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**Risk Management and Management Accounting Control Systems within Public Sector
Organizations: A Systematic Literature Review**

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Risk Management and Management Accounting Control Systems within Public Sector Organizations: A Systematic Literature Review

Abstract

While it is becoming pervasive and unavoidable in every organisation, risk management (RM) interact with control systems in Public Sector Organizations (PSOs). This paper offers a review showing that RM brings multiple perceptions while PSOs design and implement risk-based control systems arbitrarily. This has led to the issue of appropriate integration of RM in overall management accounting and control systems (MACS). The article advocates the possibilities for enhancing the integration of RM and MACS through a comprehensive understanding of the social and institutional drivers for success in PSOs. Future RM studies must permeate into actual practice fostering knowledge of proper integration.

Impact statement

Risk management (RM) supported by an integrated management accounting and control systems (MACS) in public sector organisations (PSOs) may help all levels of governments to meet the growing demands of public service governance, performance management, and accountability. Nevertheless, an awareness of an integrated RM knowledge, culture and processes will provide public service managers and policymakers with practical tools to help the governments to make risk-informed strategic and operational decisions.

Keywords: Risk management, Management accounting, Management control systems, Performance management, Public sector organisations, Literature review.

1. Introduction

Neo-liberal changes in public sector organizations¹ (PSOs) resonate with New Public Management (NPM) reforms and policies (Horton, 2006; Torres and Pina, 2002). Worldwide changes occurred in PSOs through the slogan that the state must not govern the market, but let the market govern the state (Triantafyllou, 2020; Teasdale & Dey, 2019; Harvey, 2005). When NPM began to play constitutive roles in PSOs, it naturally focused on making changes in their management accounting and control systems (MACS) through which risk management (RM), performance and accountability ideas were promoted and implemented (Hood, 1995). Here, MACS played an important role in the allocation and use of resources through systems of close calculations, enhanced budgetary controls, intensified performance management, and eventual delivery of financial and managerial accountability to both the regulatory authorities and citizens. However, this was not enough as many uncertainties in the market became an additional issue to address, especially after the recent financial crises and austerity programs (Bracci, Humphrey, Moll, & Steccolini, 2015; Soin and Collier, 2013). The control and risk management issues have been intensified during COVID-19 pandemic and taken a form of straitjacket of neoliberalism through budgetary responses (see for example, Andrew, Baker, Guthrie, & Martin-Sardesai, 2020; Argento, Kaarbøe, & Vakkuri, 2020). In response, RM was introduced as a new technology to the NPM package to adopt a system to identify a variety of risks and to take proactive actions to combat their effects (Rana, Wickramasinghe, & Bracci, 2019).

While the organisations in the private sector deploy RM ideas towards mitigating the risk in sustaining profitability, PSOs use RM ideas towards ensuring an uninterrupted service delivery against internal and external risks and uphold public accountability (Black, 2005). This has led to the issue of appropriate integration of RM in overall MACS, supporting the PSOs as well as the policy-makers and managers alike (Arena et al., 2017; Bracci et al., 2020; Collier et al., 2006). MACS can be seen as back-end management processes that include all techniques and methods public sector managers use to ensure individual behaviors and decisions are consistent with organizational objectives and strategy. This broader conceptualization of management control can encompass almost everything managers do to acquire, deploy, and manage resources in pursuit of the organization's strategic objectives. Accordingly, the body of the literature related to MACS includes internal control, management control, RM, performance measurement, planning and strategic management (Merchant and Otley, 2006). RM, in that sense, is considered to be an integral part of the overall MACS (Bhimani, 2009; Power et al., 2009), rather than a stand-alone activity. As an overarching concept, RM practices are influenced by, and influence, the organization's overall functioning (Hinna et al., 2018).

