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DIGITAL TRANSFORMATION AND STRATEGIC ACCOUNTING: FINANCIAL RISK ASSESSMENT AND CORPORATE SUSTAINABILITY IN PUBLIC SECTORS IN LATIN AMERICA

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Summary
In Latin America, digital transformation has established itself as a key strategy to optimize public management processes, promoting strategic accounting as a tool to assess financial risks and ensure corporate sustainability. This study analyzes the interrelationship between digital technologies, advanced accounting practices, and sustainability models in the public sector, through a documentary review and qualitative analysis of recent cases in the region. The findings reveal that the adoption of technologies such as data analytics, artificial intelligence and integrated accounting information systems favors the early detection of risks, improves tax transparency and strengthens long-term planning. Likewise, the integration of environmental, social and governance (ESG) criteria in public accounting contributes to institutional sustainability. It is concluded that the alignment between digital transformation and strategic accounting is essential for public entities to respond to the fiscal, social, and environmental challenges of the region.

Keywords: digital transformation, strategic accounting, financial risks, corporate sustainability, public sector, Latin America.

Introduction

In the last decade, **digital transformation** has gone from being an optional strategy to becoming a fundamental pillar for the modernization of public management in Latin America. This process involves the adoption of technologies such as artificial intelligence, advanced data analytics, cloud computing, and integrated information systems, aimed at optimizing decision-making and institutional transparency (OECD & IDB, 2022). The **Digital Government Index for Latin America and the Caribbean** prepared by the OECD and the IDB highlights that, although several countries have made progress in data interoperability and digital public services, significant gaps persist in monitoring, measurement of results, and institutional capacities (OECD & IDB, 2023).

In parallel, **strategic accounting** has evolved in the public sphere as a tool that is not only limited to the traditional accounting record, but is integrated with strategic planning, performance evaluation and risk management. This approach incorporates methodologies such as scenario analysis, *Activity-Based Costing* (ABC), and the development of dashboards, which allow public managers to anticipate problems and allocate resources more efficiently (Cadez &Guilding, 2022; Oboh &Ajibolade, 2021).

In a post-pandemic context, characterized by high economic volatility, increases in public debt, and growing demands for accountability, **financial risk assessment** becomes a priority. Organizations such as the International Monetary Fund (IMF, 2023) and the World Bank (World Bank, 2023) have promoted specialized frameworks and *toolkits* to identify and quantify fiscal risks, including contingent liabilities arising from public-private partnerships (PPPs), state-owned enterprises, and environmental commitments.

On the other hand, **corporate sustainability** has ceased to be a concept limited to the private sector and has become a growing requirement in public administration. The publication of the **IFRS S1 and S2**standards by the *International Sustainability Standards Board* (ISSB) in 2023, as well as the International *Public Sector Accounting Standards Board* (IPSASB) guidelines, establish a common framework for the disclosure of relevant non-financial information, including environmental, social and governance metrics (IFRS Foundation, 2023; IPSASB, 2023). The integration of these criteria with strategic accounting and digital transformation makes it possible to design policies and budgets that are more resilient to structural and cyclical risks.

In this scenario, the convergence between **digital transformation, strategic accounting, and corporate sustainability** is emerging as a critical factor to strengthen the capacity of the Latin American public sector to manage its resources efficiently, transparently, and sustainably. This article explores this interrelationship, analyzing how the adoption of advanced digital technologies and strategic accounting methodologies can improve financial risk assessment and promote long-term institutional sustainability.

Theoretical framework

The relationship between **digital transformation**, **strategic accounting**, **financial risk assessment,** and**corporate sustainability** in the Latin American public sector is supported by several conceptual frameworks and recent studies. Each thematic axis is developed below.

1. Digital transformation in the public sector

Digital transformation in public administrations refers to the systematic integration of digital technologies to redesign processes, improve efficiency, and strengthen transparency. This implies not only the digitization of services, but also the generation of open data, interoperability between systems, and citizen user orientation (OECD & IDB, 2023). In Latin America, this process has accelerated after the COVID-19 pandemic, generating integrated public management platforms and interconnected accounting information systems (Cristia & Vlaicu, 2022). However, gaps persist in technological infrastructure, data governance, and human capabilities that limit their impact on financial risk assessment.

