms are presented in Table 1.

Table 1

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

The role of open data and public procurement reforms in increasing transparency and reducing corruption risks

Reform area	Implementation tools	Expected results	Examples of research
Open contracting	Publication of contracts, creation of open registers	Increasing transparency and accessibility of information for citizens	Adam et al. (2024)
Using open data	Systematization and analysis of procurement data	Reducing corruption risks, strengthening accountability	Duguay et al. (2023)
Electronic procurement (e-procurement)	Automated tender systems, electronic bidding	Reduced administrative costs, increased competition	Bosio et al. (2023)
Analytical tools for transparency	Use of data-driven analytics	Risk monitoring and detection of fraud	Felizzola et al. (2024)
Dynamic analysis of corruption networks	Social network research in procurement	Identifying patterns and dynamics of corrupt relationships	Waxenecker & Prell (2024)
Legislative reforms	Obligations to publish data and contracts	Institutionalization of transparency and accountability	Bolcha (2024)

Source: created by the author based on (Adam et al., 2024; Bosio et al., 2023; Bolcha, 2024; Duguay et al., 2023; Felizzola et al., 2024; Waxenecker & Prell, 2024)

The analysis shows that open data and public procurement reforms are among the most effective tools for fighting corruption and improving the efficiency of budget spending. The publication of contracts and the creation of electronic procurement systems provide citizens with access to important information and promote a competitive environment among bidders. The use of analytical tools allows risks and violations to be identified promptly, while network approaches enable the analysis of the deep connections among corrupt practices. Thus, the integration of open data into the public finance management process creates the basis for systemic changes aimed at increasing transparency and accountability of the public sector. At the same time, the effectiveness of these reforms largely depends on the development of public-sector control, which enables linking digital tools to practical audit procedures and internal control systems. Strengthening control in the public sector ensures not only the timely identification of risks and prevention of violations, but also the long-term sustainability of budgetary processes by institutionalizing transparency and accountability at both the national and local levels.

Management innovations in the public sector are increasingly linked to the integration of artificial intelligence technologies, which are becoming a key tool for improving the efficiency, transparency, and predictability of management decisions. These innovations are significant in tax administration, where automated algorithms enable improved auditing, detection of tax evasion, and increased voluntary compliance among taxpayers. At the same time, the development of algorithmic technologies requires due attention to the explainability of decisions and to citizens' perception of them as fair and impartial. This is due to the need to build trust in government institutions that use artificial intelligence. To systematize the main areas

ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

of AI use in public administration, the authors present generalized approaches in Table 2.

Table 2

Possibilities of applying artificial intelligence in public sector management practices

Area of application	Tools and technologies	Expected results	Examples of research
Tax audit	Machine learning algorithms for risk analysis	Increasing the efficiency of audits, reducing costs	Battaglini et al. (2025); Christiansen (2024)
Detecting tax fraud	Big data analytics, predictive models	Early detection of evasion schemes, increase in revenues	Bellon et al. (2022)
Explainability of algorithms	Explainable AI (XAI) methods	Increasing public trust, enhancing the legitimacy of decisions	Aoki et al. (2024); Khorana et al. (2024)
Shaping justice	Perception of algorithms in interaction with citizens	Balancing automation and societal expectations	Decuypere & Van de Vijver (2025)
Forecasting budget risks	Artificial intelligence models for financial monitoring	Improving the sustainability of financial management system	Cuadrado-Ballesteros & Bisogno (2022); Lino et al. (2023)
Integration into other areas	Use of AI in education and social policy	Expanding management practices beyond finance	Batsurovska et al. (2024)

Source: created by the author based on (Aoki et al., 2024; Battaglini et al., 2025; Bellon et al., 2022; Batsurovska et al., 2024; Christiansen, 2024; Cuadrado-Ballesteros & Bisogno, 2022; Decuypere & Van de Vijver, 2025; Khorana et al., 2024; Lino et al., 2023)

Thus, the use of artificial intelligence in public-sector management practices opens vast opportunities to improve tax audits, increase the efficiency of financial monitoring, and reduce tax evasion. Particular attention should be paid to the explainability of algorithms and to building public trust, as transparency and perceptions of justice determine society's willingness to accept new public administration tools. Research confirms that a balanced integration of AI into public financial systems can not only improve the effectiveness of management decisions, but also ensure sustainable development and institutional trust.