This paper focuses on this tension by exploring the role of MACS in the integration of RM within PSOs. It offers a systematic literature review (SLR) of RM, based on which four interrelated questions emerged: What are the perceptions about RM and the relation with MACS? How do PSOs implement RM practices and their link with MACS? What are the drivers for a successful RM implementation? Do MACS play a role in integrating these RM practices? These questions are timely and significant as RM has become crucial in the face of changes occurring in PSOs around the world (e.g. current Covid-19 and recent financial crises) and answer to these questions advocate possibilities to enhance the integration of RM and MACS through a comprehensive understanding of the social and institutional drivers for success in PSOs. Thus, these questions, are significant not only for understanding the state of the art of this literature but also for identifying future RM research avenues.

The paper is structured as follows. Section *two* provides the background of this study. Section

¹ We refer to PSO as the ensemble of central, intermediate/regional and local governments.

three describes the methodology we have adopted. This proceeds to Section *four* where we report on the findings of this review. Section *five* provides a brief discussion and concludes the paper by highlighting practice and policy implications.

2. Risk management in public sector organisations

As a concept, RM has become pervasive or ubiquitous (Hood et al., 1992). Initially, it emerged as calculative tool within specific fields of operations such as insurance and banking industry. Later, it has become a tool of governance and accountability (Mikes, 2011; Spira and Page, 2003; Power, 2007) making these ideas widespread and much more influential. Consequently, there has been an ambiguity on the definition of risk (Power, 2007) and, in turn, risk became linked to uncertainty leading to the generation of everyday actions in PSOs, as some scholars have commented. For example, Douglas and Wildavsky (1982, p. 49) wondered “*How can we know the risks we face?*” and argue that no, we cannot but we must act as if we do because risk management is a social process. As Flemig et al. (2016) reported, risk issues must be addressed by PSOs in conjunction with states of uncertainty being emerged. This is a sensible move as public service delivery can be hampered by the social, political and institutional issues mentioned above. It is this context in which the use of MACS has become important where risk can be managed through mitigating uncertainty (Power (2007). The MACS tools are useful as the boundaries between different types of risk are becoming blurred – i.e., internal and external sources of risk.

Although there is a need of integrating RM in business processes within PSOs, (Rana et al. 2019; FRC, 2005), there is little evidence that it has been occurred in practice. Researchers have emphasized that RM must be integrated in the formulation of organizational goals and objectives (Power, 2009), in MACS to reshape their current budgeting and accountability practices (Hutter and Power, 2005), and in their overall business processes to ensure that the organisational activities there are risk-laden (FRC, 2005). In public sector, risk is usually related to technocratic/bureaucratic approach to risk (Power, 2007; Brown and Osborne, 2013; Renn, 2008 and Brown and Osborne 2013). However, it has been observed that government regulators have given only general guides as to how this integration must be achieved or how MACS can be enhanced (Black, 2005). Consequently, many PSOs have adopted some superficial and diverse measures leaving space for discretion and disconnection between organisational systems (Kolisovas, and Andrius, 2011). As Bhimani (2009) highlighted, little is known about the extent of how RM can be integrated and the roles that MACS can play in the organisation wide integration. In other words, more works are needed to develop knowledge on how RM is perceived, implemented and integrated with the MACS and what factors that may impact on the integration and implementation of the RM. If such developments occurred, then there will be possibilities of managing risk in PSOs in times of crisis.

3. Methodology

The methodology we adopted was a systematic literature review (SLR), which is considered to be an appropriate and legitimate methodology for this study as it allows a clear process of selection (Wang et al. 2018) and minimizes the bias associated with single studies and non-systematic reviews (Dumay et al., 2016). Some recent reviews in streams of accounting research such as integrated reporting (Dumay et al., 2016), consolidated financial statements (Santis et al., 2018), intellectual capital (Cuozzo et al., 2017) have benefitted from this methodology. We have built this study’s research methods on their experience.

