ISSN 1648-2603 (print)
ISSN 2029-2872 (online)

VIEŠOJI POLITIKA IR ADMINISTRAVIMAS
PUBLIC POLICY AND ADMINISTRATION
2025, T 24, Nr. 3/2025, Vol. 24, Nr. 3

A COLLABORATIVE APPROACH TO PERFORMANCE MANAGEMENT: A RESPONSE TO COMPLEXITY CHALLENGES

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https://doi.org/10.5755/j01.ppaa.24.3.41560

Abstract. *Complexity is a significant challenge for public organizations' management systems. Based on an extensive literature review, an on-line survey of Lithuanian public servants in strategic management positions, and statistical modelling, this exploratory survey aims to assess whether a performance management system that embraces mechanisms for collaboration affects an organization's capacity to deal with complex policy problems. We suggest that mechanisms for collaboration – namely, collaborative policy dialogues, reflexive performance measurement, and joint learning forums – enable organizations to better understand complex policy problems, detect emergencies, and develop innovative solutions to address them. The study found that based on the views of experts an organization's capacity to deal with complex policy problems increased when mechanisms for collaboration are governed by its performance management system.*

Keywords: *performance management, collaborative management, complexity, complex policy problems, mechanisms for collaboration.*

Reikšminiai *žodžiai***:** *veiklos rezultatų valdymas, bendradarbiavimu grįstas valdymas, kompleksiškumas, kompleksinės viešosios politikos problemos, viešasis valdymas, bendradarbiavimo mechanizmai.*

Introduction

Modern organizations face challenges created by complexity that cannot be resolved by relying on previous experience and ready-made solutions (Van Dooren 2011; Boulton, Allen, and Bowman 2015, Tõnurist and Hanson 2020). Although the complexity has become a topical issue in the scientific literature, strategic management practices in public sector mostly remain unchanged (Pasha and Poister 2017; Van Dooren 2011; Stacey, Griffin, and Shaw 2010; Boulton, Allen, and Bowman 2015; Capano and Woo 2017; Eppel 2017). Most of public management systems were designed to operate in a stable environment and grounded on rationale management ideas by assuming that the world is fully controllable and predictable (Boulton, Allen, and Bowman 2015; Head and Alford 2008; Frederickson and Smith 2003; Stacey, Griffin,

and Shaw 2010). Here the emphasis is placed on comprehensive planning and control, efficiency-oriented instrumental rationality, and specialization. Prevailing management systems in most cases fail to address the complexity and offer one-dimensional solutions to complex problems (Moynihan 2005; Van Dooren 2011; Christensen and Lagreid 2007; Osborne 2010). Choi and Moynihan (2019) asserted that "performance systems typically reinforce agency goals, but are less adept at encouraging the solving of wicked problems that no single agency has complete responsibility for". There is wide recognition among scholars in the field of public management that, in the context of complexity, governmental organizations have to adopt new strategies in policy making (Eppel 2017; Snowden and Boone 2007).

A gap remains in the public management literature with regard to the question of whether, and if so how, performance management enables governmental organizations to deal with complexity. Some authors have argued (Moynihan 2005; Van Dooren 2011) that traditional performance management systems, which rely on logical sequencing, pre-determined cause-effect relations, and are limited to internal actors, were designed to operate in stable environments, and are not effective in the context of ever-growing complexity. Although researchers draw attention to the need to rethink the underlying assumptions of traditional performance management systems, they provide little guidance on the needed improvements. Thus, there is no systematic knowledge how the performance management system should be redesign in order to enable public organizations to cope with complex policy problems. This study seeks to address this gap by linking performance management with a collaborative approach. We focus on performance management as 'a system that generates performance information through strategic planning and performance measurement routines and that connects this information to decision venues, where, ideally, the information influences a range of possible decisions' (Moynihan 2009).

While there is yet no fully-fledged theory of complexity for public management, we employ the theory of collaborative management in the search for new ways of handling complexity using the performance management system. A collaborative approach is selected as the promising framework to deal with complexity (Bryson, Crosby and Stone 2006; Arganof and McGuire 2003), whereas it is premised on the idea of multiple stakeholder engagement into problem-solving and suggests that complex policy problems could be addressed jointly. We attempt to fuse performance management and collaboration by arguing that an organization's capacity to deal with complex policy problems is increased when its performance management system is governed by mechanisms for collaboration. The concept of mechanisms for collaboration is introduced with regard to the structuration theory, which make the linkage between collaboration and performance management.

The purpose of this exploratory questionnaire survey was to assess whether a performance management system that embraces mechanisms for collaboration may affect an organization's capacity to deal with complex policy problems. We expected that findings would enrich the understanding how to redesign performance management systems and contribute to the theoretical body of knowledge of complexity in the field of public management.

Public servants in strategic management positions were asked to complete an online survey comprised of original questions and established items that assessed their views on concepts such as performance management characteristics, collaboration, governing structures, and complexity. Partial least squares structural equation modelling (PLS-SEM) was employed to assess the theoretical framework and moderating effects of complexity at an empirical level.

This paper begins by explaining the growing importance of complexity in public management, and summarizing the main characteristics of complex systems. A logical sequencing of the construction of the theoretical model is presented in the literature review section. The most pressing challenges imposed by complexity and performance management systems' failures in dealing with them are discussed, after which we discuss potential benefits of collaboration to deal with complexity. Afterward we highlight features of performance management that support a collaborative approach and discern mechanisms for collaboration governed through a performance management system. Then a theoretical model that links

performance management with collaboration and embraces mechanisms for collaboration is presented. The Results and discussion section presents the results of the exploratory questionnaire survey and interpretation of results. The final section provides conclusions.

