

Innovation Management Control in the Public Sector

An exploratory study of existing management control systems for
innovation activities in the public sector

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Preface

This thesis has been written as a final part of the master's program in Business Administration at the School of Business and Law at the University of Agder.

My interest in innovation and management was the starting point for choosing a research topic. The chosen topic was based on a suggestion from my supervisor, Professor Andreas Wald, and later narrowed down through several meetings and extensive reading and research on existing literature. Although the work on my master's thesis has been challenging, it has also been interesting and educational.

A special thanks to my supervisor, Professor Andreas Wald, for all the patience and helpful input throughout the process. Further, I would like to thank the participants for their time and contribution, which enabled the answer and completion of my master's thesis.

Finally, great gratitude to Jesus, my Savior, for all the love, strength, and support I received over the last few months. Due to numerous complications and obstacles, this is the last year I would have picked for something as extensive and demanding as a master's thesis, on top of everything else coming my way. Nevertheless, I reached the finish line and know with 100% certainty that I owe it all to you, God - thank you!

Kristiansand, 30.11.2022



Rebekka Rock

Abstract

This thesis explores how innovation activities are managed and controlled in the public sector. Extensive empirical research emphasizes the necessity of innovation and the application of an appropriate management control system (MCS) to ensure efficient and effective innovation processes. Most studies, however, focus on the private sector, although the public sector accounts for significant parts of the overall economy and is at least as dependent on effective and efficient innovation processes to continue providing services to society. Therefore, this qualitative exploratory study combines all three elements, i.e., innovation, management control, and the public sector. It thereby seeks to reveal the existing MCSs for innovation activities in public sector organizations (PSOs) and assess to what extent they contribute to efficient and effective innovation processes.

Simons' levers-of-control (LoC) framework forms the thesis' foundation – both for the data collection and analysis and for the presentation and discussion of the findings. Using purposive sampling, data were collected through semi-structured interviews and analyzed using a standard procedure in qualitative content analysis.

Overall findings indicate several common features and some prominent exceptions, both in terms of what the existing MCSs for innovation in the public sector are and to what extent these contribute to efficient and effective innovation processes.

The study lays an empirical basis for future research on MCSs for innovation activities in PSOs and contributes to LoC research related to MCS and innovation.

Keywords: Public sector, innovation, innovation management, IMC, innovation management control, management control, MCS, management control systems, levers of control

Sammendrag (Abstract in Norwegian)

Denne oppgaven utforsker hvordan innovasjonsaktiviteter i offentlig sektor styres og kontrolleres. Omfattende empirisk forskning understreker nødvendigheten av innovasjon og bruken av hensiktsmessige styringskontrollsystemer for å sikre effektive innovasjonsprosesser. De fleste studier fokuserer imidlertid på privat sektor, selv om offentlig sektor står for betydelige deler av totaløkonomien, og er minst like avhengig av effektive innovasjonsprosesser for å kunne fortsette å yte tjenester til samfunnet. Derfor kombinerer denne kvalitative utforskende studien alle tre elementene, dvs. innovasjon, styringskontroll og offentlig sektor. Den søker dermed å avdekke eksisterende styringskontrollsystemer for innovasjonsaktiviteter i offentlig sektor, samt vurdere i hvilken grad de bidrar til effektive innovasjonsprosesser.

Simons' kontrollspaker-rammeverk (levers-of-control framework) danner grunnlaget for oppgaven – både for datainnsamling og -analyse, samt for presentasjon og diskusjon av funnene. Ved hjelp av målrettet prøvetaking ble data samlet inn gjennom semistrukturerte intervjuer og analysert ved hjelp av en standard prosedyre i kvalitativ innholdsanalyse.

Overordnede funn indikerer flere fellestrekk og noen fremtredende unntak, både når det gjelder hva de eksisterende styringskontrollsystemer for innovasjonsaktiviteter i offentlig sektor er, og i hvilken grad disse bidrar til effektive innovasjonsprosesser.