In our approach, we had four systematic steps to follow. *Firstly*, we identified the research questions shown at the start of the paper. *Secondly*, we selected suitable databases and defined the required

search criteria. For this purpose, the Scopus database was used, and the following keywords were used as search criteria - risk management and management accounting, risk management and management control. Consequently, we limited our research to the areas of “Business, Management and Accounting and Social Sciences” from which we found 98 articles. The term "public sector" or "public administration" was not used in the search string because it limits the results. As often the term "public sector" or "public administration" is not used in the abstract, title and keywords. So we chose not to include the "public sector" or "public administration" in the search string and we performed a manual search, by reading all abstract, that excludes all papers that do not have to do with the public. Some works that do not deal directly with the public sector have been included, these works are often theoretical and give generic indications with respect to RM that could also concern the public sector. We have undertaken a preliminary analysis by reading the abstracts and keywords of these articles to identify the papers that primarily dealt with the issues of RM only in PSOs. This allowed us to exclude the papers outside our remit. Moreover, we executed a google scholar search to grab any missing publications and added some additional papers and monographs (like Power, 2007 and Renn,1998), if they were deemed useful after careful reading. *Thirdly*, we selected and evaluated the papers based on structural categories (see below) under which relevant themes were identified and pertinent interpretation was made. *Finally*, 38 papers were selected for the analysis from Scopus.

The researchers read the selected papers separately and categorized by respective researchers to pinpoint the state of the art of this stream of research. This proceeded to develop a coding scheme based on the following criteria: scope of the study, main issues analyzed and key findings. We then read the papers individually, coded them for possible research themes regarding MACS and risk management. While two authors were involved in this main process, the proposed outcomes were then discussed with the other two authors not only for finalizing a common scheme of analysis but also for enhancing reliability. To the end, the analysis was completed followed by a discussion with some directions for further research.

4. Analysis of the findings

Our analysis shows that RM and MACS are much discussed in the literature, but the four research questions we posed at the start have been unexplored. The table in Appendix 1 summarizes the outcome of our review - a road map for reporting on the findings and addressing the research questions.

4.1 RM perception and MACS

RM perception and its links with MACS can be judged by exploring the definition(s) of the term risk. Research on risk in PSOs has hardly defined the term neatly for a wider acceptance (Renn, 1998). Consequentially, several definitions are given by scholars. Renn (1998) sees risk as being often associated with the possibility that an undesirable state of reality which may occur due to natural events or human activities. Power, (2007; p. 25) affirms that “Risk and RM do not exist before practice but are themselves part of the organization of uncertainty (...) RM emerged from generic relationships between organizing and uncertainty handling. Here, uncertainty is considered as a risk when it becomes an “object” for the management process (Power, 2007). Accordingly, RM becomes a reality within an organization through the actors’ engagement with the strategies for institutionalizing or de-institutionalizing of particular objects of knowledge (Power, 2007). In this sense, it is possible to make a first reflection about the

perception from the lenses of the RM implementation issues. RM implementations could be interpreted and perceived in multiple forms, and differently, in different organizations and across varying organizational levels (Woods, 2009). This is to satisfy stakeholders at different organisational and managerial levels while key players at the frontiers of governance are influenced differently across different layers of governance (Christopher and Sarens, 2018). Therefore, as Coetzee (2016) points out that, there can be different views of RM across different organizational levels. In particular, prior research finds different views between senior management and internal audit staff. In this matter, Silva and Fernandes (2019) highlight that the perception of risk management varies from the areas of administration and operation area. For example, the authors report that health area managers exhibit greater expertise in the use of Enterprise Risk Management (ERM) than that of the administrative area managers.