Literature review

We begin by explaining the importance of addressing complexity in public policy and management. Then, drawing on the literature review findings, we explicate the logical sequencing of the preparation of theoretical model. First, we discern the main governance challenges in the context of complexity. Second, we introduce the concept of collaborative management arguing that complexity could be effectively addressed through a collaborative approach by embracing diverse perspectives in problem solving and employing the process of consensus-building. Third, we discuss what features of performance management are needed to embrace the collaborative approach.

Addressing complexity in public policy and management

The growing attention being given to complexity in public management (Stacey, Griffin, and Shaw 2010; Kurtz and Snowden 2003; Boulton, Allen, and Bowman 2015; Bourgon 2011; Cairney and Geyer 2017; Eppel and Rhodes 2018) was led by the broader perception that major policy problems are multidimensional and difficult to delineate in a linear manner (Bourgon 2011; Boulton, Allen, and Bowman 2015). Changing perceptions of the nature of policy problems were triggered by the spread of complexity theory across different fields of scholarship. The evolution of complexity theory and its insights about social systems increased its relevance for the study of public management. The explicit use of complexity theory concepts has been observed for explaining how government organizations behave, and how governments could address emergent issues and design better policy programmes (Eppel and Rhodes 2018).

The theory of complexity is usually described as interdisciplinary (Cairney 2012; Duit and Galaz 2008), and offers a framework that many academic disciplines use to explain key processes. Snowden and Boone (2007) accurately noted 'complexity is more a way of thinking about the world than a new way of working with mathematical models'. Some authors (Cairney and Geyer 2017) have claimed that complexity theory serves to bridge academic and practitioners' perspectives by offering pragmatic answers to complexity challenges related to policymaking.

Drawing on Bourgon (2011), Boulton, Allen, and Bowman (2015), Eppel and Rhodes (2018), Eppel (2017), Snowden and Bone (2007), Klijn (2008), Cairney and Geyer (2017), we define complex policy problems as those involving multiple causes, characterized by non-linear and synergistic interconnections, path dependence, and constant co-evolution. These problems are systemic in nature and poorly predictable, requiring a holistic approach and innovative solutions. This definition incorporates core characteristics of complex systems and aligns with key tenets of complexity theory regarding how such problems should be addressed. While complex policy problems share foundational traits with wicked problems (Alford and Head 2017), we use the former term to better capture the dynamics and interdependencies emphasized in complexity theory. This enables a more structured understanding of the nature of change.

Complexity thinking suggests that the future is determined by the patterns that have emerged in the past interacting with new emergent events. Thus, although complex systems are path-dependent, they are poorly predictable because circumstances and the system itself change over time. We argue that complexity thinking should be embraced when rethinking traditional management systems in governmental organizations.

The main governance challenges in the context of complexity

Eppel (2017) argued that complexity thinking is incompatible with both scientific traditions in public administration and rational decision making. While complex system thinking requires consideration of the dynamic system's whole, scientific tradition focuses on its constituent parts. Similarly, it confronts traditional theories' decision making processes, which presume that decisions are the result of a logical

sequence of steps from problem analysis and the selected 'best' solution, where interventions and their causes are both linear and predictable. In short, a linear cause-and-effect approach and straightforward sequencing do not describe the complex context.

Performance management systems were developed to run in a stable environment and felt short to effectively address complexity challenges (Noordegraaf and Abma 2003; Moynihan et al. 2011). The predominant performance management systems are grounded on the rational approach, which restricts possibilities to embrace a holistic view in order to comprehend complex policy problems (Capano and Woo 2017; Eppel 2017; Sanderson 2009). Boulton, Allen, and Bowman (2015) argued that traditional approach to strategy making confronts with complexity thinking because heavily relies on prescribed sequence of analysis and focuses mostly on past experience and events. Some authors have argued that formal strategic planning fits well only in stable and predictable environments (Fredrickson and Iaquinto 1989; Mintzberg 1994; Pasha and Poister 2017). Osborne (2010) added to the discussion that rational comprehensive planning is focused on intraorganizational knowledge.

Complexity thinking also challenges efficiency-oriented instrumental logic which is deeply ingrained into performance management systems (Bao, Wang, Larsen, and Morgan 2013; Dong 2015). The notion of 'managing for results' was firmly embedded within management thinking, which means that the nature of change is predictable and controllable by setting out a clear program logic (Head and Alford 2008). On the whole management systems were designed with a notion that a reality can be determined and managers could clearly define causal relationships between goals and deliverables. Thus, this approach do not leave enough of room for uncertainty and discussion.

Eppel (2017) argued that studies in the field of public administration relied on the underlying assumption that managers are capable of reflecting internally on their experiences and recognizing patterns that enable them to grasp changes in the environment. However, emergence produces new levels of order that do not necessarily fit with previous knowledge, and instead require to make sense of ambiguous information and create innovative solutions (Van Dooren 2011; Boulton, Allen, and Bowman 2015).

Meaning-making routines are essential to facilitate deliberations and bring together of multiple views (Boulton, Allen, and Bowman 2015; Butler and Allen 2008). On the contrary, prevailing performance measurement systems are static and inward-oriented in terms of sharing information, rather than being dynamic, responsive to changing patterns, and representing actual performance (Van Dooren 2011). Van Dooren (2011) asserted that 'performance management is mainly about sense-making' in order to deal with ambiguity effectively. However, insufficient purposeful use of performance information for learning and performance improvement (Kroll 2015; Moynihan and Pandey 2010; Van Dooren, Bouckaert and Halligan 2015) signals that performance management systems may have lost their relevance and potential to support decision-making.

