



Implementation of management accounting in the Portuguese public administration and perception of its purpose

Margarida Isabel Liberato^a, Inna Choban de Sousa Paiva^b,
Rogério Serrasqueiro^c

ABSTRACT

This study seeks to examine how financial officers within the Portuguese central public administration perceive the impact of implementing management accounting reform on control, transparency, and management reporting. The research methodology is based on a questionnaire sent to all central public administration organizations in Portugal and the data were analysed using a structural equation model by the Partial Least Square tool. Our results show the perception of financial officers about the implementation of management accounting has a very significant positive effect on increasing the quality of management reports, transparency, and control of public administrations. Thus, it can be concluded that public sector financial officers perceive that the intended objectives of the accounting reform are being successfully achieved. This is a unique opportunity to study the implementation of the management accounting reform, allowing us to know the perceptions of those financial officers about the impact that the implementation of management accounting has on management control, transparency, and reporting. Our study focused only on the central government in Portugal, with a response rate of 34%, requiring also an extended analysis in the setting of local and regional governments, once both were also targets of this reform. This study aids public institutions in understanding the advantages of implementing management accounting; this includes aspects such as control, enhancing organizational efficiency and effectiveness, improving transparency in public spending, and elevating the quality of reporting. This study contributes to shedding light on the role of management accounting in making decisions more aligned with the needs of society.

Keywords: Management accounting; ASSPA; Public sector; Control; Transparency; Management report.

^aInstituto Universitário de Lisboa (ISCTE-IUL), Lisbon, Portugal E-mail address: a16162@iscte-iul.pt

^bInstituto Universitário de Lisboa (ISCTE-IUL), Lisbon, Portugal and Business Research Unit (BRU-IUL), Lisbon, Portugal

E-mail address: inna_paiva@iscte-iul.pt

^cCOMEGI, Universidade Lusíada, Lisboa, Portugal E-mail address: 13001245@lis.ulusiada.pt

[This page is intentionally left blank]

Implementação da contabilidade de gestão na administração pública portuguesa e perceção do seu objetivo

RESUMO

Este estudo procura examinar a forma como os responsáveis financeiros da administração pública central portuguesa percecionam o impacto da implementação da reforma da contabilidade de gestão no controlo, na transparência e na prestação de informação de gestão. A metodologia de investigação baseia-se num questionário enviado a todos os organismos da administração pública central em Portugal e os dados foram analisados utilizando um modelo de equações estruturais pela ferramenta Partial Least Square. Os resultados mostram que a perceção dos responsáveis financeiros sobre a implementação da contabilidade de gestão tem um efeito positivo muito significativo no aumento da qualidade dos relatórios de gestão, da transparência e do controlo das administrações públicas. Assim, pode concluir-se que os responsáveis financeiros do setor público percebem que os objetivos pretendidos com a reforma contabilística estão a ser alcançados com êxito. Esta é uma oportunidade única para estudar a implementação da reforma da contabilidade de gestão, permitindo-nos conhecer as perceções desses responsáveis financeiros sobre o impacto que a implementação da contabilidade de gestão tem no controlo de gestão, transparência e relatórios. O nosso estudo centrou-se apenas na administração central em Portugal, com uma taxa de resposta de 34%, exigindo também uma análise alargada na definição dos governos locais e regionais, uma vez que ambos foram também alvos desta reforma. Este estudo auxilia as instituições públicas na compreensão das vantagens da implementação da contabilidade de gestão, incluindo aspetos como controlo, aumento da eficiência e eficácia organizacional, melhoria da transparência nos gastos públicos e elevação da qualidade dos relatórios. Este estudo contribui para lançar luz sobre o papel da contabilidade de gestão na tomada de decisões mais alinhadas com as necessidades da sociedade.

Palavras-chave: Contabilidade de Gestão; SNC-AP; Setor Público; Controlo; Transparência; Relatório de gestão.

[This page is intentionally left blank]

1. Introduction

In recent decades, there have been several reforms in public-sector accounting. Most of these reforms come from the implementation of International Public Sector Accounting Standards (IPSAS), encouraged by several global institutions, such as the World Bank, the International Monetary Fund, the OECD, the Asian Development Bank (Brusca & Martínez, 2016), the United Nations, and the European Commission (Grossi & Soverchia, 2011). It is intended that the adoption of IPSAS leads to greater transparency and accountability in the allocation of resources, the total costs of public activity, and the provision of government statistics (Gómez-Villegas et al., 2020). As a result, it is expected that it can improve information on the future impact of government policies and regulatory frameworks, facilitating better financial and investment decision-making for information users (OECD & IFAC, 2017).

The use of accrual accounting, especially with the adoption of IPSAS, is a prerequisite for the development of advanced cost accounting (Bertoni et al., 2017), an essential and inseparable part of good management accounting (Drury, 2006). This improvement is strongly linked to the principles of New Public Management (NPM), which advocates accounting reforms in public bodies, introducing performance measurement and management control procedures in public sector entities (Eriotis et al., 2012).

The evolution of management accounting, supported by innovations like Activity-Based Costing methods and tools such as the Balanced Scorecard, involves in-depth knowledge of the organization and its context (Abdullah et al., 2022; Alsayegh, 2020; García-Fénix & González-González, 2020; Marlina et al., 2020; Matos, 2022; Vale et al., 2022; Wahab et al., 2018). Whether following traditional (Pavlatos & Paggios, 2008) or contemporary (Abdel-Maksoud et al., 2012) approaches, management accounting focuses on controlling and evaluating organizational performance (Fandel et al., 2020). It ensures report quality for internal and external users, providing accurate information (Ojra et al., 2021). This contributes to transparency in decision-making, accountability for decision processes, and citizen accountability in public services (Gray & Kang, 2014).

Contemporary management accounting practices, highlighted by their emphasis on equality, speed, cost-effectiveness, competitiveness, and customer satisfaction (Abdel-Maksoud et al., 2012), are considered relevant in today's dynamic business environment (Nuhu et al., 2017). These practices, recognized as strategic management tools (Jarrar & Smith, 2014), integrate financial and non-financial information, linking operations to an organization's strategies and objectives, and facilitating the formulation and implementation of strategies (Nuhu et al., 2017).

In Portugal, the reform of public sector accounting began in 2015 with the publication of Decree-Law 192/2015, of 11 September, which approved the Accounting Standardization System for Public Administration (ASSPA). This reform is unique in comparison with those that have taken place in other countries, since in the other countries the accounting reforms corresponded to that of the IPSAS (Ada & Christiaens, 2018; Ahmad & Nassereddine, 2020; Argento et al., 2018; Mattei et al., 2020; Mosoba, 2017; Polzer et al., 2019; Silva et al., 2022), and in Portugal, in addition to the mandatory adaptation of the IPSAS concerning financial accounting, reforms were also implemented in terms of mandatory budgetary accounting and management accounting, covering central government, local government and regional government (Marques, 2018).

The ongoing reform in Portugal provides a distinctive opportunity to investigate the implementation of management accounting. Engaging with the individuals overseeing this process allows for an exploration of their perceptions regarding the challenges and incentives encountered. The study aims to assess the reform's effectiveness in achieving its defined objectives of management, analysis, control, and information.

Before the enactment of this law, management accounting in public administration in Portugal was spread among multiple sectoral statutes. Despite its mandatory character, there was limited adherence, no oversight mechanism, and no consequences for noncompliance (Pedrosa, 2013). A study in local government found that management accounting was used sporadically for analysis and decision-making, but not for cost analysis. Extracting information was time-consuming, and even advanced implementation organizations struggled to allocate direct expenses (Santos, 2017). Only a few educational institutions used analytical accounting, citing system complexity as the main barrier (Gonçalves, 2006).

García-Fénix and González-González (2020) observed political, technical, and cultural barriers to implementing management accounting in Spain. Despite the obligation to enhance transparency through cost-effective measures, municipal management still relies on budget execution. Resistance to the application of management accounting in the public sector exists in Germany as well, with one of the reasons cited being a fear of openness (Plötz, 2022).

We aim to study an ongoing process to see if public financial officers perceive that implementing management accounting improves internal control, enhances efficiency, increases transparency in public spending, and improves the quality of management reports, considering reliability, timeliness, comparability, and cost/benefit (Alsayegh, 2020; Amalia, 2023; Bertoni et al., 2017; Brusca et al., 2019;

Hamawandy et al., 2021; IFAC, 2000; Papiorek & Hiebl, 2023; Veledar et al., 2020). Considering the above, our research question is as follows:

Q: What is the perception of financial officers regarding the impact of management accounting reform on control, transparency, and management report?