Researchers have also found how various actors construct differential views about risk in their social and institutional contexts. Lueg and Knapik (2016) report that RM is built on socially constructed facts. This construction can be both subjective (actor-based) and objective (technical-based). In this way, according to some authors, RM can be a pragmatic constructivist view of reality. Hence, when managing risk, calculations must be used in conjunction with a judgment about the consequences and social implications of those calculations. Therefore, in managing risk, MACS and RM require a turn from the calculative perspective on risk to socially constructive (political, cultural and institutional) perspectives (Mikes, 2011; Power, 2007). When this happens, as Power (2007; p. 20) observes, the social construction of risk must engage with the social construction of MACS to govern risk. However, ERM has developed frameworks which carry certain limitations regarding the socially constructive perception of risk. As Williamson (2007) remarks, these limitations can be overcome by considering the socio-political dimensions of risk identification and analysis. Otherwise, the underlying rationale of RM may be distorted and captured by technical-based perceptions. This rationale does not essentially rest on whether risk management can fulfil its functionalistic promise by managing risk with a standardized and calculative model (Huber, 2009), seeking legitimacy (Bhimani, 2009) and managing reputation risk (Power et al., 2009). Moreover, we found that the literature identified various types of MACS. The Levers of Control (LOC) framework (Simons, 1995) is one example. Control could be technical but also a social one, i.e. boundary and belief control systems (Coetzee, 2016; Huber, 2009; Lueg and Knapik, 2016; Power, 2007, Silva and Fernandes, 2019; Tessier and Otley, 2012; Woods, 2009). The use of a standardized or technical model may contradict with such aspects of social and political controls. This theme is yet to be investigated in the extant RM literature.

4.2 RM implementation and MACS

The RM implementation issues vary. Vinnari and Skærbæk (2014) report that a formal structure of risk management can destabilize existing practices. The authors argue that, at the operational level, standardized risk management solutions can clash with the “professional conceptions” of managers. Consequently, PSOs could adopt a vernacular approach to managing risk rather than adapting to the formalized style in this regard. In this case, risks are largely managed outside the apparatus of formal risk management systems (Carlsson-Wall et al., 2019). However, RM seems to fulfil the requirement of control activities by enhancing these activities, not by changing the MACS (Rana et al. 2019, Huber and Scheytt, 2013). The tension between the vernacular and formal approaches to managing risk is not static. Over time, this tension turns risk management into a hybridized mode of interaction (Carlsson-Wall et

al., 2019).

However, in other context, organizations could also adopt a silo approach rather than a comprehensive or enterprise-wide approach. This happens because there can be lack of immediate benefits from the implementation of RM in all business areas. Likewise, the package advocated by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) for comprehensive ERM practices may be somewhat unrealistic for local branch/division managers as its implementation could be too cumbersome, laborious, and expensive (Oulasvirta and Anttiroiko, 2017). A formal approach may be not the best solution for every PSOs, as Flemig et al. (2016) emphasize the importance of adopting soft rather than a hard approach to RM as it can enhance learning and innovations with the organisations. According to the authors, a hard approach encompasses technocratic or rule-based or regulation-driven RM practices.

The adoption and implementation of RM and MACS also relate to the ways in which the control approach being diffused in PSOs. As Adler and Borys (1996) advocated, there can be two elements in a typology of control approach: coercive and enabling control. Coercive control is characterized by centralized policies and pre-designed procedures that promote a stereotypical top-down and commanding type of control (Ahrens and Chapman, 2004). This type may constraint the action of the actors involved which may not support productive processes (Free, 2007) but encourages reluctant compliance (Adler and Borys, 1996). Enabling control, conversely, is characterized by a flexible and repair approach with internal and global transparency (Adler and Borys, 1996; Ahrens and Chapman, 2004). As enabling control could reinforce and promote more proactive work and in turn, enhances learning and forward planning, it is performance-orientated (Ahrens and Chapman, 2004). PSOs are often administered through coercive control leading MACS to be more calculative and compliance-focused rather than performance-oriented (Gong and Subramaniam, 2018). However, in PSOs, the reference to policies, rules, regulations, and frameworks have enormous influence on individual and organisational behavior. This would result in a “rational” system of management control system that may reduce individual discretion as the solutions that are predetermined by rules and regulations. However, RM requires more flexibility for managers in decision making concerning managing uncertainty at the process level which is merely beyond the management of results (Hinna et al., 2018).