The digitalization of audit and budget management at the local level demonstrates a steady trend towards increasing the efficiency of budgetary resources and strengthening the financial sustainability of authorities. Automated monitoring tools, integrated management systems, and electronic platforms have enabled local communities to reduce the time required to implement budget programs and increase cost savings. This is confirmed by quantitative indicators reflecting the change in efficiency between 2018 and 2024. The data is summarized in Table 3.

The results show a significant increase in the efficiency of local financial management amid digitalization. While in 2018 budget execution was only 82%, in 2024 this figure reached 95%. The average duration of budget programs has been halved from 120 to 60 days. At the same time, the share of saved funds increased from

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

0% to 16%, demonstrating the effectiveness of e-procurement, automated treasury systems, and electronic monitoring platforms. These trends show that digital innovations not only conserve resources but also lay a more sustainable financial foundation for local community development.

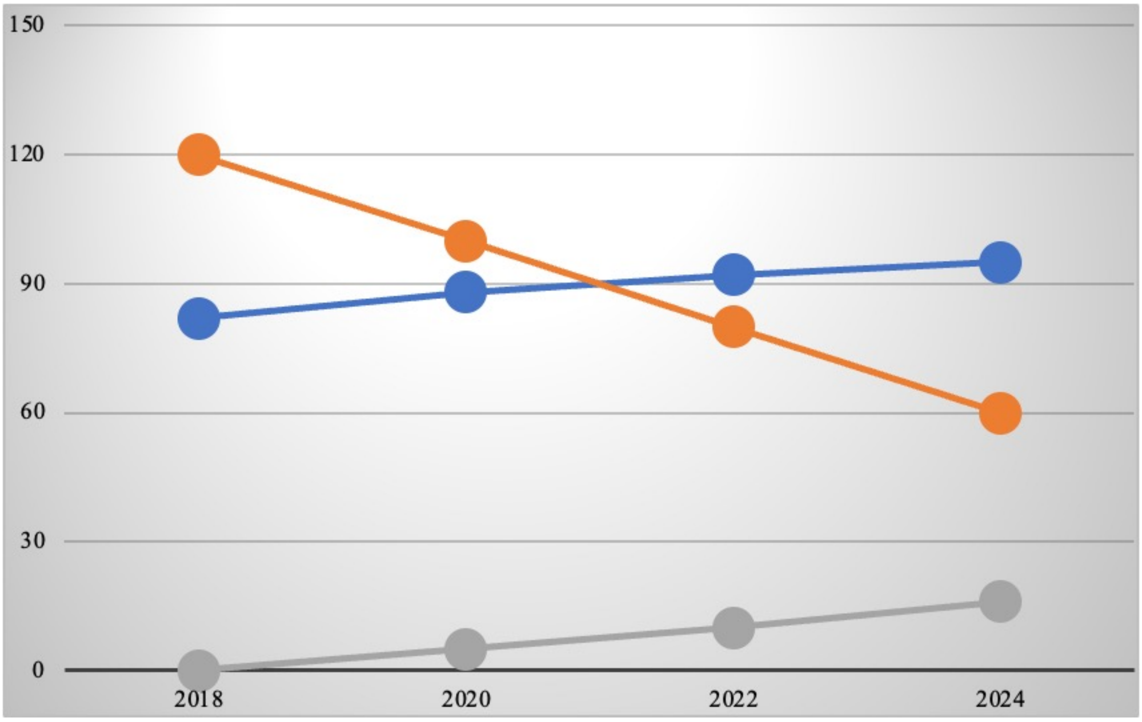
Management innovations in the public sector today are developing in response to the need for integrated solutions that go beyond traditional approaches to administration. The combination of digital technologies, behavioral strategies, and public financial management forms the basis of interdisciplinary approaches that can increase the efficiency of budgetary resources, strengthen transparency, and ensure public trust in government institutions.