To this point, we illuminated that prevailing management systems are designed to operate in a rather stable environment, while heavily relies on a predetermined programme logic and are inward-oriented. Moreover, the use of performance information is insufficient for learning and knowledge enhancement, which, in turn, do not support the idea of meaning-making processes. These governance challenges and limitations of performance management systems underscore the importance of recent developments in the overall governance mode that have emphasized management as an open system in which government organizations extensively collaborate with stakeholders in decision making (Bouckaert and Halligan 2008; Bourgon 2011).

Handling complexity through a collaborative approach

Efforts to exceed the boundaries of governmental organizations to make them more open are consistent with the acknowledgement of complex systems, which suggests that no single organization is capable of dealing with complex policy problems. While complexity theory's application in the field of public management has not yet evolved into a fully-fledged theory, collaborative management could offer a solid contribution to its further evolution. In this article we will demonstrate appropriateness of collaborative strategy to tackle

governance challenges imposed by complexity and, hence, to address complex policy problems. We argue that the collaborative approach enables governmental organizations to embrace a holistic view to problem solving and lead to knowledge-enhancement through deliberations and consensus-building process.

Collaborative management put an emphasis on complex policy problem solving that cannot be solved by a single organization alone (Agranoff and McGuire 2003; Bryson, Crosby and Stone, 2006). Whereas in the complexity settings information about policy problems is scattered and no one actor is able to possess a whole picture, multiple actors are encouraged to collaborate in order to share information and, in turn, increase knowledge how to solve complex problems (Bryson, Crosby and Stone 2006; Hajer and Wagennar 2003). Head (2022) identified "stakeholder collaboration" as one of seven strategies government use to address wicked problems – issues that closely resemble complex policy problems in their nature.

Although some authors (Bryson, Crosby and Stone 2006; Arganoff and McGuire 2003; Hajer and Wagenaar 2003) referred collaboration settings with the ability to solve complex policy problems, collaborative management do not elaborate possible response strategies for governmental organizations for dealing with complexity. To better understand how a collaborative approach could offer strategies for handling governance challenges in the context of complexity, we provide a brief overview of core collaborative processes – namely, *deliberation* and *consensus-building* – that lead to *knowledge-enhancement*.

Deliberation and consensus-building

An important driving force for collaboration is the awareness that no one actor can solve key problems in isolation. Actors process information from different perspectives and diverse value positions from which it might be interpreted (Hajer and Wagenaar 2003; Klijn and Koppenjan 2012; Lecy, Mergel, and Schmitz 2014). Deliberation, as a principle for communication and behavior in collaborative settings, could be viewed as a process where all participants share information and knowledge, all perspectives are discussed equally, and all information available is taken into consideration before reaching a collective agreement (Robertson and Taehyon 2012). The deliberation process could also be described as a dialogue-based process (Robertson and Choi 2012; Choi and Robertson 2014).

The deliberation process provides a foundation to reach solutions that are more appropriate for the majority of stakeholders. Hence, in an ideal world, collaboration should result in shared agreement reached through consensus building (Ansell and Gash 2008; Robertson and Choi 2012).

Knowledge-enhancement

Collaboration is not a self-sufficient process, and its overall purpose is "to generate desired outcomes together that could not be accomplished separately" (Emerson et all 2012). We embrace the notion that the processes of deliberation and consensus-building result in a process of learning (Choi and Robertson 2014). Drawing on this, we argue that knowledge-enhancement resulting from deliberations and consensus building increases government organizations' problem-solving capacity. Participants, not only get better acquainted with each other's preferences or receive new information possessed by other participants, but also contribute together to new knowledge creation that, in turn, affects their capacity to deal with complexity.

Features of the performance management system that embrace the collaborative approach

In this section, we explicate the characteristics of performance management that create favourable settings for collaboration. Then, building on a literature review, we identify the mechanisms for collaboration that are managed by the performance management system, which offers promising strategies for dealing with complexity patterns.

The characteristics of performance management are described in reference to the Performance Governance ideal type proposed by Bouckaert and Halligan (2008). In addition to performance management components – namely, performance measurement, the incorporation of performance information, and the use of performance information, we include strategic planning. We embrace the notion that strategic plan-

ning and performance management constitute a single system and should be approached integrally (Poister 2010). The Performance Governance ideal type covers a fundamental change in performance management systems, while moving away from being a self-centric management system focused on governmental organizations, towards being a means of governance that is responsive to external needs. Performance Governance is fully compatible with the concept of collaboration, since its main assumptions refer to shifting from a closed to an open system, extensive participation, stakeholders' engagement, and societal impacts.

Participatory strategic planning

In this article, we employ the concept of participatory strategic planning, which serves as a middle ground between deliberative strategic planning (a formal, rational, and detailed planning, that relies on prediction) and emergent strategic planning (learning from ongoing experiences, strategy develops in response to emergencies and experimentation). Bryson (2018) defined strategic planning as a deliberative and structured process, but at the same time underlined the importance of participation of external actors in order to embrace different views and new information. This approach is similar to participatory strategic planning, which incorporates a collaborative approach into rational deliberative planning. Through the lens of participatory planning, strategy formation could be viewed as an open process based on discussions that leads to a broad consensus on the most effective solutions (Pasha and Poister 2017).