Studien legger et empirisk grunnlag for fremtidig forskning på styringskontrollsystemer for innovasjonsaktiviteter i offentlige organisasjoner, og bidrar til kontrollspaker-forskningen knyttet til styringskontroll og innovasjon.

Nøkkelord: Offentlig sektor, innovasjonsledelse, styringskontrollsystemer, styringskontroll, kontrollspaker, innovasjon

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List of Abbreviations

Abbreviation	Definition
IMC	Innovation Management Control
LoC	Levers of Control
MC	Management Control
MCS	Management Control System
NPM	New Public Management
PM	Performance Measurement
PMS	Performance Measurement System
PSO	Public Sector Organization

Chapter 1: Introduction

1.1 Background and Relevance

In these rapidly changing times, innovation is a key success factor crucial for strategic goal achievement, success, growth, and survival of organizations (Aubry, Hobbs, & Thuillier, 2007; Dalton & Logan, 2020; Schumpeter, 1950; Singh & Aggarwal, 2022), but also related to complexity, uncertainty, and high resource consumption (Bedford, 2015; Caetano, 2017; Lill, Wald, & Munck, 2020). Therefore, it is essential to understand the central part a management control system (MCS) can play in innovation success (Abernethy, Dekker, & Grafton, 2021; Baird, Su, & Munir, 2019; Bedford, 2015; Biswas & Akroyd, 2022; Chenhall, 2003; T. Davila, 2005; Simons & Dávila, 2021). Managers should aim for an MCS that balances and creates tensions between the essential determinants for innovation, i.e., control and creativity, for efficient and effective processes (Henri, 2006; Lill et al., 2020). However, no specific MCS is developed for innovation activities, and due to the inherent complexity of innovation, finding an appropriate MCS to control innovation activities can be challenging (Lill et al., 2020).

The literature on innovation and management control (MC) individually, as well as the research on MC for innovation, also known as innovation management control (IMC), is becoming increasingly extensive. However, most studies focus on the private and non-profit sectors (Felício, Samagaio, & Rodrigues, 2021; Ganguly & Das, 2020), even though the public sector accounts for significant parts of the overall economy (Arundel, Bloch, & Ferguson, 2019; Digmann, Bendix, Jensen, & Jensen, 2006) and is at least as dependent on effective and efficient innovation processes. Although MCSs were originally intended for performance management (PM) in the private sector, the public sector started adopting them several decades ago (Berland & Drevetton, 2006). Still, little is known about MC and the use of MCSs in the public sector (Bloch & Bugge, 2013; Bommert, 2010; Chenhall, 2003; Elbashir, Sutton, Arnold, & Collier, 2021; Felício et al., 2021; Ganguly & Das, 2020; Mulgan & Albury, 2003; D. Otley, 2016; van Helden & Reichard, 2018).

However, due to fundamental differences between the sectors, research acknowledges that the MCS design and use in public sector organizations (PSO) require a different approach than in typical private sector organizations (Berland & Drevetton, 2006; A. Davila, 2012; Drennan & McConnell, 2007; Hofstede, 1981). Concerning innovation and its growing necessity, especially in the public sector, this thesis addresses the abovementioned gaps by combining the concepts of

innovation, MCS, and the public sector, constituting the research topic *Innovation Management Control in the Public Sector*, illustrated in Figure 1.