Figure 1

Performance indicators of local budgets before and after digitalization

Source: created by the author based on (Ministry of Finance of Ukraine, 2025; Cabinet of Ministers of Ukraine, 2018; OECD, 2025)

Such an integrated approach allows not only to automate control and



management processes, but also to stimulate voluntary tax discipline and strengthen the financial sustainability of the management system. Generalized approaches are summarized in Table 3.

Table 3

Interdisciplinary approaches to management innovations in the public sector

PUC-SP
ODS
Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

Component	Content and tools	Expected results	Examples of research
Digital technologies	Electronic invoicing, e-procurement systems, artificial intelligence algorithms	Automation of processes, reduction of corruption risks, improvement of decision accuracy	Bellon et al. (2022) ; Bosio et al. (2023) ; Battaglini et al. (2025)
Behavioral strategies	Information «nudges», personalized messages, communication experiments	Increase voluntary payment of taxes, build public trust	Holz et al. (2023) ; Saulītis (2024) ; Yang et al. (2024)
Public financial management	Budget transparency, digitalization of audit, local governance	Increasing the efficiency of funds use, strengthening financial sustainability	Cuadrado-Ballesteros & Bisogno (2022); Lino et al. (2023); Barroy (2024)
Integration of spheres	Use of AI in education, healthcare, and social policy	Spreading management innovations beyond finance	Batsurovska et al. (2024)

Source: created by the author based on (Barroy, 2024; Battaglini et al., 2025; Bellon et al., 2022; Bosio et al., 2023; Cuadrado-Ballesteros & Bisogno, 2022; Holz et al., 2023; Lino et al., 2023; Saulitis, 2024; Yang et al., 2024; Batsurovska et al., 2024)

The integration of digital technologies, behavioral strategies, and public financial management forms a multi-level system of management innovations that includes both process automation and the promotion of a culture of voluntary citizen participation in fulfilling their tax obligations. Budget transparency and digital auditing at the local level create the basis for efficient resource allocation, while information «nudges» strengthen social capital and trust in government institutions. Interdisciplinary approaches allow management practices to be extended beyond the financial sector, extending positive impacts to education, healthcare, and social services. As a result, a more sustainable and adaptive public administration system is being formed that can respond to modern challenges.

Prospects for further research on digital public sector reforms are inextricably linked to assessing their long-term impact on financial stability. Although digital tools are already ensuring transparency and efficiency in the use of budget funds, their systemic effects on the sustainability of public finances, public trust, and the integration of various management practices into a single ecosystem require further study. The long-term effects of digitalization include not only increased tax discipline and strengthened budgetary sustainability, but also the transformation of the culture of interaction between the state and society. Table 4 summarizes the key prospects and areas for further research.

Table 4

Research Prospects and Long-Term Implications of Digital Reforms for Financial Stability

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

Research area	Potential research questions	Expected long-term consequences
Integration of digital systems	Interaction between e-invoicing, e-procurement, and digital audit	Formation of a single financial control ecosystem
Financial sustainability	Impact of digital reforms on debt policy and macroeconomic stability	Strengthening investor and creditor confidence, reducing deficit risks
Social dimension	Research on the level of public trust in algorithmic solutions	Increasing the legitimacy of managerial innovations
Behavioral effects	Long-term effectiveness of «nudges» in tax discipline	Strengthening the culture of voluntary tax payment
Interdisciplinary effects	Use of digital solutions in healthcare and education	Spreading the effects of financial sustainability to other areas of society

Source: created by the author based on (Aoki et al., 2024; Barroy, 2024; Batsurovska et al., 2024; Decuypere & Van de Vijver, 2025; Heinemann & Stiller, 2024; Holz et al., 2023; Lino et al., 2023; Musiega et al., 2024; Yang et al., 2024)

An assessment of the long-term effects of digital reforms shows that they can become not only a tool for current efficiency gains, but also a strategic factor in the state's financial stability. The integration of various digital systems into a single ecosystem creates a new quality of financial control that helps reduce debt risks and strengthen institutional trust. The social dimension is manifested in the gradual consolidation of a culture of transparency and voluntary fulfillment of tax obligations, which in the long run will transform the relationship between citizens and the state. The interdisciplinary nature of these changes allows us to extend the positive effect of digital reforms to related areas such as healthcare, education, and social policy, creating a more sustainable and adaptive society.