From September 2022 to March 2023, we polled financial officials in the Portuguese central public administration (495 institutions), resulting in a 34% response rate across all government areas. Using a structural equation model (SEM) and the PLS tool (Hair et al., 2017), the results show that Portuguese central public administration financial officers see the implementation of management accounting as positively contributing to internal control, public account control, transparency, and management reporting quality.

This study shows how accounting can benefit institutions by increasing transparency in public accountability to citizens. Transparency is an important tool in the fight against corruption and it enables citizens to actively participate in public management. The aim is to improve citizens' perception of accounting reforms in Portugal, thus promoting greater control and transparency in public management and higher quality reporting. Social inclusion in public power ensures that decisions are in line with general social needs.

The subsequent sections include background and literature review (Section 2), hypotheses formulation (Section 3), research design overview (Section 4), and presentation of results and discussion (Section 5). The paper concludes in Section 6, offering suggestions for future research directions.

2. Literature review

In recent decades, public sector organizations have been subject to several reforms, particularly at the accounting level, with the implementation of international standards (IPSAS), which have faced several obstacles and incentives in their implementation (Liberato et al., 2024). Greatly influenced by NPM, management accounting practices are an important source of organizational information (Nuhu et al., 2017). Several countries are moving towards more widespread adoption of public cost accounting, driven by the need to address rising debt levels and shrinking budgets, as well as public criticism related to government management (IFAC, 2000).

Management and cost accounting technologies can help control and perhaps cut public sector spending, improving public administration efficiency and effectiveness.

Performance indicators allow for comparisons across budget users of similar size, taking into account criteria such as the number of staff, residents consuming services, available finances, and budget size. This approach promotes transparency and productive engagement with the public administration (Veledar et al., 2020).

Recognizing control, transparency, and management reporting as essential issues for organizational management, Table 1 presents studies on public sector management accounting and its influence on these aspects.

Table 1. Impact of Management Accounting on Control, Transparency, and Management Report

Authors and year	Source	Theory	Findings
Panel A: Control			
Berisha & Asllanaj, 2017	<i>International Journal of Economic Perspectives</i>	N.A.	Planning and controlling various operations.
Dmitrović-Šaponja & Suljović, 2017	<i>Economic Research</i>	NPM	Cost control and cost reduction.
Labrador & Olmo, 2019	<i>Public Money and Management</i>	NPM	Controlling government spending and rationalizing the use of resources.
Orelli et al., 2016	<i>International Journal of Public Administration</i>	NPM	Performance evaluation and cost control.
Papiorek & Hiebl, 2023	<i>Journal of Accounting and Organizational Change</i>	N.A.	Positively related to management control effectiveness.
Panel B: Transparency			
Alsharari and El-Aziz Youssef, 2017	<i>Asian Review of Accounting</i>	Old institutional economics; new institutional sociology; and power mobilization	Ensure transparency and accountability in all public resource transactions.
Alsayegh, 2020	<i>Journal of Accounting and Finance in Emerging Economies</i>	N.A	ABC results in greater transparency of costs, which have implications for planning, controlling, and decision-making.
Bertoni et al., 2017	<i>Journal of Contemporary Management Issues</i>	N.A.	Cost accounting ensures greater transparency in the use of public resources.
Fiondella et al., 2016	<i>Accounting Forum</i>	Theory of organizational change	Management accounting has sought to achieve transparency, efficiency, and accountability.
Panel C: Management Report			
Boučková, 2015	<i>Procedia Economics and Finance</i>	Agency Theory	Accurate and reliable feedback on the relative success or failure of the company's strategy.
Brusca et al., 2019	<i>Public Performance and Management Review</i>	Institutional Theory	A useful tool for management and accountability purposes in public organizations.

Panel C: Management Report			
Hamawandy et al., 2021	<i>Turkish Online Journal of Qualitative Inquiry</i>	Economic Theory	Revealing aspects of management accounting techniques and other financial and non-financial disclosures is significant.
Rahman et al., 2015	<i>Procedia Economics and Finance</i>	N.A.	Informing better before deciding matters within their organizations.
Veledar et al., 2020	<i>Interdisciplinary Description of Complex Systems</i>	NPM	Improving the quality of accounting information as a basis for decision-making in the field of public management.

N.A. (not available); NPM (New Public Management)

Table 1, Panel A shows the impact of management accounting on the control of public expenditure. On the one hand, it allows the promotion of cost reduction achieved by the use of strategic management accounting techniques (Dmitrović-Šaponja & Suljović, 2017; Orelli et al., 2016). On the other hand, it allows the control of government spending through the planning and rationalization of resources (Berisha & Asllanaj, 2017; Labrador & Olmo, 2019), increasing the efficiency and effectiveness of organizations (Papiorek & Hiebl, 2023). These findings allow us to conclude that management accounting contributes to both internal and external control.

Studies in Table 1, Panel B also show that implementing management accounting aims to enhance transparency, efficiency, and accountability in planning, controlling, and decision-making (Alsayegh, 2020; Alsharari & Youssef, 2017; Bertoni et al., 2017; Fiondella et al., 2016), thus recognizing the importance of management accounting for increasing transparency in the public sector.

For the management report, studies in Table 1, Panel C, indicate that the use of management accounting would improve the quality of accounting information as a basis for decision-making in public management (Brusca et al., 2019; Hamawandy et al., 2021; Rahman et al., 2015; Veledar et al., 2020) and should provide accurate and reliable feedback on the relative success or failure of the company's strategy (Boučková, 2015). These findings show the importance of management accounting in the supply of information to the government, so we consider that this topic, like the previous ones, should be studied in the context of the ongoing reform in Portuguese public accounting.

The prevailing theory in the revised studies is NPM, highlighting the emphasis on value for taxpayers' money, increased transparency, and accountability for results, thereby raising expectations for public sector accounting to report both conduct and outcomes (Höglund et al., 2021; Lewis, 2015; Lowe & Wilson, 2017; Speklé & Verbeeten, 2014).

2.2. Implementation of Management Accounting

Traditional management accounting practices, focusing on internal financial matters like budgeting and profitability analysis, differ from newly developed methods that integrate financial and non-financial information with a strategic orientation. Despite an interest in understanding whether management accounting in Europe aligns with “global” practices, there is limited evidence of its adoption and benefits across countries (Angelakis et al., 2010).

The level of implementation of management accounting in the public sector across countries varies and depends on several factors, such as the specific characteristics of the public sector context and government and other stakeholders interventions (Oyewo et al., 2019). Table 2 shows some findings from the literature on the implementation of management accounting in the public sector in some countries in the last 10 years.

Table 2. Level of implementation in the public sector

Authors and year of publication	Source	Theory	Countries	Findings
García-Fénix & González-González, 2020	<i>Revista Espanola de Financiacion y Contabilidad</i>	New Institutional Sociology	Spain	Only 39.6% of local authorities sent information on the Cost-Effectiveness.
Khodachek & Timoshenko, 2018	<i>International Journal of Public Administration</i>	NPM	Russia	Resistance to incorporating Western management accounting practices.
Kuroki & Motokawa, 2021	<i>Journal of Public Budgeting, Accounting and Financial Management</i>	Decision-making theory	Japan	61.4% of local governments had already introduced non-financial performance measures
Lutitsky et al., 2016	<i>Croatian Economic Survey</i>	NPM	Croatia	Poor usage of cost accounting methodology in public hospitals.
Mättö & Sippola, 2016	<i>Financial Accountability and Management</i>	NPM	Finland	Management accounting is not used to support decision-making.
Mohr et al., 2018	<i>Public Performance and Management Review</i>	NPM	19 European countries	The degree of use of cost accounting in public administration was on average 4.43 (on a scale of 1 to 7).
Orelli et al., 2016	<i>International Journal of Public Administration</i>	NPM	Greek and Italian	Widespread adoption of management accounting techniques.
van Helden & Uddin, 2016	<i>Critical Perspectives on Accounting</i>	NPM	Emerging Economies	Difficulties to import Western-centric public-sector management accounting ideas.
Wahab et al., 2018	<i>Asian Journal of Accounting and Governance</i>	NPM	Malaysia	Implemented the ABC system in 2012.