In this context, as observed by Gong and Subramaniam (2018), the greater the use of coercive approach, the bigger the compliance-oriented RM culture is. This means the opposite is also plausible: the greater the use of an enabling approach, the greater the performance-oriented RM culture will be. However, financial performance combined with a logic of compliance continues to be dominant in PSOs as they strengthen the tenets of Hood's (2002) ‘blame-game’ leaving little space for risk-takers or innovators and opportunities for learning from mistakes. Berry et al., (2005) argue that when management control becomes tighter, decision-makers have limited autonomy to tackle risk matters, particularly in turbulent and uncertain times. Increasing managers’ awareness about risks could allow them to be more optimistic towards adopting challenging goals (Capaldo et al., 2018). To enhance performance risk culture, policymakers and organizations have to adopt an ongoing and flexible approach rather than just reflecting on a short-term or fixed-term horizon (Flemig et al., 2016; Rana et al., 2019) by striking a balance between process and performance principles (Barrett, 2014) to strengthening the level of accountability and promoting a degree of efficiency.

4.3 RM and successful implementation drivers

Various researchers tried to understand the variables that are contingent upon the implementation of a risk control system. The contingent approach tells us that, even though basic structures of risk management are common across large organizations, specific contingencies can emerge and mobilize further interdependencies. This is relevant as RM becomes a reality within the organization through practice in which RM does not exist before but emerges as part of the organizational of uncertainty (Power, 2007). In this sense, we need to explore the drivers of implementation of RM and how RM interact with existing managerial control systems by investigating how the effects of accounting technology and regulation put pressure on the management of risks (Subramaniam et al., 2011). This section summarizes the various drivers/criteria found in the selected papers analyzed that could impact RM success in public sector.

Woods (2009) adopts a contingency theory approach in her study on risk management in a public institutional context. She explores RM as a dimension of corporate governance which further highlights the interdependencies between the two. She specifies that RM is contingent upon three core variables: central government policies, information and communication technology (ICT) and organizational size. Central government policy affects two main reasons. Firstly, government policy drives many of the strategic objectives of PSOs, and performance against objectives is the focus of the RM system. Secondly, the central government determines the resources available at the organisational level and therefore implicitly influences the scope to invest in management control systems. ICT directly influences RM because the specialist technology/software is integral to the risk control process. It provides the mechanism for the collection and collation of both performance and risk-related information. While regarding the size, the authors affirmed that within larger organisations, there is a tendency towards formalized/ standardized control systems. Subramaniam et al. (2011) indicate that there are significant associations between the perceived business uncertainty and the level of RM formalization, as well as between the level of RM formalization and the magnitude of RM.

The magnitude of RM is defined as nature (simple to complex) and extent (the quantity and frequency of use) of RM methods. Therefore, the authors report that the use of external RM consultants have durable impact on the magnitude of RM methods adopted. Silva and Fernandes (2019) point out that the kind of strategy and the organizational structure impact on RM and control process. Organizational structure is intended as a formal distribution of roles and tasks. In particular, the authors, considering the classification of Miles and Snows (1978), (i.e. defenders, analyzers, prospectors and reactors, hypnotize), argue that strategy boosts managers willingness to adopt certain practices such as formal or informal RM, centralization or absence of RM and how risks are perceived. Organizational structure, according to the authors, contributes to reducing problems inherent to the professional bureaucracy. In the case analyzed, classified as an analyzer, the authors highlight how the practice of RM exists as a response to its strategic stance. Hossein Nezhad Nedaei et al. (2015) identify three contingent elements that impact on RM and management control sophistication, namely: decentralization, size, and enterprise resource planning (ERP) systems. According to the authors, high decentralization, size, and high use of ERM impact positively on the use of sophisticated RM. Collier (2009) report that an organization's appetite is a fundamental driver for successful RM control. Risk appetite is a statement that considers the levels of risk that management deems acceptable. It helps taking or to avoid the risk that is fundamental to shape its strategy, sets targets and defines an approach to control. Palermo (2014) reveals how the use of RM is dependent on relational skills, knowledge of business activities and professional experience. Risk managers can be a source of innovation and collaboration in public services when they adopt a 'soft' relational approach to risk management, rather than a technocratic one. Accordingly, Brown and Osborne (2013) highlight that few empirical studies have attempted to