2. Strategic accounting and public management

Strategic accounting (SC) is a management approach that uses financial and non-financial information to support the formulation, implementation, and evaluation of organizational strategies (Cadez &Guilding, 2022). In the context of the public sector, its value lies in linking financial indicators with public policy objectives, optimizing the allocation of resources and the measurement of performance. Its application includes methodologies such as **Activity-Based Costing (ABC),Balanced Scorecard (BSC),** and public value chain analysis, allowing institutions to identify hidden costs, improve spending efficiency, and anticipate fiscal risks (Oboh &Ajibolade, 2021).

3. Financial Risk Assessment in the Public Sector

Financial risk assessment involves identifying, measuring, and managing threats that can affect a government's fiscal stability. These risks include over-indebtedness, tax revenue volatility, contingent liabilities, and climate risks (IMF, 2023). Tools such as the IMF's**Fiscal Risks Toolkit** and the World Bank's PFRAM make it possible to model scenarios and quantify potential impacts, integrating these projections with strategic accounting data (World Bank, 2023). In the region, the implementation of these instruments is still uneven, with countries such as Chile and Uruguay leading the way in implementation.

4. Corporate sustainability and international standards

In the public sector, corporate sustainability is linked to an institution's ability to meet its objectives considering economic, social, and environmental balance (IPSASB, 2023). The adoption of standards such as **IFRS S1 and S2** (IFRS Foundation, 2023) and IPSASB guidance drives public entities to include ESG (environmental, social, and governance) metrics in their reporting. Not only does this improve transparency, but it strengthens risk management by linking financial and non-financial impacts in strategic planning.

5. Integrative relationship

The combination of **digital transformation**, **strategic accounting,** and**sustainability standards** enables an improved management cycle: data generation → strategic accounting analysis → risk detection → informed decisions → accountability (OECD & IDB, 2023). This creates a governance framework where information flows in real-time and evidence-based decisions are made.

Table 1. Comparison of approaches and benefits

Dimension	*Key features*	*Benefits for the public sector*	*Recentexamples*
Digital transformation	Use of AI, *big data*, system interoperability, open data portals (OECD & IDB, 2023)	Increased efficiency, reduced corruption, online services, data-driven decision-making	GOV Platform. UY (Uruguay), Gov.br (Brazil)
StrategicAccounting	Integrating Financial and Non-Financial Metrics, ABC, BSC (Cadez &Guilding, 2022)	Optimization of resources, early detection of inefficiencies, linkage to strategic goals	Colombia Compra Eficiente, ChileCompra
Financial Risk Assessment	Identification and quantification of fiscal risks, contingent liabilities,	Fiscal stability, crisis prevention, transparency in indebtedness	Use of PFRAM in Paraguay and Peru

	use of IMF/WB *toolkits* (MFI, 2023)		
CorporateSustainability	Application of ESG Standards, IFRS S1–S2, IPSASB Guidelines (IPSASB, 2023)	Integrated reporting, environmental and social management, institutional reputation	ESG Reports from the Chilean Ministry of Finance

Source: Authors' elaboration based on OECD & IDB (2023), Cadez &Guilding (2022), IMF (2023), IPSASB (2023).

Methodology

The present study adopts a **qualitative design with a descriptive-analytical approach**, based on systematic documentary review and comparative analysis of cases. This approach is appropriate when seeking to understand complex phenomena involving technological, accounting, financial, and sustainability dimensions in the context of the public sector (Snyder, 2019; Booth et al., 2021).

1. Scope and methodological objective

The main objective was **to analyze the interaction between digital transformation, strategic accounting, financial risk assessment and corporate sustainability** in the Latin American public sector. The methodology was designed to: a) identify recent trends and practices in the region, b) review applicable international standards and frameworks, and c) synthesize an integrative conceptual model.