NPM (New Public Management)

Findings reveal significant variation in the implementation and usage of management accounting in the public sector across countries. In a 2018 European study, the average implementation score was approximately 4.43 out of 7 for a group of countries, including Austria, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Lithuania, the Netherlands, Norway, Portugal, Serbia, Spain, Sweden, and the UK (Mohr et al., 2018). Within this group, Spain reported that only 39.6% of local authorities provided information on cost-effective services to the Regional Finance Ministry in 2016, without any applied sanctions (García-Fénix & González-González, 2020). In Croatia, there's a noted underutilization of cost accounting in public hospitals (Lutitsky et al., 2016), and in Finland, managers tend to underestimate implementation challenges and overestimate the technical functionalities of management accounting tools (Mättö & Sippola, 2016). Conversely, in other European countries, like Greece and Italy, there is widespread adoption of management accounting techniques, coupled with the implementation of accruals accounting (Orelli et al., 2016).

Beyond Europe, countries like Russia resist adopting western management accounting practices in their central government (Khodachek & Timoshenko, 2018). However, there are more positive examples, such as Malaysia implementing the ABC system in 2012, although users report a relatively low usefulness of the information (3.65 on a scale of 0 to 5) (Wahab et al., 2018). In Japan, 61.4% of local governments have introduced non-financial performance measures, with 76.3% using these indicators in the budgeting process (Kuroki & Motokawa, 2021).

The reform of public accounting in Portugal brought out the need to restructure the accounting system that existed at the time, seeking to adapt it to a more dynamic public administration, which was desired to be more effective in the face of the objectives established by the intended philosophy of the NPM (Carvalho et al., 2008). In this context, the Public Chart of Accounts was approved, suitable for a modern public administration, to increase the quantity and quality of accounting information, allow the comparability and consolidation of public accounts by harmonizing accounting systems, and integrate budgetary, patrimonial, and analytical accounting, by the digraph method (Caiado et al., 2017; Jorge, 2003).

However, concerning management accounting, then called analytical accounting, the standards for its implementation were scarce. Each subsystem (POCED for education, POCAL for local administrations, POCMS for the health sector, and POCISSS for the social security sector) had different ways of treating information. Despite mandatory implementation, the development of the analytical accounting system lagged behind due to internal prioritization and challenges in allocating indirect costs, leading to successive postponements (Carvalho et al., 2008, 2012; Costa & Carvalho, 2007).

In 2015, the publication ASSPA (ASSPA consists of 27 standards, 25 of which dedicated to financial accounting adapted from IPSAS, one for budget accounting (Budget Accounting and Reporting), and the last for management accounting (Management Accounting). Public Accounting Standard (PAS) 27 – Management accounting was dedicated to defining the general requirements for its presentation, giving guidelines for its structure and development, and providing mandatory minimum requirements for its content and disclosure (Marques, 2018).

Public Accounting Standard (PAS) 27 aims:

- (a) To understand how management accounting can be used to support the internal processes of public management (internal aspect) and contribute to the purposes of accountability (external aspect).
- (b) To facilitate the implementation of management accounting by all public entities.
- (c) To explain the various cost concepts that can be applied to meet the information needs of the various stakeholders and the related management accounting processes.
- (d) To establish guidelines for the development of the management accounting system and the information to be disclosed.
- (e) To enable a better assessment of the economy, efficiency, and effectiveness of public policies.

The reform, initially planned for 2017, saw a limited start with only 19 entities that year. Postponed to 2018 and 2019 for central and local administrations, respectively, it is anticipated that currently, all organizations covered by the decree are using the new framework (Decree-Law No. 85/2016, December 21st; Decree-Law No. 33/2018, May 15th).

Being in a very embryonic level, it was not feasible to uncover research that demonstrates if the aims proposed by this credential have been accomplished and whether management accounting will benefit the Portuguese public administration.

3. Hypothesis development

Our research aims to identify the perception of financial officers regarding the impact of management accounting reform on control, transparency, and management reporting.

3.1. Control

The first wave of public sector reform was the new public administration. It was inspired by ideas associated with neoliberalism and public choice theory (van Helden et al., 2021), with reduced revenues and increased spending through the expansion of social welfare services resulting in the quest to cut costs. One important element of this change can be seen in the accounting practices with a move from cash to accrual accounting, together with the adoption of management accounting techniques to measure and control activities (Baird et al., 2007; Clarke & Lapsley, 2004; Cohen et al., 2007; Venieris & Cohen, 2004). Also, NPM had a strong influence when we talk about control. In developed countries, the impetus for NPM arose from fiscal crises characterized by reduced revenues and increased spending through the expansion of social welfare services, resulting in the quest to cut costs (Bevir, 2024). The stated goal of NPM was to increase efficiency and effectiveness in public sectors (Nogueira & Jorge, 2017).

The literature highlights aspects of management control, focusing on achieving effectiveness and efficiency in public spending and resource rationalization (Dimitrić et al., 2016; Labrador & Olmo, 2019; Orelli et al., 2016). Cost accounting, providing cost-related information, supports decision-making in various ways, such as evaluating government projects or products. Additionally, the literature affirms that quality information systems in management accounting positively impact the effectiveness of management control (Papiorek & Hiebl, 2023).

In Portugal, lawmakers emphasized the objectives of management, analysis, control, and information in the law (Article 6 DL 192/2015). This is reinforced by PAS 27, specifying the use of management accounting for planning, control functions, and cost reduction. It is therefore the scope of our study to understand whether the implementation of management accounting in the Portuguese central public administration led to an increase in control, as suggested. So, our first hypothesis is defined:

H1: Financial officers consider that the implementation of management accounting in public administration contributes to the improvement of control.

3.2. Transparency in public administration

Transparency refers to the clear and complete presentation of all accounting transactions and events (Al-otoom & Alrabba, 2022; Alsharari & Abougamos, 2017). Transparency is also a means of promoting accountability, internal discipline, and better governance, as it forces institutions to face the reality of a situation by holding stakeholders accountable, especially if they know they will have to justify their subsequent decisions and actions (Lepădatu & Pîrnău, 2009). In certain circumstances, NPM changes are frequently viewed as a policy tool that might promote good governance and better transparency in poor countries, where there may be legacy problems with extensive government and high levels of corruption that render simple aid donations useless (Ferlie, 2017). Organizations can enhance efficiency, effectiveness, and transparency through the implementation of management accounting (Fiondella et al., 2016).

The implementation of management accounting aims to enhance transparency by accurately reflecting the resources spent on assets and determining expenses for activities, services, and goods. This involves adopting cost accounting and control techniques, influencing the planning, controlling, and decision-making (Alsayegh, 2020; Bertoni et al., 2017). Rahman et al. (2015) suggest that public sector organizations should use management accounting in response to the *Corruption Perception Index*, which measures transparency, accountability, and integrity. In Bosnia and Herzegovina, it was recognized that budget accounting lacks information on the efficiency, effectiveness, and economy of public administration, reducing transparency and fostering corruption. Adopting management and cost practices is proposed to enhance the quality of accounting information for public management decision-making (Veledar et al., 2020).

In Portugal, there is a recognized need to enhance transparency, especially in disclosing financial information in reports, aiming to strengthen the perception of the state's financial transparency and facilitate a more accurate assessment of public sector debt (Attachment: I DL 192/2015, Article 75). Given this legislative goal, our study seeks to determine if the implementation of management accounting contributes to achieving the desired transparency.

H2: Financial officers consider that the implementation of management accounting in public administration contributes to the improvement of transparency.

3.3. Management report quality

Accounting information represents the actual state of the company correctly and reasonably. Cost and management accounting practices improve the quality

of accounting information as a basis for decision-making in the field of public management (Veledar et al., 2020), and the use of a variety of techniques contributes to this (Brusca et al., 2019). One of the techniques used in management and cost accounting is ABC, which has been considered a desirable option to provide the necessary information in public administrations (Goddard & Simm, 2017), although its implementation has some difficulties and challenges (Labrador & Olmo, 2019; Oseifuah, 2014).

This shift from traditional accounting is driven by NPM reforms, emphasizing value for taxpayers' money, transparency, and accountability (Höglund et al., 2021; Lewis, 2015; Lowe & Wilson, 2017; Speklé & Verbeeten, 2014). It is also shaped by organizational adaptation to external pressures and accepted norms influenced by cultural and political traditions, as justified by Institutional Theory (Carpenter & Feroz, 2001; Collin et al., 2009; Donatella & Tagesson, 2021). Thus, implementing accounting and management control systems was crucial for efficiently allocating resources, enhancing budget controls, improving performance management, and ensuring financial and managerial accountability to regulatory authorities and citizens. This also highlights their utility for risk management in public sector organizations (Bracci et al., 2022).