understand the linkages between the RM approach and public sector managers' willingness to innovate, the authors analyze the link between innovation and risk management approach by proposing a holistic framework.

4.4 Integration RM with MACS

In recent years, there has been a paradigm shift in how organizations view risk management. This is a trend towards adopting a holistic view of RM as opposed to a silo-based one (Mahama et al., 2020). Therefore, there are no boundaries for RM within the organization process (Power, 2007). RM could occupy the whole organization by moving away from being an issue of narrow concern about finance or accounting to an issue of a wider concern about management control (Soin and Collier, 2013) and strategy (Silva and Fernandes, 2019). The diffusion, in practice, of the ERM frameworks like COSO (2007, 2017) and ISO: 31000 are examples of integrated RM potentiality. ERM can integrate risk with MACS to help organizations to connect RM with business intelligence and analytics, performance measurement, strategic objectives, and management control systems (Mahama et al., 2020). In this sense, the risk is being enrolled with a new focus of performance (Power, 2007). This thinking helps organizations improve business intelligence and analytics (Mahama et al., 2020), program and process performance (Barrett, 2014; Hood and Smith, 2013) and accountability systems (Palermo, 2014). In doing so, ERM characteristics and models stress that RM needs to be integrated and/or aligned with all other organizational processes and functions.

MACS could play a central role in the implementation of RM considering that there are no boundaries between risk-taking and organizational functioning in contemporary PSOs if risk management is embedded in the MACS. Furthermore, RM is fundamental to enhancing the quality of MACS as it could help to convey organisational and institutional legitimacy (Bhimani, 2009) in terms of transparency and accountability. Moreover, as it was mentioned before, RM contributes to a shift from a legalistic compliance focus to a greater accountability focus that emphasizes performance measurement and strategy formulation (Rana et al., 2019). Risk management could help organizations to better accomplish their objectives effectively as MACS may facilitate organizations to identify and mitigate material threats/risks (Rana et al., 2019). Even if the risk is associated, in an unconscious manner, with a negative event, both negative and positive outcomes are to be considered. Therefore, a close link to the organization's objectives is established (Huber, 2009) as appropriate risk management ensures, as far as possible, that organizational objectives are achieved (Tekathen and Dechow, 2013; COSO, 2007). This is because, MACS play a fundamental role in reducing and overcoming uncertainties (Gray et al., 1995). Therefore, risk and uncertainty are strictly correlated (Power, 2007). If risk can be made operational, through the logic of calculation, in explaining and implementing policy choices, uncertainty cannot (Froud, 2003). Their distinction is based on the possibility to quantify the output through probability computations.

Empirical evidence regarding the RM integration with MACS are limited in the existing literature. Hood and Smith (2013) showed that risk management thinking contributes to achieving business objectives of PSOs including strategic ones, to better project success, to more effective use of resources and to reduce fraud. Héroux and Roussy (2020) show how compliance with governance regulation can help PSOs enhance business strategy with better risk management, control, and accountability. The authors in analyzing three cases pointed out how organizations went beyond compliance in terms of risk management to adopt a wide-ranging risk-based approach. In doing so, organizations elected to deviate

from red-tapism and box-checking exercises with the approach that merely compliance with regulation cannot accrue actual benefits. Rana et al. (2019) highlight that risk management and management control reform in Australia failed to enhance performance measurement practices due to the dominance of compliance and regulatory accountability and lack of integration between control and risk management.