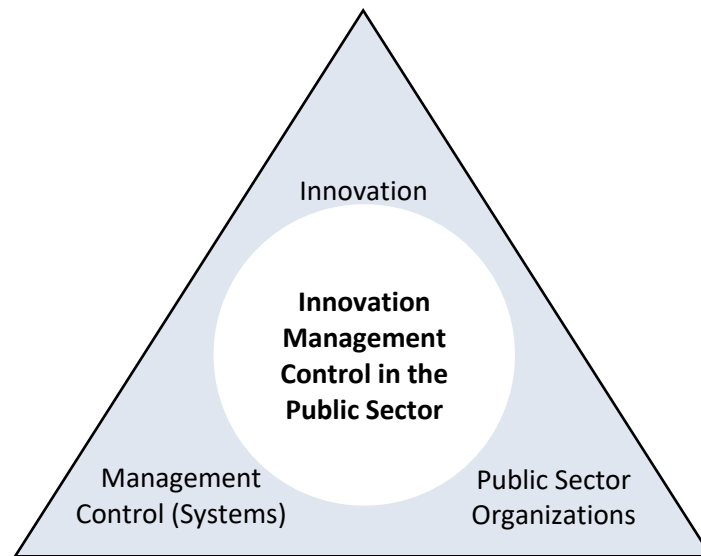


Figure 1. Innovation Management Control in the Public Sector

1.2 Research Questions

This study explores MCSs for innovation activities in Norwegian PSOs using qualitative data from semi-structured interviews and aims to answer the following research questions:

RQ1: Is innovation relevant to public sector organizations?

RQ2: What are the existing MCSs for innovation activities in the public sector?

RQ3: To what extent do they contribute to effective and efficient innovation processes?

Although this thesis seeks to answer all three questions, RQ2 and RQ3 constitute the main research objective, while RQ1 is intended to provide a sound foundation and understanding for further exploration.

1.3 Delimitations

In addition to concentrating on PSOs, this thesis is further delimited to include only public, non-profit organizations, i.e., PSOs that provide public services, without having financial results as their primary goal (Merchant & Van der Stede, 2017). The absence of profit orientation highlights the characteristics of a 'typical' PSO and may reinforce the challenge associated with MCSs.

Despite many similarities, such as task and authority delegation, competition, budgets, and strategy development, “MCS alternatives and challenges are often quite different” for non-profit organizations (Merchant & Van der Stede, 2017, p. 723), as most PSOs are (Arundel et al., 2019).

1.4 Overview

The remainder of this thesis is structured as follows; Chapter 2 provides the theoretical background for the study in more detail, starting with the key concepts. The literature review constitutes the most comprehensive part of this chapter and reviews the most relevant existing literature related to the research topic, also pointing out some important gaps to which this study seeks to contribute. This is followed by a brief review of MCS frameworks before the levers-of-control (LoC) framework, selected as the foundation for this study, is presented and described.

Chapter 3 provides a detailed overview of the research approach and design, followed by sections on the sampling strategy and the data collection and analysis methods. Finally, it addresses the research quality of this study, including reliability, validity, and ethical considerations.

Chapter 4 is the thesis' most important and comprehensive part. This chapter combines the presentation and discussion of the most significant interview findings for the study's research questions, linking the results to the relevant literature from chapter 2.

The thesis is finalized with the conclusion in chapter 5, which summarizes and highlights the most significant findings and their implications, followed by an overview of the study's limitations and suggestions for future research.

Chapter 2: Theory

This chapter is divided into three main parts. Initially, the key concepts for this study are defined and explained, including important specificities, to lay the ground for further reading. The literature review in the second part presents the most relevant literature on the research topic, revealing existing knowledge and highlighting gaps to which this study seeks to contribute. Finally, the chapter provides a short review of MCS frameworks, followed by a presentation and explanation of the theoretical framework selected as the foundation for this study.

2.1 Key Concepts

As shown in Figure 1, the research topic of this study, *Innovation Management Control in the Public Sector*, consists of three key concepts, i.e., innovation, management control (systems), and the public sector. The following sections define and clarify the terms individually by describing the most important features of each to provide a proper basis for further reading.