Hamawandy et al. (2021) show that management accounting positively impacts the content of financial reports in Iraqi commercial banks. This proves that management accounting, by offering comprehensive information, both financial and non-financial, contributes to decision-making within organizations (Boučková, 2015; Rahman et al., 2015).

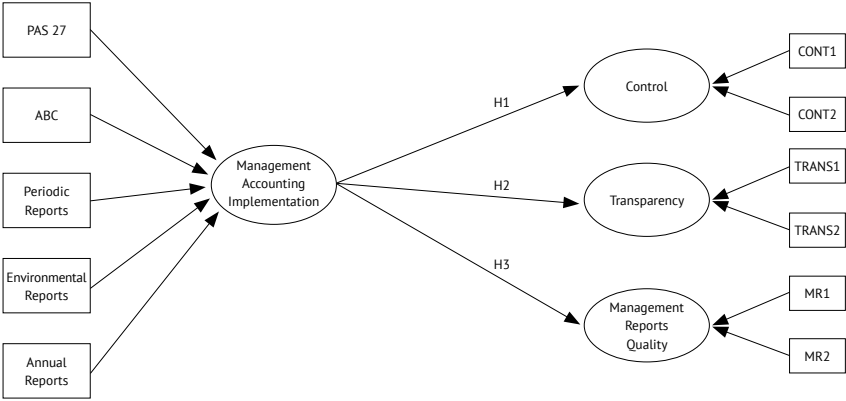
In the Portuguese case, ASSPA defines in PAS 27 that appropriate reports and maps should be prepared for internal and external dissemination on the costs, savings, efficiency, and effectiveness of the activities carried out, as well as on the amount and resources needed to support future activities, thus promoting accountability, being the annual management report the consolidating piece of all these data of the entity. The dissemination of information will be useful for prospective decision-making on the sustainability of public entities. Therefore, we formulate the following hypothesis:

H3: Financial officers consider that the implementation of management accounting in public administration contributes to the improvement of management report quality.

3.4 Conceptual model

Combining the results from different research, the authors suggest the model used for this research as follows:

Figure 1. Conceptual model



4. Research design

4.1. Sample and data collection

We collected data for our study by distributing a research questionnaire via email to financial officers overseeing all 495 organizations within the Portuguese Central Administration (Directorate-General for Budget, 2022).

After receiving positive feedback from this pilot test applied to three organizations, the survey was circulated in September 2022 via Qualtrics, along with a cover letter to explain the purpose of the research. To increase the response rate, follow-up reminders were sent out each month until March 2023. The final response rate was about 34% (170 responses).

The questionnaire consisted of some questions, and for each question, the respondents were asked to express the extent of their agreement or disagreement. The questions elaborated were based on a literature review and previously submitted to three pilot entities. A five-point Likert scale (where 1 corresponds to ‘totally disagree’ and 5 corresponds to ‘totally agree’) was used. Responses were kept confidential.

The first two sections of the questionnaire gathered general information about the respondents’ organizations and their profiles. All government areas participated, with the Ministry of Science and Higher Education representing the highest share at 24%, followed by the Ministry of Health and the Ministry of Labour, Solidarity, and Social Security, each accounting for 12% of responses. Approximately 26% of

respondents are integrated services, possessing only administrative autonomy, while 49% are autonomous services and funds, having both administrative and financial/patrimonial autonomy. The remaining respondents belong to reclassified public entities or to private entities mainly funded by the State. Regarding respondent profiles, 57% are female, 68% hold undergraduate degrees, and 23% have master's degrees or higher.

Section 3 of the questionnaire collected information on the level of implementation of the ASSPA in each organism. The majority of respondents have adopted financial accounting standards (73%) and budget accounting standards (80%), but the implementation of management accounting is limited (12%), primarily in the planning (45%) or testing (17%) phases.

In the last section, financial officers were asked to identify their grade of the perception of compliance with the objectives of management, analysis, control, and information provided for in the Decree-Law.

Variables

The survey data produced some latent and measured variables useful for testing our hypotheses.

Latent variables:

A) Management Accounting Implementation (MANAG_IMPL): This variable is measured through the seductive measurable variables and aims to measure the degree of implementation of management accounting during the implementation of the accounting reform:

a. PAS_27: This variable aims to measure the degree of implementation of PAS 27 provided for in the ASSPA, whose objective is to establish the basis for the development of a management accounting system in public administrations, defining the general requirements for its presentation, giving guidelines for its structure and development, and providing mandatory minimum requirements for its content and disclosure.

b. ABC: This variable aims to measure the degree of use of the ABC costing model, being characterized by the allocation of indirect costs to the activities developed to meet the needs of citizens/customers. That is, the basic assumption is that it is the activities that consume the resources and not the products (as happens in traditional systems).

c. Periodic Reports: Aims to measure the degree of production of periodic management reports, monitor operations, and make decisions about the future.

d. Environmental Reports: This variable measures the production of environmental management reports, identifying whether there is a policy to reduce effective environmental costs for improved performance and a positive image with stakeholders, such as customers, users, local communities, employees, the government, and suppliers.

e. Annual Reports: This variable aims to measure the degree of compliance with the preparation of the management report, to be included in the annual financial report, and should disclose information on performance evaluation and evaluation by programs on costs based on the information provided by the accounting and cost and management systems.

B) Control: This variable is measured by the following measurable variables and aims to measure the perception of the increase or decrease in control by financial officers with the adoption of management accounting: *CONT 1:* The accounting reform provides useful information for decision-making purposes. *CONT 2:* The accounting reform allows the control of the economy, efficiency, and effectiveness of public spending.

C) Transparency (TRANS): This variable aims to measure the perception of the increase or reduction of transparency in public administration by financial officers, with the adoption of management accounting and includes *TRANS1:* The accounting reform allows to adequately reflect the amount of resources spent on the acquisition of the assets consumed in the provision of services; and *TRANS2:* The accounting reform allows to determine expenses by activities, services, and goods, relative to the reporting period.

D) Management Report (MR): This variable aims to measure the perception of the increase or decrease in the quality of the reports made by the financial officers with the adoption of the management accounting provided for in the ASSPA. It includes *MR1:* The accounting reform provides information for the determination of public service expenditures; and *MR2:* The accounting reform provides forward-looking information on the sustainability of public entities.

The data for each of the variables were obtained taking into account the answers to the following questions presented in Table 3.

Table 3. Questions asked to measure the variables

Latent Variables	Measure Variables	Items from questionnaire
Management Accounting Implementation (MANAG_IMPL)	PAS_27	Identify the degree of implementation of each of the following items in your organization: - SNC-AP Standard 27.
	ABC	Identify the degree of implementation of each of the following items in your organization: - ABC System - Activity Based Costing.
	Periodic Reports	Identify the degree of implementation of each of the following items in your organization: - Management Accounting disclosure maps.
	Environmental Reports	Identify the degree of implementation of each of the following items in your organization: - Disclosure of environmental income and expenses.
	Annual Reports	Identify the degree of implementation of each of the following items in your organization: - Management Report.
Control	CONT 1	Identify your perception of: Evidence of better budget execution; It allows the assessment of the entity's ability to meet future financial commitments, better performance concerning fiscal policy objectives; Allows financial control; Allows the control of the legality of the execution of public revenue and expenditure; It allows the assessment of the entity's ability to meet future financial commitments.
	CONT 2	Identify your perception of: It allows the control of the economy, efficiency and effectiveness of public spending.
Transparency (TRANS)	TRANS1	Identify your perception of: Provides information for the determination of public service expenditures; It allows for an adequate reflection of the amount of resources spent on the acquisition of assets consumed in the provision of services.
	TRANS2	Identify your perception of: It allows you to determine the expenses by activities, services and goods for the reporting period.

Latent Variables	Measure Variables	Items from questionnaire
Management Report (MR)	MR1	Identify your perception of: It allows compliance with the law in terms of public finances to be verified; The SNC-AP provides a true and fair view of the financial position and its changes; It allows you to obtain a true and accurate picture of financial performance; It allows you to obtain a true and appropriate picture of cash flows; It provides information for the preparation of all types of accounts, statements and documents to be sent to the Assembly of the Republic; It provides information for the preparation of all types of accounts, statements and documents to be sent to the Court of Auditors; Provides information for the preparation of all types of accounts, statements and documents to be sent to other control and supervision entities; Provides information for the preparation of accounts following the European System of National and Regional Accounts; It allows information to be obtained for the preparation of macroeconomic statistics; It provides information for decision-making in the field of budgetary and monetary policies at the European Union level; Provides useful information for decision-making purposes.
	MR2	Identify your perception of: It provides forward-looking information on the sustainability of public entities.