Despite the importance of integrated risk management, the existing literature shows that issues of risk management are not well integrated at the MACS level, thus a radical cultural shift is still required in PSOs (Rana et al., 2019, ANAO, 2017). However, risk dominant MACS is tended to be more focused on the financial risk with more compliance/regulatory focus (Rana et al., 2019), probably this is due to the recent budget pressure and austerity measures that characterized PSOs in various contexts resulting in tight financial controls aiming at 'breaking the budget' (Bracci et al., 2015). The lack of integrating risk management with MACS and the excessive focus on compliance and regulatory requirements may result in the formal and standardized process of RM implementation without befitting from MACS being integrated in the organisational context. Greater social interaction could be crucial in the process of developing a culture of integrating risk management with MACS (Hinna et al., 2018). Social interaction, defined as a collaboration among organizational actors, both risk management experts and those who are not experts, to help PSOs by instilling risk-aware cultural values, problematizing risk management, and inculcating perseverance in public service managers in visualizing more clearly the impacts of their actions and responsibilities. Accordingly, there is a need for a deliberate effort to entice civil society-based organizations to help the government identify and alert the public to possible risks (Halachmi, 2005). Hence, integrating RM within PSOs requires complex reflection concerning the combination of subjective and technical issues through constructive conflict/dialectical management (Lueg and Knapik, 2016).

5. Discussion and conclusion

Concerning RM's integration with the MACS in PSOs, we asked four questions relating the issues of perception, implementation, integration, and drivers for RM success. Our SLR reveals a concise but a deeper understanding of what the state-of-the-art knowledge of RM in PSOs in the existing literature. Before concluding this review study, we shall quickly reflect on the key arguments and their implications on PSOs, managers working in PSOs, and RM policymakers.

Perception about RM is a cornerstone in developing a holistic approach to its integration in MACS. As we discussed, perceptions about RM have been fragmented. One salient idea was that RM is a practice emanated from organizational uncertainties rather than a well-defined concept about what it is. In other words, individuals and organizations do certain things about uncertainty as it emerges. In that sense, it is a social construction leaving space for organizations to practice what they can and what they want. Consequently, many PSOs would face this social reality. Beyond this, invariably, this social construction is shaped by the socio-political context in which such practices operate and evolve over time. This is understandable as PSOs are driven by social, political, and institutional motives of the government and the internal and external economic landscape produced by these motives.

The fragmented nature of RM's perception leads to diverse implementations of RM in PSOs. There is no agreement whether RM must be embedded in a formal organizational configuration or managers must take a vernacular approach to exercise their discretion. Consequently, it is not clear whether existing systems must be expanded or change to accommodate RM-based practices. It is also debatable whether these organizations must adopt a silo approach with a narrow mindset or a

comprehensive approach with a holistic view to enact innovative and collaborative actions and to take advantage of the uncertainties which might emerge at any point of time. Lastly, current research contemplates whether they must maintain their coercive style of hierarchy within a strict regulatory environment or whether they must depart from this status quo to promote an enabling style.

This understanding is important to comprehend the significance of integrating RM through MACS. While researchers recognize that a holistic approach can be instrumental in this regard, they also view that there is no formulae or set boundary in here, both conceptually and operationally. Nevertheless, many scholars realize that ERM is an important way forward as the attributes of MACS as well as the features of integration are well embedded in these frameworks or packages. It is thus a matter of remaking ERM projects risk-based whereby the opportunities of detections, rather the traditions of directions, can be explored and established. It has been emphasized that, in a socially constructivist way, PSOs can be more accountable for processes and performances than being mere compliance oriented. However, this RM and MACS integration agenda is, sadly, far from being satisfactory, as researchers show.