2. Sources of information

An intentional sampling of secondary sources **was used** to ensure relevance and timeliness, prioritizing:

- Peer-reviewed scientific articles (published between 2020 and 2025 in Scopus and Web of Science).
- Technical reports and guides issued by international organizations such as OECD, IDB, IMF, World Bank, ISSB and IPSASB.
- Case studies documented on official portals of Latin American governments.

Inclusion and exclusion criteria were applied according to thematic relevance, date of publication, geographical relevance and sectoral applicability (Grant & Booth, 2009; Snyder, 2019).

3. Review procedure

The documentary review followed the **PRISMA 2020**protocol adapted to qualitative studies, in four phases (Page et al., 2021):

1. **Initial search** of databases and institutional repositories using combinations of keywords in English and Spanish.
2. **Screening titles and abstracts** to eliminate duplicates and irrelevant sources.
3. **Full reading** of selected documents to extract relevant data.
4. **Qualitative synthesis** through thematic analysis to identify patterns, convergences and divergences.

4. Data analysis and synthesis

The data were organized into analysis matrices that grouped the information into four categories:

1. Digital transformationinitiatives.
2. Strategic accounting applications.
3. Financial risk assessment instruments.
4. Corporate sustainability frameworks and standards.

Content analysis **was applied** to identify key concepts and **comparative analysis** to detect replicable good practices in the region (Nowell et al., 2017).

Table 2. Methodological design of the study

Element	*Description*	*References*
Approach	Qualitative, descriptive-analytical	Snyder (2019); Booth et al. (2021)
Method	Systematic documentary review and comparative analysis	Page et al. (2021)
Sources	Academic articles, white papers, case studies	OECD & IDB (2023); IMF (2023)
Period	2020–2025	-
Inclusion criteria	Thematic relevance, geographical coverage, current affairs	Grant &Booth (2009)
Analysis techniques	Content and Comparative Analysis	Nowell et al. (2017)

Source: Authors' elaboration based on Snyder (2019), Page et al. (2021), OECD & IDB (2023), IMF (2023).

Results

The analysis of academic literature and reports from international organizations shows that, in Latin America, the convergence between **digital transformation**, **strategic accounting**, **financial risk assessment** and **corporate sustainability** has generated important advances, although with significant inequalities between countries.

1. Advances in digital skills in the public sector

The **Digital Government Index for Latin America and the Caribbean** (OECD & IDB, 2023) shows that countries such as Uruguay, Colombia, and Brazil lead in data interoperability and digital service delivery, reaching scores above 0.70 on a scale of 0 to 1. In contrast, nations with less digital development, such as Honduras or Nicaragua, register scores below 0.45, which limits the integration of real-time accounting and financial information (Cristia & Vlaicu, 2022).

Investment in open data platforms and public ERP systems has enabled greater traceability of expenditures, revenues, and budget execution in leading countries, making it easier to assess financial risks at the institutional level (OECD & IDB, 2023).

2. Integrating strategic accounting with risk management

In countries with more developed digital infrastructure, strategic accounting has been aligned with risk management methodologies promoted by the IMF and the World Bank, such as the **Fiscal Risks Toolkit** and **PFRAM** (IMF, 2023; World Bank, 2023).

For example, Paraguay and Peru have implemented PFRAM to analyze the sustainability of public-private partnership (PPP) projects, detecting projected increases in contingent liabilities of up to 1.2% of GDP if current contractual conditions are maintained (World Bank, 2023).

3. Adoption of ESG metrics and international standards

The launch of the **IFRS S1 and S2**standards in 2023 (IFRS Foundation, 2023) has prompted several ministries of finance in the region to include environmental, social, and governance indicators in their annual reports. Chile, for example, has incorporated CO_2 emissions metrics associated with public infrastructure projects, reporting an 8.5% reduction in 2024 compared to the 2020 baseline (Chilean Ministry of Finance, 2024).

This integration strengthens the relationship between financial performance and institutional sustainability, allowing public budgets to be aligned with climate and social objectives (IPSASB, 2023).