5. Results and discussion

5.1. Data analysis

The effect of independent variables on the dependent variables was analysed by applying equation structural modelling (SEM), using the Smart PLS4 (Ringle et al., 2022). With PLS, measurement quality testing was performed using Cronbach's Alpha. The measurement scale is considered good when the overall CRA factor is >0.6 and the corrected item-total correlation is >0.3 (Nunnally, 1978; Peterson, 1994). All the measurement scales and observation variables are continued to perform Exploratory Factor Analysis (EFA).

In the EFA analysis, the compatibility testing was performed using Kaiser-Meyer-Olkin (KMO) measure. According to Hair et al. (2006), when KMO is qualified from 0.5 to 1, the analysed factors are compatible. At the same time, the correlation

testing of the observed variables in each scale was performed using Barlett's test (Snedecor & Cochran, 1989). When the significance (sig.) is less than or equal to 0.05, then the variances are equal across groups or samples. Cumulative variance testing was also performed, showing the percentage change in the factors explained by the observation variables.

The Management Accounting Implementation variable, intended to gauge the extent of management accounting implementation in the Central Public Administration as outlined in the ASSPA, was derived from the results of individual task implementation degrees. Answers may vary between 1 – Not Implemented, 2 – Planned, but not yet in force, 3 – In the testing phase, 4 – Implemented, and 5 – In routine, with evaluation and constant improvements: the adoption of PSA 27 of the ASSPA, the implementation of the ABC system, the disclosure of periodic reports, the disclosure of environmental income and expenses, and the annual report. The results are presented in Table 4.

Table 4. Degree of actions required for the implementation of management accounting

	Average	Median	Min. Observed	Max. Observed	Standard deviation
PSA 27	2.753	3.000	1.000	5.000	1.363
ABC	1.947	2.000	1.000	5.000	1.186
Periodic Reports	2.424	2.000	1.000	5.000	1.328
Environmental Reports	1.776	1.000	1.000	5.000	1.102
Annual Reports	3.906	4.000	1.000	5.000	1.083

The analysis of Table 4 shows that the actions necessary for the implementation of management accounting in central government bodies are still somewhat embryonic. On average, the ABC costing model and environmental reports are in the planning phase, accounting reform rules and related reports are between the planning and testing phases, and the annual report, on average, is nearly fully implemented.

The simple average of these five factors indicates that the implementation of management accounting is at 2.561 points on a 1 to 5 scale, signifying an advanced planning stage and moving toward the testing phase. It is noteworthy that, in 19 European countries, the average use of cost accounting in public administration was 4.43 on a 1 to 7 scale (Mohr et al., 2018), equivalent to 3.585 on a 1 to 5 scale. This suggests that Portugal's implementation of management accounting is below the European average, though these findings pertain to an early phase of the reform's implementation.

5.2. Statistics analysis

To test the conceptual model, the chosen method was SEM, specifically using partial least squares (PLS), a variance-based structural equation modelling technique, implemented with SmartPLS 4 software (Ringle et al., 2022). The analysis and interpretation followed a two-step approach. The first step involved evaluating the reliability and validity of the measurement model, followed by assessing the structural model (Dias et al., 2023). The examination of individual indicators included reliability, convergent validity, internal consistency reliability, and discriminant validity (Dias et al., 2023; Hair et al., 2017). Results indicated that all items’ standardized factor loadings were above 0.6 (minimum value of 0.648), and all were significant at $p < 0.001$, providing evidence for the reliability of individual indicators (Hair et al., 2017). Internal consistency reliability was confirmed as Cronbach’s alphas, for all constructs and composite reliability (CR) values exceeded the cut-off point of 0.7 (refer to Table 5) (Hair et al., 2017).

Table 5. Composite reliability, extracted mean-variance, correlations, and discriminant validity checks

Latent Variables	α	CR	AVE	1	2	3	4
1. MANAG_IMPL	0.794	0.851	0.534	0.731	0.208	0.227	0.246
2. Control	0.779	0.900	0.819	0.177	0.905	1.030	0.795
3. MR	0.753	0.876	0.781	0.226	0.780	0.884	0.977
4. TRANS	0.847	0.925	0.861	0.244	0.638	0.786	0.928

Note: α Cronbach’s alpha; CR - Composite reliability; AVE -Average variance extracted; Bolded numbers are the square roots of AVE. Below the diagonal elements are the correlations between the constructs. Above the diagonal (bold) elements are the HTMT ratios.

Convergent validity was also confirmed for three key reasons. First, as noted before, all items loaded positively and significantly on their respective constructs. Second, all constructs had CR values higher than 0.70. Third, as Table 5 shows, the average variance extracted (AVE) for all constructs exceeded the threshold of 0.50 (Bagozzi & Yi, 1988). The discriminant validity was assessed using two approaches. Firstly, the Fornell and Larcker criterion was applied, which necessitates that the square root of a construct’s AVE (indicated on the diagonal in bold values in Table 5) surpasses its highest correlation with any other construct (Fornell & Larcker, 1981). Table 5 indicates that this criterion holds for all constructs. Secondly, the heterotrait-monotrait ratio (HTMT) criterion was utilized (Hair et al., 2017; Henseler et al., 2015). As depicted in Table 5, all HTMT ratios fall below the more conservative threshold of 0.85 (Hair et al., 2017; Henseler et al., 2015), offering additional evidence of discriminant validity.

Table 6. Structural model assessment

Path	Path coefficient	Standard errors	t statistics	p values
MANAG_IMPL-> Control	0.177	0.084	2.115	0.034
MANAG_IMPL-> TRANS	0.244	0.070	3.460	0.001
MANAG_IMPL-> MR	0.226	0.083	2.711	0.007

The structural model was assessed using the sign, magnitude, and significance of the structural path coefficients; the magnitude of the R^2 value for each endogenous variable as a measure of the model's predictive accuracy; and the Stone-Geisser's Q^2 values as a measure of the model's predictive relevance (Dias et al., 2023; Hair et al., 2017). The collinearity was checked before evaluating the structural model (Hair et al., 2017). The variance inflation factor (VIF) values ranged from 1.165 to 2.245, which was below the indicative critical value of 5 (Hair et al., 2017), indicating no collinearity. The coefficient of the determination R^2 for the three endogenous variables of Control, Management Report, and Transparency were 31%, 59%, and 51%, respectively. These values surpassed the threshold value of 10% (Falk & Miller, 1992). The Q^2 values for all endogenous variables (0.006, 0.026, and 0.037) were above zero, which indicates the predictive relevance of the model. Bootstrapping with 5,000 subsamples was employed to assess the significance of the parameter estimates (Hair et al., 2017).

Analysing the results in Table 6 for the control variable, it is observed that $\beta=0.177$, $p<0.05$, indicating that the implementation of management accounting has a positive effect on internal control and on the control of public accounts, from the perspective of the financial officers, supporting H1. This result is in line with previous studies that point to the need to promote cost and management accounting to control government spending and rationalize the use of resources, increasing the effectiveness of public organizations (Berisha & Asllanaj, 2017; Dmitrović-Šaponja & Suljović, 2017; Labrador & Olmo, 2019; Orelli et al., 2016; Papiorek & Hiebl, 2023).

The variable transparency showed a $\beta=0.244$, $p<0.01$. This result indicates that the implementation of management accounting has a strong positive effect on increasing transparency, from the perspective of financial officers, confirming H2. This result is also consistent with previous studies that stated that management accounting achieves transparency, efficiency, and accountability (Alsharari & Youssef, 2017; Fiondella et al., 2016) through cost accounting techniques (Bertoni et al., 2017), where the ABC system stands out, which has implications for planning, controlling, and decision-making (Alsayegh, 2020).

H3 was also confirmed, since the results show that the implementation of management accounting has a strong impact on the quality of management reports ($\beta=0.226$, $p<0.01$), from the perspective of financial officers. This conclusion is in line with previous studies showing that the use of management accounting improves the quality of accounting information as a basis for decision-making in public management (Brusca et al., 2019; Hamawandy et al., 2021; Rahman et al., 2015; Veledar et al., 2020) and can feedback on the relative success or failure of the company's strategy (Boučková, 2015).