With regard to the participatory planning approach, *collaborative policy dialogues* (Hajer and Wagenaar 2003) could be established to enable decision makers to bring together different actors around complex policy problems, and to involve them in strategy formation and goal-setting. We define collaborative policy dialogues as routines (i.e., institutionalized structural and procedural arrangements) through which stakeholders are involved in strategic planning. Routines represent structured and repeated interactions between stakeholders and government organizations, which are necessary for institutionalized collaboration (Feldman and Pentland 2003). Bryson, Crosby, and Stone (2006) asserted that well-designed collaborative routines enhance consensus-building and ensure all perspectives are considered in strategic planning.

Externally interactive performance measurement

For the purpose of this article, we refer an externally interactive performance measurement system to the involvement of multiple actors in the design of performance measurement (Bouckaert and Halligan 2008; Noordegraaf and Abma 2003; Kroll 2013, Yang and Holzer 2006)1. Externally interactive performance measurement should sensitively reflect the perceptions and arguments of multiple stakeholders (Matei and Antonie 2015). This would enable the adjustment of performance measurement systems in response to emergent changes and new insights (Van Dooren 2011). It should go beyond the measurement of outcomes and impacts, and enable the direct involvement of concerned actors through constant feedback (Noordegraaf and Abma 2003). The message is simple – performance measurement should create structured and continuous feedback mechanisms that facilitate relational interactions among internal and external actors. Some authors (Kroll 2023a; Kroll, Jacobson and Isett 2024; Douglas and Ansell 2021) go further by introducing the concept of shared measures, which refers to the collaborative process through which performance indicators are developed and utilized. Emerson and Nabatchi (2015) designed a matrix for assessing the performance of collaborative governance regimes. However, these concept typically applies to collaborative settings where all participants share responsibility for achieving the agreed-upon outcomes.

We argue that to effectively correspond to the emergence and evolution of complex systems, performance measurement should embrace mechanisms that enable it to become more responsive to the perceptions of the actors involved. *Reflexive performance measurement* promises to facilitate comprehending and

[1] We acknowledge that not only the design phase is important in terms of performance measurement. Structured and continuous feedback from stakeholders is needed to revise selected performance indicators, and more importantly, to make sense of achieved results. These processes of performance measurement are observed below, while discussing the component of the Use of performance information, namely while discussing joint learning forums.

responding to the emerging new patterns inherent in complex systems. We define reflexive performance measurement as routines through which stakeholders are involved in performance measurement.

Performance management as an externally consolidated system

Incorporation of performance information is the other attribute of Performance Governance, which means integrating performance related data into existing organizational routines, with the intention of using it for decision-making (Bouckaert and Halligan 2008). Incorporation encourages the utilization of performance information by creating certain management routines and requirements, helps to anchor the performance management system into the overall governance of organization, and is entwined with other management systems.

Bouckaert and Halligan (2008) contended that in collaborative settings, in addition to internal integration, performance information should also be externally consolidated, to make it accessible to external stakeholders.

The use of performance information: Shifting focus from accountability to learning

The use of performance information for learning fully corresponds to the normative expectations of the performance management doctrine, which posits that generated performance information will facilitate deliberate actions and lead to better-informed decisions (Moynihan and Landuyt 2009).

Complexity underscores the need to support a shift in the use of performance information from accountability to learning (Jacobsen et al 2018). Accountability requires fixed performance indicators to compare initial situations against targets, relies on univocal performance information, and does not encourage an interpretative process of the collected data (Van Dooren 2011). In contrast, learning is grounded in deliberate dialogue, can create favourable conditions to facilitate the engagement of a wide range of actors in the interpretative process, and so enable a better understanding of complex policy problems and policy changes (Moynihan and Noel 2009; Moynihan 2008).

External consolidation of performance information and the use of performance information for learning could be realized through *joint learning forums* – performance management routines in which internal and external actors deliberately examine, interpret, and consider performance information (Kroll 2023; Moynihan and Landuyt 2009; Moynihan 2005; Moynihan and Kroll 2016). Stakeholders are involved in discussions that are based on dialogue, with a view to discussing performance information and collectively making sense of it (Moynihan 2008).

Summing up, in line with general characteristics of Performance Governance, we discerned three mechanisms for collaboration – *collaborative policy dialogues*, *reflexive performance measurement*, and *joint learning forums*, which enable the performance management system to govern collaborations (see Table 1). These mechanisms for collaboration embrace processes of both information sharing and meaning-making, which, in turn, empower governmental organizations to address complexity challenges.

Table 1. *Mechanisms for collaboration offered by performance management*

Components of performance management	Characteristics of performance management	Mechanisms for collaboration
Strategic planning	Participatory strategic planning	Collaborative policy dialogues
Performance measurement	Externally interactive	Reflexive performance measurement
Incorporation of PI	Externally consolidated	Joint learning forums
Use of PI	Focus on learning	

Source: Prepared by the authors.

Materials and Methods

Based on the main governance challenges related to complexity, including the shortcomings of traditional performance management systems, and the potential of a collaborative approach to address complex policy problems, as discussed in the Literature review, we propose a theoretical model, that links performance management with a collaborative approach and introduces mechanisms for collaboration. The model suggests that a collaborative approach adds properties to performance management, which enables governmental organizations to address complex policy problems.

A theoretical model linking a collaborative approach to performance management

In this article, we argue that performance management and a collaborative approach should be linked together to provide a basis for developing a performance management system in the context of complexity. In this section, we elaborate what changes are needed to performance management to enable it to embrace collaboration?

Research in the field of network or collaborative management has given significant attention to rules and institutional arrangements (Ansell and Gash 2018; Bryson, Crosby, and Stone 2006; Emerson et al. 2012). Emerson and colleagues (2012) argued that procedural and institutional arrangements influence the overall capacity for joint action. They concluded that long-term and more complex collaborations require more advanced structures and procedures supported by regulations and rules. Similarly, Bryson, Crosby, and Stone (2006) argued that 'governance as a set of coordinating and monitoring activities must occur in order for collaborations to survive'. Although procedural and institutional arrangements are widely recognized as essential element in enabling collaborations to operate effectively and sustainably, the question remains how to integrate those governing mechanisms into existing management systems and routines.