Discussion

The results of the study confirm the high efficiency of digitalization in tax administration and public finance management, but their interpretation requires comparison with other authors′ positions. On the one hand, studies by Bellon et al. (2022) and Heinemann and Stiller (2024) convincingly demonstrate that the introduction of electronic invoicing in Peru and Italy has significantly reduced the shadow economy and increased tax compliance. These findings are consistent with our analysis, which shows that digital tools have increased voluntary tax compliance. On the other hand, Løyland (2024) highlights the risk of excessive administrative pressure, which can undermine the credibility of tax authorities, while Kotsogiannis et al. (2025) view a combination of digital checks and traditional audits as a more balanced approach. This indicates the need for integrated models that consider both efficiency and social acceptability of reforms.

It is also important to emphasize the contradictions in the use of behavioral strategies. While Holz et al. (2023) and Yang et al. (2024) show that even minimal information «nudges» can generate significant additional budget revenues, Saulitis (2024) emphasizes that their effectiveness depends heavily on the cultural and institutional context. Thus, the findings of the study support the general trend of success of behavioral approaches, but point to the need for deeper adaptation to specific national conditions.

There are also different emphases on public procurement. Adam et al. (2024) and Duguay et al. (2023) consider open contracting and open data as a universal means of combating corruption, while Waxenecker and Prell (2024) draw attention to the dynamism of corruption networks, which requires constant updating of analytical tools. Our results confirm the positive impact of digital tools on transparency, but also point to the danger of new evasion schemes, consistent with the findings of Christiansen (2024).

The use of artificial intelligence in the public sector is particularly controversial. The studies by Battaglini et al. (2025) and Christiansen (2024) emphasize the effectiveness of algorithmic solutions in tax audits. In contrast, Aoki et al. (2024) and Decuypere and Van de Vijver (2025) highlight the risks of losing trust when algorithms are insufficiently explained. The results of our study confirm both positions: AI use increases the effectiveness of financial monitoring. However, it requires transparency and attention to the citizens' perception of the fairness of management decisions.

In summary, the results are consistent with the main international trends toward increasing the role of digital technologies, open data, and behavioral strategies in the public sector. At the same time, the identified contradictions highlight the limitations of these approaches' universality and the need to consider contextual factors. Further research should focus on assessing the long-term effects of digitalization on financial stability, identifying optimal models for integrating traditional and digital tools, and developing mechanisms to build public trust in algorithmic solutions.

At the same time, the integration of e-invoicing, e-procurement, and digital auditing appears particularly promising, as these domains jointly form a coherent financial control ecosystem. Their combined application can reduce duplication of efforts, enhance monitoring capacity, and generate synergistic effects that would not be possible if reforms were pursued separately. This will allow us to move from single innovations to an integrated public-sector management ecosystem.

Future research could extend the interdisciplinary framework of digital control beyond the financial domain. Integrating e-invoicing, e-procurement, and digital auditing systems with other areas of public administration – such as education management, healthcare budgeting, environmental governance, and social welfare monitoring – would enable the assessment of broader systemic effects of digitalization. This direction may help build a unified public governance ecosystem that enhances transparency, accountability, and citizen trust across multiple sectors.

Although artificial intelligence has been proven highly efficient in auditing and risk forecasting, there are several challenges associated with its application in public administration. The issues of data privacy, algorithmic bias, and fairness demand extensive regulatory control. At the organizational level, the introduction of AI will require new skills among civil servants, open sharing with citizens, and well-developed algorithms to explain their explanations to preserve institutional trust and legitimacy.