These findings, aligned with the NPM theory that links public sector reform and its policies to enhanced transparency and accountability for results, align with the conclusions drawn by other authors in the literature (Arnaboldi et al., 2015). In Spanish universities, cost accounting is implicitly required by law to determine university fees and, in some cases, to negotiate funding from regional governments (Brusca et al., 2019). The efficiency and effectiveness improvement driven by management accounting is further validated by the utilization of the ABC model, as recommended by the Portuguese reform. This model's information aids in enhancing efficiency by eliminating non-value-added activities, enabling managers to ensure full employee engagement for more efficient services (Wahab et al., 2018).

6. Conclusions

In recent decades, Portugal has followed a path toward the integration of management accounting in the public sector, facilitating the identification of various management indicators for informed decision-making. The implementation of ASSPA in 2015 emphasized this necessity, requiring the adoption of management accounting to generate relevant and analytical information regarding expenses and, when applicable, income and outcomes. This addresses various informational requirements for decision-making among managers and public officials.

This research aimed to examine how financial officers within the central public administration of Portugal perceive the relationship between management accounting implementation and the achievement of key objectives, such as enhancing control, transparency, and management reporting. The extent of implementation was assessed by looking at the factors related to PAS 27, the adoption of the ABC model, the frequency of reports, the reporting of environmental data, and the delivery of the annual report. The findings indicate that the implementation of management accounting significantly influenced financial officers' views on the improvement of management report quality. Based on the perceptions of financial officers, management accounting plays a vital role in enhancing control and transparency

within organizations in central public administration. The financial officers perceive that the objectives set forth by the ASSPA are being accomplished, aligning with observations made in other countries (Ahmed et al., 2019).

Future research may reveal the determinants that led to the delay in the implementation of management accounting compared to the implementation of the reforms in financial accounting and budget accounting (all provided for in the same law), whether they are determinants related to the organization itself or to the different stakeholders of these institutions, that often lead to the partial implementation of reforms (Vale et al., 2022). In addition, further investigations can also reanalyse this same reality when this reform is in a state of greater maturity. Another avenue of investigation is to undertake comparative case studies between central, local, and regional administrations to understand if the level of implementation, their determinants for implementation, and the perceptions of their purposes are identical or not.

This study seeks to deepen the understanding of public institutions about the advantages of implementing management accounting. It focuses specifically on the perception of financial leaders regarding the improvement of control, efficiency, and effectiveness within organizations, the increase of transparency in public expenditures, and the improvement of the quality of management reports, resulting from the implementation of management accounting. These considerations cover attributes such as reliability, timeliness, comparability, and cost/benefit (Grossi et al., 2020; Labrador & Olmo, 2019; Steccolini, 2019; Veledar et al., 2020).

This study highlights how management accounting benefits institutions by enhancing transparency in public accountability to citizens. Transparency, a crucial tool against corruption, empowers citizens to engage actively in public administration. The aim is to improve citizens' perceptions of Portuguese public accounting reform, fostering increased control, transparency in public management, and higher quality management reporting. This involvement between society and public power ensures decisions align with overall social needs (Agostino et al., 2022; Hopper et al., 2009; IFAC, 2000).

References

- Abdel-Maksoud, A., Abdallah, W., & Youssef, M. (2012). An empirical study of the influence of intensity of competition on the deployment of contemporary management accounting practices and managerial techniques in Egyptian firms. *Journal of Economic and Administrative Sciences*, 28(2), 84–97.
- Abdullah, N., Krishnan, S., Zakaria, A., & Morris, G. (2022). Strategic management accounting practices in business : A systematic review of the literature and future research directions. *Cogent Business and Management*, 9. <https://doi.org/10.1080/23311975.2022.2093488>
- Ada, S., & Christiaens, J. (2018). The magic shoes of IPSAS: Will they fit Turkey? *Transylvanian Review of Administrative Sciences*, 14(54E), 5–21. <https://doi.org/10.24193/tras.54E.1>
- Agostino, D., Saliterer, I., & Steccolini, I. (2022). Digitalization, accounting and accountability : A literature review and reflections on future research in public services. *Financial Accountability and Management*, 38, 152–176. <https://doi.org/10.1111/faam.12301>
- Ahmad, A., & Nassereddine, H. (2020). Importance of adoption and Implementation of IPSAS in Cyprus: An empirical study. *International Journal of Latest Engineering and Management Research*, 05(01), 52–61. issn: 2455-4847
- Ahmed, A., Abdulrahman, S., & Ghani, M. (2019). Management Accounting Practices in Many Countries around the World: a review of the Literature. *Journal of Business and Management*, 21(2), 5–9. <https://doi.org/10.9790/487X-2102060509>
- Al-otoom, T., & Alrabba, H. (2022). Impact of Lack of Self-efficiency and Assets Evaluation on Resistance of IPSAS Implementation. *Information Sciences Letters*, 11(5), 1771–1779. <https://doi.org/10.18576/isl/110533>
- Alsayegh, M. (2020). Activity Based Costing around the World: Adoption, Implementation, Outcomes and Criticism. *Journal of Accounting and Finance in Emerging Economies*, 6(1), 251–262. <https://doi.org/10.26710/jafee.v6i1.1074>
- Alsharari, N., & Abougamos, H. (2017). The processes of accounting changes as emerging from public and fiscal reforms: an interpretive study. *Asian Review of Accounting*, 25(1), 2–33. <https://doi.org/10.1108/ARA-01-2016-0007>

- Alsharari, N., & Youssef, M. (2017). Management accounting change and the implementation of GFMS: A Jordanian case study. *Asian Review of Accounting*, 25(2), 242–261. <https://doi.org/10.1108/ARA-06-2016-0062>
- Amalia, M. (2023). Enhancing Accountability and Transparency in the Public Sector: A Comprehensive Review of Public Sector Accounting Practices. *The ES Accounting and Finance*, 1(03), 160–168. <https://doi.org/10.58812/esaf.v1i03.105>
- Angelakis, G., Theriou, N., & Floropoulos, I. (2010). Adoption and benefits of management accounting practices: Evidence from Greece and Finland. In *Advances in Accounting* (Vol. 26, Issue 1, pp. 87–96). <https://doi.org/10.1016/j.adiac.2010.02.003>
- Argento, D., Peda, P., & Grossi, G. (2018). The enabling role of institutional entrepreneurs in the adoption of IPSAS within a transitional economy: the case of Estonia. *Public Administration and Development*, 38(1), 39–49. <https://doi.org/10.1002/pad.1819>
- Arnaboldi, M., Lapsley, I., & Steccolini, I. (2015). Performance Management in the Public Sector: the Ultimate Challenge. *Financial Accountability and Management*, 31(1), 1–22. <https://doi.org/10.1111/faam.12049>
- Bagozzi, R., & Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Sciences*, 16, 74–94. <http://dx.doi.org/10.1007/BF02723327>
- Baird, K., Harrison, G., & Reeve, R. (2007). Success of activity management practices: the influence of organizational and cultural factors. *Accounting and Finance*, 47(1), 47–67. <https://doi.org/10.1111/j.1467-629X.2006.00195.x>
- Berisha, V., & Asllanaj, R. (2017). Historical evolution of managerial accounting theories and practice development: evidence from Kosovo. *International Journal of Economic Perspectives*, 11(3), 287–303.
- Bertoni, M., Rosa, B., & Lutitsky, I. (2017). Opportunities for the improvement of cost accounting systems in Public Hospitals in Italy and Croatia: A case study. *Journal of Contemporary Management Issues*, 22, 109–128.
- Boučková, M. (2015). Management Accounting and Agency Theory. *Procedia Economics and Finance*, 25(15), 5–13. [https://doi.org/10.1016/s2212-5671\(15\)00707-8](https://doi.org/10.1016/s2212-5671(15)00707-8)