Performance management regimes operate in a broader public management framework, which moved towards a collaborative management agenda (Agranoff and McGuire 2003; McGuire 2006). The concept of collaboration herein suggests that public management encompasses more than governmental organizations, multiple non-governmental actors are also engaged into policy formation and implementation. In accordance with ideas of collaborative management, Bouckaert and Halligan (2008) compiled the Performance Governance ideal type which not only involves external actors into policy formation but also makes the whole performance management responsive to societal needs. In our theoretical model we utilized the concept of Performance governance regime to outline the interlinkages between Performance management and Collaboration. It is worth noting that Kroll (2023a) called to introduce a relational perspective into performance management studies, which emphasize "the importance of collaborative routines to select, define, and use performance practices and metrics". Others (Polzer 2022; Modell 2022; Vakkuri 2022) drew attention to the need to better understand how contemporary organizational forms, including networks, shape performance management systems and practices. Moreover, recent scholarship on performance management has given growing consideration to how to set up performance practices into collaborations (2023b; Kroll, Jacobson and Isett 2024; Douglas and Ansell 2021; Choi and Moynihan 2019; Nakashima 2023; Emerson and Nabatchi 2015). Douglas and Ansell 2021 attempted to conceptualize performance regimes, ranging from actor-centric to network-centric performance regimes. However, in most cases these studies contribute to better understanding of performance management in collaborations, associated with cross-organizational goals and joint performance, which operate outside the formal organizational structures and differ from organizational performance management systems. Although studies describe various types of collaborative performance regimes, they offer little insights into how to transform traditional performance management systems within government organizations (exception is Kroll 2023b).

Structuration theory and the theory of organizational learning could be useful to couple performance management and collaboration. Structuration theory provides a solid background for explaining interconnections between collaboration and performance management (Crosby and Bryson 2010; Nelson, Lawrence and Cynthia 2000; Pentland and Feldman 2007). Existing collaborative actions provoke the

creation, development, and maintenance of the mechanisms necessary for collaboration, and create a template that enables and guides further collaborative practices. At the same time, governance structures provide the rules and recourses that form a foundation from which collaboration can advance. Drawing on structuration theory, we assert that collaboration and performance management are closely interconnected concepts that interact with each other constantly. The performance management system could establish mechanisms for collaboration that in turn would facilitate and encourage collaborative processes by ensuring the constructive involvement of multiple actors.

The theory of organizational learning explains how organizations could utilize performance information to develop (Moynihan and Landuyt 2009; Moynihan 2005). Moynihan and Landuyt (2009) argued that the concept of organizational learning "organizations can improve if organizational actors identify and use information to improve actions" supports much of contemporary performance management reforms. The main implication is that performance information should be utilized for learning and, thus, incorporated into decision making (Van Dooren 2011; Moynihan 2005). In addition, the concept of learning forums was introduced (Moynihan 2005; Moynihan and Landuyt 2009), which establishes routines that consider and discuss data and so links information with decision making. Hence, the theory of organizational learning suggests that performance information derived from performance management systems should be discussed with organizational actors. The idea of learning forums could be utilized as a governance mechanism for collaboration by providing a platform for multiple actors to involve.

We constructed a theoretical model that related the Performance governance regime to Capacity to deal with complex policy problems. By analyzing challenges of performance management in the context of complexity and demonstrating the advantages of a collaborative approach for handling complexity, we addressed the collaborative approach for performance management. We argue that interactions between Collaboration and Performance management lead to the creation of Mechanisms for collaboration. The relationships between Performance management, Collaboration, and Mechanisms for collaboration constitute the Performance governance regime (the inner rectangle in Figure 1), which, in turn, affects the Capacity for dealing with policy problems in the complexity context (the outside rectangle in Figure 1).

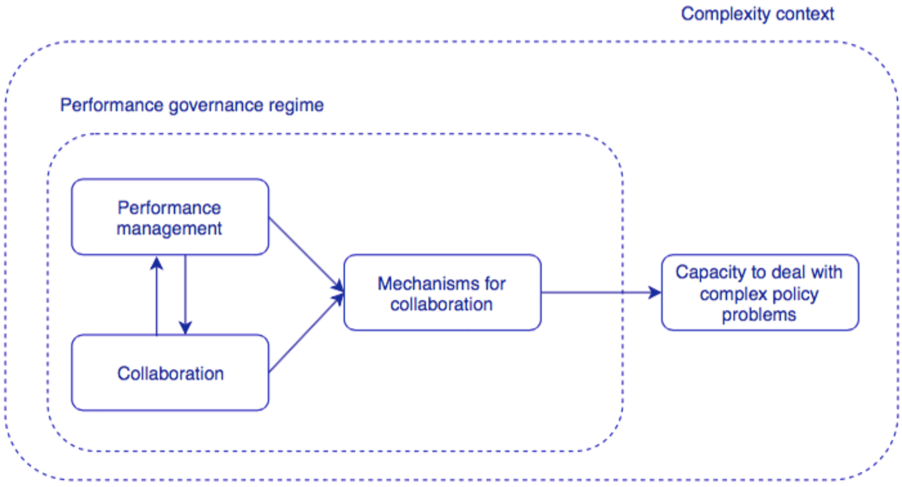

Figure 1. *Theoretical model relating performance governance regime to capacity to deal with complex policy problems*

Source: Prepared by the authors.