Conclusions

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

The conducted analysis highlights the transformative potential of digitalization and interdisciplinary innovation in reshaping public finance and taxation systems, fostering transparency, trust, and sustainable development:

1. The emergence of a new culture of voluntary tax discipline through the combination of technologies in taxation and public finance with behavioral strategies is motivated by digital tools.

2. The open data and procurement reform address corruption risk, increase accountability, and enhance competition in budgetary expenditure.

3. Artificial intelligence improves financial forecasting and tax audit, but it needs to be explained and fair so that institutions can trust it.

4. Interdisciplinary approaches expand on the innovation of finance to other fields like education, healthcare and social policy and their long-term implications on sustainability and institutional trust are one of the researchable areas in the future.

References

Adam, I., Fazekas, M., & Kasa, R. (2024). How do open contracting reforms work in low- and middle-income countries? *Governance*, 37(3), 692–710. https://doi.org/10.1111/gove.12868

Aoki, N., Tatsumi, T., Naruse, G., & Maeda, K. (2024). Explainable AI for government: Does the type of explanation matter to the accuracy, fairness, and trustworthiness of an algorithmic decision as perceived by those who are affected? *Government Information Quarterly*, 41(4), 101965. https://doi.org/10.1016/j.giq.2024.101965.

Barroy, H. (2024). Public Financial Management: A pathway to universal health coverage. *Health Systems & Reform*, 10(1), 2368051. https://doi.org/10.1080/23288604.2024.2368051

Batsurovska, I., Dotsenko, N., Gorbenko, O., Polyansky, P., & Baranova, O. (2024). Application of artificial intelligence in the higher education system. *2024 IEEE 19th international conference on computer science and information technologies* (CSIT) (1–6). IEEE. https://doi.org/10.1109/csit65290.2024.10982659.

Battaglini, M., Guiso, L., Lacava, C., Miller, D. L., & Patacchini, E. (2025). Refining public policies with machine learning: The case of tax auditing. *Journal of Econometrics*, 249, 105847. https://doi.org/10.1016/j.jeconom.2024.105847.

Bellon, M., Dabla-Norris, E., Khalid, S., & Lima, F. (2022). Digitalization to improve tax compliance: Evidence from VAT e-invoicing in Peru. *Journal of Public Economics*, 210, 104661. https://doi.org/10.1016/j.jpubeco.2022.104661.

Bolcha, P. (2024). Transparency and contract publication in public procurement: The case of the Czech Republic. *State and Local Government Review*, 56(2), 123–138. https://doi.org/10.1177/0160323X231185053

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

Bosio, E., Hayman, G., & Dubosse, N. (2023). The investment case for e-government procurement: A cost–benefit analysis. *Journal of Benefit-Cost Analysis*, 14(S1), 81–107. https://doi.org/10.1017/bca.2023.10.

Cabinet of Ministers of Ukraine. (2018, May 23). *Resolution No. 544: On placement of temporarily free funds of local budgets through the purchase of Ukrainian government bonds*. Ministry of Finance of Ukraine. https://mof.gov.ua/uk/local-budgets

Christiansen, T. G. (2024). Dynamic effects of tax audits and the role of intentions. *Journal of Public Economics*, 228, 105121. https://doi.org/10.1016/j.jpubeco.2024.105121

Cuadrado-Ballesteros, B., & Bisogno, M. (2022). Budget transparency and financial sustainability. *Journal of Public Budgeting, Accounting & Financial Management*, 34(6), 210–234. https://doi.org/10.1108/JPBAFM-02-2022-0025.

Decuypere, A., & Van de Vijver, A. (2025). AI: Friend or foe of fairness perceptions of the tax administration? *Government Information Quarterly*, 41(1), 102002. https://doi.org/10.1016/j.giq.2024.102002.