- Bracci, E., Mouhcine, T., Rana, T., & Wickramasinghe, D. (2022). Risk management and management accounting control systems in public sector organizations: a systematic literature review. *Public Money and Management*, 42(6), 395–402. <https://doi.org/10.1080/09540962.2021.1963071>
- Brusca, I., Labrador, M., & Condor, V. (2019). Management Accounting Innovations in Universities: A Tool for Decision Making or for Negotiation? *Public Performance and Management Review*, 42(5), 1138–1163. <https://doi.org/10.1080/15309576.2018.1549086>
- Brusca, I., & Martínez, J. (2016). Adopting International Public Sector Accounting Standards: a challenge for modernizing and harmonizing public sector accounting. *International Review of Administrative Sciences*, 82(4), 724–744. <https://doi.org/10.1177/0020852315600232>
- Caiado, A., Carvalho, J., Silveira, O., & Simões, V. (2017). *Contabilidade Orçamental Pública de acordo com o SNC-AP*. Áreas Editora.
- Carpenter, V., & Feroz, E. (2001). Institutional theory and accounting rule choice: an analysis of four US state governments' decisions to adopt generally accepted accounting principles. *Accounting, Organizations and Society*, 26(7–8), 565–596. [https://doi.org/10.1016/S0361-3682\(00\)00038-6](https://doi.org/10.1016/S0361-3682(00)00038-6)
- Carvalho, J., Costa, T., & Macedo, N. (2008). A contabilidade analítica ou de custos no sector público administrativo. *Revista TOC*, VIII(96), 30–41. http://www.otoc.pt/fotos/downloads/files/1206546789_30a41contabilidade.pdf
- Carvalho, J., Gomes, P., & Fernandes, M. (2012). The Main Determinants of the Use of the Cost Accounting System in Portuguese Local Government. *Financial Accountability and Management*, 28(3), 306–334. <https://doi.org/10.1111/j.1468-0408.2012.00547.x>
- Clarke, P., & Lapsley, I. (2004). Management accounting in the new public sector. *Management Accounting Research*, 15(3), 243–245. <https://doi.org/10.1016/j.mar.2004.06.002>
- Cohen, S., Kaimenaki, E., & Zorgios, Y. (2007). Assessing It As a Key Success Factor for Accrual Accounting Implementation in Greek Municipalities. *Financial Accountability and Management*, 23(1), 91–111. <https://doi.org/10.1111/j.1468-0408.2007.00421.x>

- Collin, S., Tagesson, T., Andersson, A., Cato, J., & Hansson, K. (2009). Explaining the choice of accounting standards in municipal corporations: positive accounting theory and institutional theory as competitive or concurrent theories. *Critical Perspectives on Accounting*, 20(2), 141–174. <https://doi.org/10.1016/j.cpa.2008.09.003>
- Costa, T., & Carvalho, J. (2007). Cost accounting applications in Local Governments: the case of municipal tariff and price setting in the North of Portugal. *Revista Contemporânea de Contabilidade*, 1(7), 11–24.
- Dias, Á., Silva, G., Patuleia, M., & González-Rodríguez, M. (2023). Developing sustainable business models: local knowledge acquisition and tourism lifestyle entrepreneurship. *Journal of Sustainable Tourism*, 31(4), 931–950. <https://doi.org/10.1080/09669582.2020.1835931>
- Dimitrić, M., Škalamera-Alilović, D., & Duhovnik, M. (2016). Public cost and management accounting system implementation and performance: an integrative approach. *International Journal of Public Policy*, 12(3), 190–209. <https://doi.org/10.1504/IJPP.2016.079746>
- Dmitrović-Šaponja, L., & Suljović, E. (2017). Strategic management accounting in the Republic of Serbia. *Economic Research*, 30(1), 1829–1839. <https://doi.org/10.1080/1331677X.2017.1392884>
- Donatella, P., & Tagesson, T. (2021). CFO characteristics and opportunistic accounting choice in public sector organizations. *Journal of Management and Governance*, 25(2), 509–534. <https://doi.org/10.1007/s10997-020-09521-1>
- Drury, C. (2006). *Cost and Management Accounting* (6th edition). Thomson Learning.
- Eriotis, N., Stamatiadis, F., & Vasiliou, D. (2012). Assessing Accrual Accounting Reform in Greek Public Hospitals: an Empirical Investigation. *International Journal of Economic Sciences and Applied Research*, 4(1), 153–183. <https://doi.org/10.2139/ssrn.1978671>
- Fandel, G., Hofmann, C., & Schreck, P. (2020). Editorial “Management accounting and control”. *Journal of Business Economics*, 90(5–6), 675–678. <https://doi.org/10.1007/s11573-020-00997-9>

- Ferlie, E. (2017). The New Public Management and Public Management Studies. In *Oxford Research Encyclopedia of Business and Management*. <https://oxfordre.com/business/view/10.1093/acrefore/9780190224851.001.0001/acrefore-9780190224851-e-129>.
- Fiondella, C., Macchioni, R., Maffei, M., & Spanò, R. (2016). Successful changes in management accounting systems: A healthcare case study. *Accounting Forum*, 40(3), 186–204. <https://doi.org/10.1016/j.accfor.2016.05.004>
- Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- García-Fénix, M., & González-González, J. (2020). Barriers to the implementation of cost-effective in Spanish local authorities. *Spanish Journal of Finance and Accounting*, 1–38. <https://doi.org/10.1080/02102412.2019.1705088>
- Goddard, A., & Simm, A. (2017). Management accounting, performance measurement and strategy in English local authorities. *Public Money and Management*, 37(4), 261–268. <https://doi.org/10.1080/09540962.2017.1295726>
- Gómez-Villegas, M., Brusca, I., & Bergmann, A. (2020). IPSAS in Latin America: innovation, isomorphism or rhetoric? *Public Money and Management*, 40(7), 489–498. <https://doi.org/10.1080/09540962.2020.1769374>
- Gonçalves, S. (2006). *The consolidation of accounts in Public Administration: Theoretical Framework and Empirical Analysis*. Universidade do Minho.
- Gray, S., & Kang, H. (2014). Accounting Transparency and International Standard Setting. In J. Forssbäck & L. Oxelheim (Eds.), *The Oxford Handbook of Economic and Institutional Transparency*. Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199917693.013.0022>
- Grossi, G., Kallio, K.-M., Sargiacomo, M., & Skoog, M. (2020). Accounting, performance management systems and accountability changes in knowledge-intensive public organizations: A literature review and research agenda. *Accounting, Auditing and Accountability Journal*, 33(1), 256–280. <https://doi.org/10.1108/AAAJ-02-2019-3869>
- Grossi, G., & Soverchia, M. (2011). European commission adoption of IPSAS to reform financial reporting. *Abacus*, 47(4), 525–552. <https://doi.org/10.1111/j.1467-6281.2011.00353.x>

- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate Data Analysis* (6th edition). Upper Saddle River.
- Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (T. Oaks (ed.); 2nd Editio). Sage Publications.
- Hamawandy, N., Qader, A., Mohammed, H., Ali, R., & Kareem, F. (2021). Effect of Management Accounting Techniques in Improving the Quality of Financial Reports. *Turkish Online Journal of Qualitative Inquiry*, 12(10), 5338–5348.
- Henseler, J., Ringle, C., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Höglund, L., Caicedo, M., Mårtensson, M., & Svårdsten, F. (2021). Strategic management accounting in the public sector context: the case of the Swedish Transport Administration. *Journal of Public Budgeting, Accounting and Financial Management*, 33(4), 468–486. <https://doi.org/10.1108/JPBAFM-12-2019-0180>
- Hopper, T., Tsamenyi, M., Uddin, S., & Wickramasinghe, D. (2009). Management accounting in less developed countries: what is known and needs knowing. *Accounting, Auditing and Accountability Journal*, 22(3), 469–514. <https://doi.org/10.1108/09513570910945697>
- IFAC (2000). Perspectives on Cost Accounting for Government. In *IFAC Public Sector Committee* (Issue September). http://www.fasab.gov/pdf/files/ifac_perspectives.pdf.
- Jarrar, N., & Smith, M. (2014). Innovation in entrepreneurial organisations: a platform for contemporary management change and a value creator. *The British Accounting Review*, 46(1), 60–76.
- Jorge, S. (2003). *Local government accounting in Portugal in comparative international perspective*. University of Birmingham.
- Khodachek, I., & Timoshenko, K. (2018). Russian Central Government Budgeting and Public Sector Reform Discourses: Paradigms, Hybrids, and a “Third Way.” *International Journal of Public Administration*, 41(5–6), 460–477. <https://doi.org/10.1080/01900692.2017.1383417>