Operationalization

The constructs of the theoretical model were operationalized and measured by one or several items based on findings from the literature review (see Table 2). A semantic differential format with five anchors was employed to measure performance management characteristics. For other items, five points Likert scales were used that ranged from 'Significantly deteriorated' to 'Significantly improved' in the case of Capacity to deal with complex policy problems, from 'Never' to 'Always' in the case of the Use of performance information, and from 'Disagree' to 'Agree' for the rest of the items.

Table 2. *Operationalization of theoretical constructs*

Construct	Item no.	Scales	Measure	Source
Performance management characteristics				
Participatory strategic planning	q_1_1	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	'A collaborative approach to strategy development that actively involves multiply stakeholders'	Adapted from Bryson et al. 2006, Pasha & Poister 2017, Ansell & Gash 2008, Emerson et al. 2012
Full span of performance measurement	q_1_2		'Performance measurement system spans from input through output, to outcome and impacts'	Adapted from Bouckaert and Halligan 2008, Moynihan 2008
Externally interactive performance measurement	q_1_3		'Performance measurement in the organization is externally open and has to do with information sharing with stakeholders'	Adapted from Bouckaert and Halligan 2008, Noordegraaf and Abma 2003
Incorporating performance information is externally consolidated	q_1_4		'Conditions are created for multiple actors to contribute to performance assessment and use performance information most effectively'	Adapted from Bouckaert and Halligan 2008, Kroll 2015, Behn 2003, Suchman 1995
The use of performance information for learning	q_1_5		'The performance management system encourages the use of performance information for programme management and problems solving'	Adapted from Moynihan and Kroll 2016, Moynihan 2009, Van Doreen et al. 2010
Collaboration				
Principled engagement	q_3	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	'Concerned actors are engaged in policy problem identification and determination, policy deliberations and decision making through consensus building'	Adapted from Emerson et al. 2012, Ansell and Gash 2008, Bryson et al. 2006

Mechanisms for collaboration				
Collaborative policy dialogue	q_2_1	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	'Strategic goals, targets, policy problems and solutions are discussed with stakeholders through collaborative policy dialogues where actors listen to one another and legitimately acknowledge and act upon one another's views in joint learning'	Adapted from Laurian 2009, Beza 2016, Bryson et al. 2006, Hajer and Wagenaar 2003, Feldman and Pentland 2003
Reflexive performance measurement	q_2_2		'Performance measurement incorporates concerned stakeholders to co-design performance measurement system and promotes a meaningful communication and dialogue among stakeholders'	Adapted from Noordegraaf and Abma 2003, Yang and Holzer 2006, Ho and Coates 2004
Joint learning forums	q_2_3		'Management routines in which performance information is examined and interpreted and what it implies is considered before subsequent actions are established'	Adapted from Moynihan and Kroll 2016, Moynihan 2005, Moynihan and Landuyt 2009, Kroll 2015
Joint learning forums	q_2_4		'Stakeholders are involved in discussions that are based on a dialogue to collectively make sense of performance information'	Adapted from Moynihan and Kroll 2016, Moynihan 2005, Moynihan and Landuyt 2009, Kroll 2015
Capacity to deal with complex policy problems				
Perceived capacity	q_4	Significantly deteriorated Somewhat deteriorated No change Somewhat improved Significantly improved	'The ability to anticipate the future, to embrace variety of problem frames and diversity of solutions, and utilize new knowledge to question and modify underlying assumptions and policies'	Adapted from Tõnurist and Hanson 2020, Fuerth and Faber 2013, Nikolova 2013, Bussey 2014
Complexity				
Perceived complexity	q_5	Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree	'I would characterize my operating environment as relatively complex'	Adapted from Moynihan and Hawes 2012, Cannon and John 2007

Source: Prepared by the authors.

Sample and data collection

The population of this questionnaire survey encompassed management positions (in a given policy area) in the ministries, as well as specialists in strategic management units, and management positions (in a given policy area) in legal entities under the Government of Lithuania and Government agencies in all policy areas. Based on these criteria, 1187 persons were included in the initial study sample. A link to an online questionnaire was sent to all sampling frame elements and a two reminders was sent one and two weeks after the initial letter. In total, 161 questionnaires were fully completed (13, 6 per cent response rate) in a two-week period from 11 May 2018.

The final sample reflects self-selection process, therefore there is no guarantee that the final sample is a probability sample. However, the general proportion of specialists and managers was not statistically significantly different from the true proportion in initial sample of 1187 persons.

Ethical considerations

The respondents were at minimal risk in our research. The email addresses of prospective respondents were manually collected from the public websites of Government agencies and legal entities under the Government of Lithuania. The participation of respondents in the survey was voluntary and anonymous, data collected guarantees complete anonymity (respondents are not identifiable) due to aggregated nature of institutional information requested in the questionnaire. Participants were informed on the purpose, research team and institution involved in the survey.

Data analysis techniques

In data analysis we assume a simple random sampling. No data editing was applied other than assigning missing values to a single category, post-stratification data weighting was not applied as the proportion of specialists and managers showed no distortion and the data collection method made impossible to compute sampling design weights (we see this as a trade off with respect to higher level of anonymity). We did not find suitable established scales to measure the constructs we use therefore we devised theory driven items and utilized exploratory rather than confirmatory data analysis framework.

Structural equation modelling (SEM) was identified as being an appropriate technique for verifying the theoretical model. The specific data analysis technique selected was partial least squares structural equation modelling (PLS SEM) for its exploratory nature (Fornell and Cha 1994, Chin 1998). The package seminr (Hair et al. 2021) in r software was used for its variance-based approach to SEM.