Duguay, R., Rauter, T., & Samuels, D. (2023). The impact of open data on public procurement. *Journal of Accounting Research*, 61(4), 1159–1224. https://doi.org/10.1111/1475-679X.12479

Felizzola, F., Decrescenzo, L., Tonelli, F., & Shimada, H. (2024). Enhancing transparency in public procurement through data-driven analytics. *Information Systems*, 125, 102430. https://doi.org/10.1016/j.is.2024.102430

Heinemann, M., & Stiller, W. (2024). Digitalization and cross-border tax fraud: Evidence from e-invoicing in Italy. *International Tax and Public Finance*, 32(1), 195–237. https://doi.org/10.1007/s10797-023-09820-x

Holz, J. E., List, J. A., Zentner, A., Cardoza, M., & Zentner, J. (2023). The $100 million nudge: Increasing tax compliance of firms and the self-employed. *Journal of Public Economics*, 226, 104–121. https://doi.org/10.1016/j.jpubeco.2022.104861

Khorana, A., Caram, S., & Rana, S. (2024). Can we explain fairness? Interpretable approaches in public sector AI. *Government Information Quarterly*, 41(3), 101952. https://doi.org/10.1016/j.giq.2024.101952

Kotsogiannis, C., Salvadori, L., Karangwa, J., & Murasi, I. (2025). E-invoicing, tax audits and VAT compliance. *Journal of Development Economics*, 172, 103403. https://doi.org/10.1016/j.jdeveco.2024.103403.

Lino, A. F., Aquino, A. C. B. de, & Neves, F. R. (2022). Accountants' postures under compulsory digital transformation imposed by government oversight authorities. *Financial Accountability & Management*, 38(2), 202–222. https://doi.org/10.1111/faam.12313

Lino, A. F., de Azevedo, R. R., & Belote, G. S. (2023). The influence of public sector audit digitalisation on local government budget planning: Evidence from Brazil.

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo

PUC-SP

Journal of Public Budgeting, Accounting & Financial Management, 35(2), 198–218. https://doi.org/10.1108/JPBAFM-05-2022-0090.

Løyland, K. (2024). Evaluating compliance gains of expanding tax enforcement with threshold-based audits. *Economica*, 91(364), 1113–1135. https://doi.org/10.1111/ecca.12499

Ministry of Finance of Ukraine. (2025). *Local Budgets Execution*. Ministry of Finance of Ukraine. https://mof.gov.ua/uk/local-budgets

Musiega, A., Tsofa, B., & Barasa, E. (2024). How does Public Financial Management (PFM) influence health system efficiency: A scoping review. *Wellcome Open Research*, 9, 566. https://doi.org/10.12688/wellcomeopenres.22533.1

OECD. (2025). OECD *Economic Surveys: Ukraine 2025*. Paris: OECD Publishing. https://www.oecd.org/en/publications/oecd-economic-surveys-ukraine-2025_940cee85-en/full-report/basic-statistics-of-ukraine-20231_31e23af7.html?utm_source=chatgpt.com

Saulītis, A. (2024). Appealing, threatening or nudging? Assessing various communication strategies in combating wage underreporting. Public Choice, 199(3–4), 409–432. https://doi.org/10.1007/s11127-024-01194-w

Waxenecker, M., & Prell, C. (2024). Corruption dynamics in public procurement: A longitudinal network study. *Social Networks*, 79, 154–167. https://doi.org/10.1016/j.socnet.2024.07.001

Yang, W., Zhang, X., & Li, J. (2024). Information nudges and tax compliance: Evidence from a field experiment. *Journal of Economic Behavior & Organization*, 224, 1150–1166. https://doi.org/10.1016/j.jebo.2024.105530

Yogama, E. A., Gray, D. J., & Rablen, M. D. (2024). Nudging for prompt tax penalty payment: Evidence from a field experiment in Indonesia. *Journal of Economic Behavior & Organization*, 224, 548–579. https://doi.org/10.1016/j.jebo.2024.06.003.

Revista Administração em Diálogo
ISSN 2178-0080
A RAD está vinculada ao ODS 4 - Educação de Qualidade
Programa de Pós-Graduação em Administração
Pontifícia Universidade Católica de São Paulo
PUC-SP