- Kuroki, M., & Motokawa, K. (2021). Do non-financial performance and accrual-based cost information affect public sector budgeting? *Journal of Public Budgeting, Accounting and Financial Management*, 34(6), 95–116. <https://doi.org/10.1108/JPBAFM-03-2021-0056>
- Labrador, M., & Olmo, J. (2019). Management accounting innovations for rationalizing the cost of services: the reassessment of cash and accrual accounting. *Public Money and Management*, 39(6), 401–408. <https://doi.org/10.1080/09540962.2019.1583910>
- Lepădatu, G., & Pîrnău, M. (2009). Transparency in financial statements (IAS/IFRS). *European Research Studies Journal*, 12(1), 101–108.
- Lewis, J. (2015). The politics and consequences of performance measurement. *Policy and Society*, 34(1), 1–12. <https://doi.org/10.1016/j.polsoc.2015.03.001>
- Liberato, M., Inna, P., & Serrasqueiro, R. (2024). Constraints and stimuli in the implementation of public accounting reform: systematic literature review and future research agenda reform. *Journal of Accounting and Organizational Change*, 20(3), 560–592. <https://doi.org/10.1108/JAOC-01-2022-0018>
- Lowe, T., & Wilson, R. (2017). Playing the Game of Outcomes-based Performance Management. Is Gamesmanship Inevitable? Evidence from Theory and Practice. *Social Policy and Administration*, 51(7), 981–1001. <https://doi.org/10.1111/spol.12205>
- Lutitsky, I., Žmuk, B., & Dragija, M. (2016). Cost accounting as a possible solution for financial sustainability of Croatian public hospitals. *Croatian Economic Survey*, 18(2), 5–38. <https://doi.org/10.15179/ces.18.2.1>
- Marlina, E., Ardi, H. A., Samsiah, S., Ritonga, K., & Tanjung, A. R. (2020). Strategic costing models as strategic management accounting techniques at private universities in Riau, Indonesia. *International Journal of Financial Research*, 11(1), 274–283. <https://doi.org/10.5430/ijfr.v11n1p274>
- Marques, M. (2018). Public Accounting and IPSAS in Portugal: the Accounting Standardization System for Public Administrations. *Journal of Modern Accounting and Auditing*, 14(4). <https://doi.org/10.17265/1548-6583/2018.04.001>

- Matos, J. (2022). *Management Accounting: the key to quality information at the right time*. Available at www.dinheirovivo.pt.
- Mattei, G., Jorge, S., & Grandis, F. G. (2020). Comparability in IPSASs: Lessons to be Learned for the European Standards. *Accounting in Europe*, 17(2), 158–182. <https://doi.org/10.1080/17449480.2020.1742362>
- Mättö, T., & Sippola, K. (2016). Cost Management in the Public Sector: Legitimation Behaviour and Relevant Decision Making. *Financial Accountability and Management*, 32(2), 179–201. <https://doi.org/10.1111/faam.12085>
- Mohr, Z., Raudla, R., & Douglas, J. (2018). Is Cost Accounting Used with Other NPM Practices? Evidence from European Countries. *Public Performance and Management Review*, 41(4), 696–722. <https://doi.org/10.1080/15309576.2018.1480391>
- Mosoba, M. (2017). Tanzania is an IPSAS implementation success story, having fully adopted accrual-based IPSAS four years ago, but the East African pioneer still faces challenges. *Accounting and Business-Africa Edition*.
- Nuhu, N., Baird, K., & Appuhamilage, A. (2017). The adoption and success of contemporary management accounting practices in the public sector. *Asian Review of Accounting*, 25(1), 106–126. <https://doi.org/10.1108/ARA-02-2016-0017>
- Nunnally, J. (1978). *Psychometric Theory* (2nd ed.). McGraw-Hill.
- OECD & IFAC (2017). *Accrual Practices and Reform Experiences in OECD Countries*. OECD Publishing. <https://doi.org/10.1787/9789264270572-en>
- Ojra, J., Opute, A., & Alsolmi, M. (2021). Strategic management accounting and performance implications: a literature review and research agenda. *Future Business Journal*, 7(1), 1–17. <https://doi.org/10.1186/s43093-021-00109-1>
- Orelli, R., Padovani, E., & Katsikas, E. (2016). NPM Reforms in Napoleonic Countries: A Comparative Study of Management Accounting Innovations in Greek and Italian Municipalities. *International Journal of Public Administration*, 39(10), 778–789. <https://doi.org/10.1080/01900692.2015.1034324>
- Oseifuah, E. (2014). Activity based costing (ABC) in the public sector: benefits and challenges. *Problems and Perspectives in Management*, 12(4), 581–588.

- Oyewo, B., Ajibolade, S., & Obazee, A. (2019). The influence of stakeholders on management accounting practice. *Journal of Sustainable Finance and Investment*, 9(4), 295–324. <https://doi.org/10.1080/20430795.2019.1619336>
- Papiorek, K., & Hiebl, M. (2023). Information systems quality in management accounting and management control effectiveness. *Journal of Accounting and Organizational Change*. <https://doi.org/10.1108/JAOC-09-2022-0148>
- Pavlatos, O., & Paggios, I. (2008). Management accounting practices in the Greek hospitality industry. *Managerial Auditing Journal*, 24(1), 81–98.
- Pedrosa, E. (2013). *Cost accounting in local authorities in the central region of Portugal*. ISCTE Business School.
- Peterson, R. (1994). A Meta-Analysis of Cronbach's Coefficient Alpha. *Journal of Consumer Research*, 21, 381–391.
- Plötz, J. (2022). *Implementation Barriers for Management Accounting in the Public Sector* [Sheffield Hallam University]. <https://doi.org/doi.org/10.7190/shu-thesis-00443>
- Polzer, T., Gårseth-Nesbakk, L., & Adhikari, P. (2019). “Does your walk match your talk?” Analyzing IPSASs diffusion in developing and developed countries. *International Journal of Public Sector Management*, 33(2–3), 117–139. <https://doi.org/10.1108/IJPSM-03-2019-0071>
- Rahman, I., Rahman, N., Azhar, Z., Omar, N., & Said, J. (2015). Management Accounting Best Practices Award for Improving Corruption in Public Sector Agencies. *Procedia Economics and Finance*, 31(15), 503–509. [https://doi.org/10.1016/s2212-5671\(15\)01192-2](https://doi.org/10.1016/s2212-5671(15)01192-2)
- Ringle, C., Wende, S., & Becker, J. (2022). *SmartPLS 4*. Oststeinbek: SmartPLS GmbH. <http://www.smartpls.com>.
- Santos, A. (2017). *Management accounting in Public Administration: a case study* (Master's Thesis). Instituto Superior de Contabilidade e Administração do Porto, Porto.
- Silva, M., Junior, A., Ferreira, M., & Júnior, A. (2022). Conditioning Factors for the Adoption of International Public Sector Accounting Standards - IPSAS. *Journal of Accounting, Management and Governance*, 25(1), 103–122. https://doi.org/10.51341/1984-3925_2022v25n1a6

- Snedecor, G., & Cochran, W. (1989). *Statistical Methods* (8th ed.). Iowa State University Press.
- Speklé, R., & Verbeeten, F. (2014). The use of performance measurement systems in the public sector: Effects on performance. *Management Accounting Research*, 25(2), 131–146. <https://doi.org/10.1016/j.mar.2013.07.004>
- Steccolini, I. (2019). Accounting and the post-new public management: re-considering publicness in accounting research. *Accounting, Auditing and Accountability Journal*, 32(1), 255–279. <https://doi.org/10.1108/AAAJ-03-2018-3423>
- Vale, J., Amaral, J., Leal, C., & Silva, R. (2022). Management Accounting and Control in Higher Education Institutions: A Systematic Literature Review. *Administrative Sciences*, 12(14). <https://doi.org/10.3390/admsci12010014>
- van Helden, J., Adhikari, P., & Kuruppu, C. (2021). Public sector accounting in emerging economies: a review of the papers published in the first decade of Journal of Accounting in Emerging Economies. *Journal of Accounting in Emerging Economies*, 11(5), 776–798. <https://doi.org/10.1108/JAEE-02-2020-0038>
- van Helden, J., & Uddin, S. (2016). Public sector management accounting in emerging economies: A literature review. *Critical Perspectives on Accounting*, 41, 34–62. <https://doi.org/10.1016/j.cpa.2016.01.001>
- Veledar, B., Gadzo, A., & Lalic, S. (2020). Cost and management accounting in budget-funded organizations in Bosnia and Herzegovina. *Interdisciplinary Description of Complex Systems*, 18(2-B), 299–311. <https://doi.org/10.7906/indcs.18.2.16>
- Venieris, G., & Cohen, S. (2004). Accounting Reform in Greek Universities: A Slow Moving Process. *Financial Accountability and Management*, 20(2), 183–204. <https://doi.org/10.1111/j.1468-0408.2004.00192.x>
- Wahab, A., Mohamad, M., & Said, J. (2018). The Implementation of Activity-based Costing in the Accountant General's Department of Malaysia. *Asian Journal of Accounting and Governance*, 9, 63–76. <https://doi.org/10.17576/ajag-2018-09-06>

[This page is intentionally left blank]