In this paper, the 'Don't know' answers were treated as missing values, and for this reason the number of observations analysed ranged from n = 153 to n = 161, depending on the model. In PLS SEM ordered (Likert scale) items were treated as interval indicators and the mean imputation analysis option was used.

Results and Discussion

The results of our exploratory survey are focused on an organization's capacity to deal with complexity by examining direct relationships between Collaboration and Capacity, between Mechanisms for collaboration and Capacity, and between Performance management and Capacity.

Univariate results

From the viewpoint of Lithuanian practitioners, some of the components of the performance management system reflect the presence of significant collaboration. Strategic planning engages multiple actors (41.0 per cent agree or strongly agree) and the performance measurement system is externally interactive in terms of information sharing with concerned actors (35.4 per cent). These characteristics are considered favourable to the establishment of mechanisms for collaboration. The less developed characteristics in the Lithuanian performance management system in terms of collaboration are related to the span of perfor-

mance measurement, the incorporation of performance information, and the use made of performance information. Respondents (41.6 per cent) disagree on whether performance management emphasized measuring outcomes and impacts, and not the process itself. Respondents (42.2 per cent) also disagreed on whether the conditions created enable multiple actors to contribute to performance assessment and use performance information. Respondents (42.9 per cent) also disagreed on whether the performance management system encourages the use of performance information for learning.

The survey's findings revealed that to some extent all indicated mechanisms for collaboration are in place. Respondents confirmed the presence of interactive policy dialogues (52.8 per cent agree or strongly agree), responsive performance measurements (47.2 per cent), learning forums (54.1 per cent), and the involvement of stakeholders in these forums (39.8 per cent). The findings partially confirm that certain performance management characteristics are necessary to establish mechanisms for collaboration. The Lithuanian case showed that joint learning forums could be established without external consolidation of performance information, and could focus on learning in terms of the use of performance information. However, the effectiveness of joint learning forums operating without favourable conditions is questionable. Although we do not address the issue of the effectiveness of mechanisms for collaboration, this aspect needs to be investigated further, to substantiate the findings presented in this research.

Measurement model

Models are always identified in the PLS SEM approach, and therefore we will concentrate on other features of the measurement models. The measurement models analyzed showed acceptable convergent and discriminant validity, as all loadings were statistically significant and near (0.66) or above the threshold of 0.7 (with exception of 0.541 for q_1_2), the composite reliability scores for two multi-item constructs were above 0.8 and AVEs above 0.5; the items' cross-loadings across the constructs did not exceed 80% of the loading on the main construct.

A Harman's single factor from 22 Likert scale items in the data file was extracted to assess the size of common method bias. It explains 41% of the variance, which is below the commonly accepted threshold of 50%.

Structural model

The model with small coefficients of direct paths from Collaboration and Performance Management to Capacity for dealing with complex policy (see Figure 2) confirmed our theoretical assumption that the effects of Collaboration and Performance management on Capacity for dealing with complex policy problems are mediated through Mechanism for collaboration. In other words, Collaboration and Performance Management indirectly affect Capacity to deal with complex policy problems through Mechanisms for collaboration. Direct paths from Performance management (0.11) and Collaboration (0.125) to Capacity for dealing with complex policy problems included to account for untheorized, but potentially relevant paths (Nitzl et al. 2016, p. 1853) are not statistically significant at the 0.05 level. The indirect effects from Collaboration and Performance management through Mechanisms for collaboration to Capacity to deal with complex policy problems are statistically significant (0.132 and 0.196 respectively, $p < 0.05$). Performance management and Collaboration operating alone do not exert a direct influence on Capacity to deal with complex policy problems. A proper match and the creation of Mechanisms for collaboration are needed.

We argued that Performance management and Collaboration are mutually interacting concepts. The results revealed that the path from Collaboration to Performance management (0.488, $p < 0.01$) specified as an approximation to covariance relationship in PLS-SEM is statistically significant, and showed that Collaboration largely affects the development of Performance Management. These findings are important for explaining developmental trends of performance management. Actual collaboration leverages the performance management system to develop characteristics that embrace ideas of collaborative management.

Direct paths from Collaboration (0.352*) and Performance Management (0.488*) to Mechanisms for collaboration are statistically significant ($p < 0.01$), which means that both Collaboration and Performance management are important concepts for the creation of Mechanisms for collaboration. Results indicate that the effects of Collaboration and Performance management on Mechanisms for collaboration are equally important. This means that it is not sufficient only to create favourable performance management characteristics, and efforts should be made to encourage concerned actors to take collaborative actions.

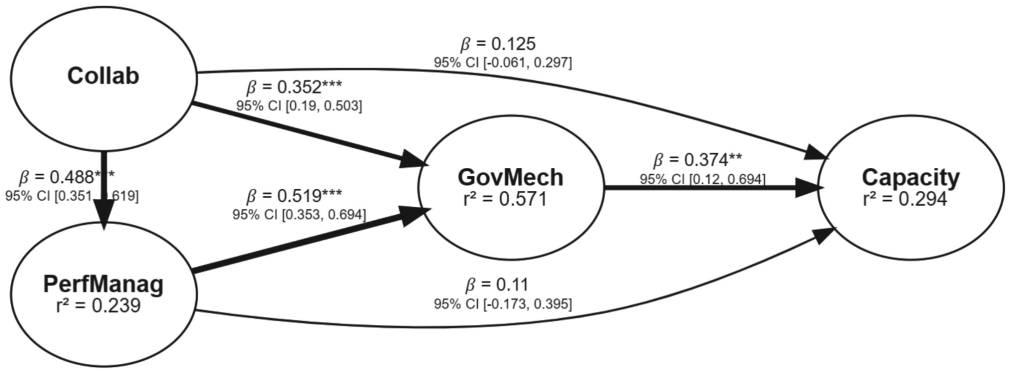

Figure 2. *Estimates for the structural model*

Source: Prepared by the authors.