Hence, accounting and public management researchers' attempt at exploring the drivers of integrated RM and its success can be a useful starting point to see how this can be practically materialized. Advances in contingency theory-based findings seem useful in this regard where researchers gage how MACS are contingent upon various factors such as technology, environment, resource availability, and, of course, governmental regulatory environment. Moreover, the understanding about the relationships between the successes in RM implementations and the practices of performance measurements, state of strategy formulations and implementations, the services of consultants, the degree of organizational risk appetite, quality of skills and professional expertise, and, of course, the size of the organization, are useful for embarking on this RM integration agenda. In short, integration is about how RM is effective across relevant internal and external factors.

To summarize the arguments advanced in this article, we conclude that RM is a concept of integration rather than a separated function to maintain. A separation of RM from other organizational functions can permeate mere ceremonial practices such as box-ticking, form-filling, and regular bureaucratic administrative requirements. In contrast, RM integration can be an enabling approach to constantly capture the emerging and unexpected uncertainties being generated from both internal and external sources and to translate these uncertainties into everyday practices in an around the overall organizational landscape. MACS would then act as a system of mediating instruments – mediating between people and strategic goals with risk-based practices.

This understanding has implications for public service managers and policymakers. They can identify the institutional factors and drivers in integrating MACS with RM. This identification will be a useful starting point for embarking on such integrating attempts. Moreover, understanding the relationships between the RM and MACS will lead to designing of effective performance measurements and to dealing with the issues of strategy formulations and their implementations. In short, this integrated idea will make RM embedded in other organisational processes including management control systems and make them effective across PSOs.

In understanding the role of MACS in the integration of RM within PSOs, this study evaluated current knowledge through an SLR approach. In doing so, it has focused on selective studies and their experiences from various contexts. Undertaking in-depth case studies in PSOs in various international contexts is probably be more effective for developing new knowledge on globalized trends and making a greater impact. Actual stories of successful design and implementation of integrated RM and MACS

would seem to have a greater role to play to address the contemporary needs of PSOs and case/field study research can fill this gap. Future research can focus on how the integration of RM and MACS can increase resilience in PSOs. To this end, the COVID-19 experience illustrated the need for RM across government organisations and to better prepare for future crisis exploring the implications of emerging technologies of big data, predictive analytics, machine learning, blockchain and visualization tools on the effective integration and implementation of RM and MACS would offer vital theoretical and practical knowledge.

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<i>Studies</i>	<i>RM's perception and MACS</i>	<i>RM implementation and MACS</i>	<i>Integration RM within organization</i>	<i>RM, MACS and successful drivers</i>	<i>Research context</i>
Power, 2007	X		X		UK
Woods, 2009	X		X		UK
Coetzee, 2016	X				South Africa
Silva and Fernandes, 2019	X			X	Brazil
Lueg and Knapik, 2016	X		X		Not specified
Huber, 2009	X				UK-Europe
Christopher and Sarens, 2018	X				Australia
Vinnari and Skærbæk, 2014		X			Finland
Carlsson-Wall et al., 2019		X			Sweden
Rana et al. 2019		X			Australia
Huber and Scheytt, 2013		X			Not specified
Oulasvirta and Anttiroiko, 2017		X			Finland
Gong and Subramaniam, 2018		X			Australia
Hinna et al., 2018		X	X		Italy
Power et al., (2009)		X			UK
Capaldo et al., 2018		X			Italy
Flemig et al., 2016		X			Not specified
Soin and Collier, 2013			X		Not specified
Barrett AO, 2014			X		Australia
Mahama et al. 2020			X		Not specified
Hood and Smith, 2013			X		
Bhimani, 2009			X		Not specified
Palermo, 2014			X		UK
Héroux and Roussy, 2020			X		Canada
Subramaniam et al., 2011				X	UK
Brown and Osborne, 2013				X	Not specified
Hossein Nezhad Nedaei et al., 2015				X	Not specified