Table 3. Comparison of key indicators in selected countries (2023)

Country	*DGI Score (0-1)¹*	*Using Strategic Accounting*	*Application of IMF/WB tools*	*ESG reporting in the public sector*	*CO_2 emissionreduction 2020–2024 (%)*
Uruguay	0,82	High ABC and BSC integration	Yes (Fiscal RisksToolkit)	Yes (IFRS S1–S2, IPSASB)	6,2 %
Colombia	0,78	Medium-high, control panels	Yes (PFRAM)	Partial (social and environmental)	5,0 %
Brazil	0,74	Media, sectoral integration	Yes (Fiscal Risks Toolkit)	Yes (IFRS S1–S2)	4,8 %
Peru	0,69	Media, PPP linkage	Yes (PFRAM)	No	N/A
Chile	0,73	High, scenario analysis	Yes (Fiscal Risks Toolkit)	Yes (IFRS S1–S2, IPSASB)	8,5 %

Source: Authors' elaboration with data from OECD & IDB (2023)[1], IMF (2023), World Bank (2023), IFRS Foundation (2023), Ministry of Finance of Chile (2024).[1] DGI: *Digital Government Index* for Latin America and the Caribbean.

4. Synthesis of findings

- **Digital divide**: The difference between leading and lagging countries in digital capabilities is up to 0.37 points in the DGI index, which directly impacts the ability to integrate strategic accounting and risk management (OECD & IDB, 2023).
- **Maturity in strategic accounting**: Countries with better results in DGI show a more advanced use of tools such as ABC, BSC, and scenario analysis (Cadez &Guilding, 2022).
- **Adoption of ESG standards**: The implementation of IFRS S1–S2 and IPSASB is incipient but growing; their application is associated with improvements in transparency and alignment with climate commitments (IFRS Foundation, 2023; IPSASB, 2023).

Conclusions

The results of the study confirm that **digital transformation** and **strategic accounting** are a key binomial to strengthen financial **risk assessment** and **corporate sustainability** in the public sector in Latin America. However, the effectiveness of this convergence depends on institutional digital maturity, the adoption of advanced accounting frameworks, and the integration of international sustainability standards.

First, it is observed that countries with **greater digital capabilities** —such as Uruguay, Colombia, and Brazil—have managed to implement interoperable financial and accounting information systems that allow real-time analysis, facilitating the early detection of risks and the optimization of resources (OECD & IDB, 2023). This finding supports what Cristia and Vlaicu (2022) have argued, who highlight that digital infrastructure is an essential enabler for the modernization of public management.

Second, **strategic accounting** in the public sector has evolved towards a more proactive approach, integrating methodologies such as *Activity-Based Costing* (ABC), *Balanced Scorecard* (BSC), and scenario analysis, which improves responsiveness to fiscal contingencies and allows for more efficient budget planning (Cadez &Guilding, 2022; Oboh &Ajibolade, 2021). The combination of these tools with *IMF and World Bank fiscal risk management toolkits—such as the* Fiscal Risks Toolkit *and* PFRAM—has proven effective in assessing the potential impact of contingent liabilities and public investment projects (IMF, 2023; World Bank, 2023).

Third, the incorporation of **ESG criteria** through standards such as **IFRS S1 and S2** and **IPSASB**guidelines has made it possible to link financial performance with the environmental and social objectives of public policies (IFRS Foundation, 2023; IPSASB, 2023). Countries like Chile have shown that integrating CO_2 emissions metrics into public financial reporting not only improves transparency, but also facilitates budget alignment with international climate commitments.

However, structuralchallengesremain:

- Significant gaps in digital infrastructure and data literacy within governments (OECD & IDB, 2023).
- Low standardization in the application of strategic accounting and risk management methodologies between countries.
- Limited adoption of integrated ESG reporting in the public sector, especially in countries with lower institutional capacity.

In summary, it is recommended:

1. **Align national digital** transformation, strategic accounting, and sustainability agendas under clear inter-institutional governance.
2. **Invest in data interoperability** and in training public personnel in analytics and risk management.
3. **Gradually adopt international** standards of financial and non-financial sustainability, adapting them to the context of the public sector.

These steps can help the region move towards a **more resilient, transparent, and sustainable public management model**, capable of anticipating and mitigating risks, while ensuring an efficient and responsible use of public resources.

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