Conclusion

- This article urges rethinking the traditional approach to performance management by making it capable of addressing the challenge of complexity. While dealing with complexity imposes rapid change, information ambiguity, and poor predictability a performance management system should be capable of mobilising information, structuring diverse knowledge, and making sense of it. This article presents a theoretical framework for a collaborative approach to performance management that couples Performance management with Collaboration. The theoretical framework relies on three performance management change trajectories – participatory strategic planning, externally interactive performance measurement, and greater use of performance information for learning. We argued that performance management would need to have these characteristics to create effective mechanisms for collaboration, which, in turn, would increase capacity for dealing with complex policy problems.
- This research found that Performance management and Collaboration are mutually interdependent concepts that promote the establishment of Mechanisms for collaboration. To some extent, the system of performance management in the Lithuanian case reflects collaboration, and especially so in terms of collaborative strategic planning and stakeholder involvement. We also confirmed the effective use of mechanisms for collaboration that include participatory policy dialogues, responsive performance measurement, and joint learning forums.
- The study's main research finding is that Performance management and Collaboration significantly affect Capacity to deal with complex policy problems through Mechanisms for collaboration. Performance management and Collaboration alone do not directly influence Capacity to deal with complexity. Of greater importance is how performance management creates favourable conditions to govern

collaboration. This is an important contribution to the theoretical body of performance management studies, because it provides a solid base for further attempts to develop a meaningful performance management system.

- Based on these findings, the implications for practice relate to the development of Mechanisms for collaboration. Before the establishment of Mechanisms for collaboration, managers should give attention to the development of favourable settings for Performance management. In the Lithuanian case, not all characteristics embraced the collaborative approach, and this might first influence the effectiveness of Mechanisms for collaboration and then Capacity to deal with complex policy problems. The limitations of this research, however, do not enable us to verify these relationships, and further researches are needed to substantiate the findings presented in this article. Nevertheless, when following a collaborative approach, we suggest paying attention to the external consolidation of performance information, and the utilization of performance information for learning.

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BENDRADARBIAVIMU GRINDŽIAMAS POŽIŪRIS Į VEIKLOS VALDYMĄ: ATSAKAS Į SUDĖTINGUS IŠŠŪKIUS

Anotacija. *Kompleksiškumas kelia reikšmingų iššūkių viešojo sektoriaus organizacijų valdymo sistemoms. Tradicinės veiklos rezultatų valdymo sistemos buvo sukurtos stabiliai aplinkai; jos remiasi mechanistiniu mąstymu ir iš anksto nustatyta programų logika, todėl nėra pakankamai efektyvios sprendžiant kompleksines viešosios politikos problemas. Šiame straipsnyje siūloma permąstyti tradicinį požiūrį į veiklos rezultatų valdymo sistemas, siekiant padidinti jų funkcionalumą kompleksiškoje aplinkoje. Teigiama, kad bendradarbiavimas su įvairiais suinteresuotais asmenimis leidžia viešosioms organizacijoms efektyviau spręsti kompleksines politikos problemas. Bendradarbiavimo grįsto valdymo procesai – viešosios politikos svarstymai (angl. deliberations) ir konsensusu grįsto sutarimo siekimas (angl. consensus-building), įtraukiant daugelį suinteresuotųjų šalių,– sukuria naujas žinias (angl. knowledge enhancement) ir tuo pačiu sustiprina viešųjų organizacijų gebėjimus spręsti problemas. Šiame darbe veiklos rezultatų valdymo sistemos susiejamos su bendradarbiavimo procesais, teigiant, kad jų tarpusavio sąveika lemia bendradarbiavimo valdymo mechanizmų sukūrimą. Išskiriami ir nagrinėjami trys bendradarbiavimo valdymo mechanizmai – įtraukiantys viešosios politikos dialogai (angl. participatory policy dialogues), refleksyvus veiklos rezultatų matavimas (angl. reflexive performance measurement) ir jungtiniai mokymosi forumai (ang. joint learning forums). Remiantis išsamia literatūros apžvalga, internetine apklausa bei statistiniu modeliavimu, šis tyrimas siekia įvertinti, ar veiklos rezultatų valdymo sistema, integruojanti bendradarbiavimo valdymo mechanizmus, padidina viešųjų organizacijų gebėjimus spręsti kompleksines politikos problemas. Internetinėje apklausoje dalyvavo vadovaujančias pareigas užimantys Lietuvos viešojo sektoriaus darbuotojai ir strateginio valdymo ekspertai. Tyrimo rezultatai parodė, kad viešųjų organizacijų gebėjimai spręsti kompleksines viešosios politikos problemas padidėja, kai bendradarbiavimo valdymo mechanizmai yra integruojami į veiklos rezultatų valdymo sistemą. Šis straipsnis prisideda prie veiklos rezultatų valdymo diskurso, siūlydamas bendradarbiavimu grįstą požiūrį į veiklos rezultatų valdymą ir pabrėždamas jos potencialą atliepti augančius kompleksiš-*

kumo iššūkius. Tyrimas skatina pereiti nuo statiškų ir į vidų orientuotų veiklos rezultatų valdymo sistemų prie labiau refleksyvių ir sąveika grįstų valdymo sistemų.

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