2.1.1 Innovation

Innovation is a key success factor and crucial for strategic goal achievement, success, growth, and survival of organizations (Aubry et al., 2007; Dalton & Logan, 2020; Schumpeter, 1950; Singh & Aggarwal, 2022; Su & Baird, 2018). The term has become a widespread, familiar concept, but the perceived meaning is often fluid and challenging to capture. The term is “so all-encompassing and open to interpretation that it risks losing its meaning” (Bason, 2018, p. 39; Johnston & Stewart-Weeks, 2011). There is a lack of consensus on the definitions among researchers, and most scholars have their own interpretation (Chen, 2017; Howells, 2005; Lill et al., 2020; Singh & Aggarwal, 2022). A recent study by Singh & Aggarwal (2022), intending to contribute to a unified definition, pointed out that there is an agreement in most definitions that innovation equates with something novel (Singh & Aggarwal, 2022), whether it is a new product, service, process, structure, system, plan, or program (Damanpour, 1991; Lill et al., 2020).

This thesis adopts the general definition of innovation found in the Oslo Manual (OECD/Eurostat, 2018, p. 60), which defines the term as something new or improved that significantly differs from previous versions and is either brought into use or made available to others. Accordingly and simply put, KS - the Norwegian Association of Local and Regional Authorities, which is the organization for all local governments in Norway (KS, 2022, Nov 16) - defines innovation as something novel, useful, and utilized (Bækkeli, 2016).

"Innovation activities include all developmental, financial and commercial activities [...] that are intended to result in an innovation" (OECD/Eurostat, 2018, p. 20). Central to innovation processes are both creativity and the evaluation or prioritization of which ideas to pursue (Digmann et al., 2006). Also, a typical innovation process is circular, open, and informative (Taylor, 2018), requiring knowledge sharing between all sectors (Bekkers, Edelenbos, & Steijn, 2011).

The most prominent features include that innovation is often related to complexity, uncertainty, and high resource consumption (Bedford, 2015; Caetano, 2017; Lill et al., 2020). To accommodate the required flexibility, especially for innovation processes within organizations, temporary organizational forms such as internal projects are considered the most suitable platform for carrying out such complex processes (Arvidsson, 2009; Bakker, 2010; Burke & Morley, 2016; Hanisch & Wald, 2014).

2.1.2 Management Control (Systems)

Like the previous term, management control also seems to lack a consistent definition, as the term seems to be used differently in various contexts (A. J. Berry, Coad, Harris, Otley, & Stringer, 2009; Strauß & Zecher, 2013). Simultaneously, "there is no perfect answer or method" (Stainer & Stainer, 2000, p. 273), nor any one-size-fits-all design and use of an MCS, as this depends on the respective context (Chenhall, 2003; Frezatti, de Souza Bido, Capuano da Cruz, & de Camargo Machado, 2015; Lill et al., 2020). "MCS shapes, and is shaped by, strategy" (Kober, Ng, & Paul, 2007, p. 425) and can be used to promote organizational change (Bracci & Tallaki, 2021; Nuhu, Baird, & Appuhami, 2019).

In a review and comparison of existing conceptualizations of MCS, Strauß & Zecher (2013) distinguish between the core understanding and the holistic understanding of MCS. While the core understanding takes a command-and-control perspective, including only formal controls, such as budget plans and information systems, the holistic understanding considers every influenceable management aspect as part of an MCS. According to their study, Merchant & Van der Stede (2017), Anthony & Govindarajan (2007), and Simons (2000) are the three most relevant textbook authors on MCS, of which the former appears to have the broadest understanding (Strauß & Zecher, 2013). This understanding defines management control as "all the devices or systems that managers use to ensure the behaviors and decisions of their employees are consistent with the organization's objectives and strategies" (Merchant & Van der Stede, 2017, p. 8). However, as Simons' (1995, 2000) understanding includes a feedback instrument between goals, actions, and business strategy (Lill et al., 2020), it is considered the most appropriate conceptualization for innovation (Strauß & Zecher, 2013). His approach explains MCS as "the formal, information-based routines

and procedures managers use to maintain or alter patterns in organizational activities” (Simons, 1995, p. 5).

Others describe MCS as essential tools developed and utilized by managers to support and manage strategic change and uncertainties, and improve competitive advantages (Abernethy et al., 2021; Biswas & Akroyd, 2022; Chenhall, 2003; Kober et al., 2007; Simons, 1987, 1990, 1991, 1994), by influencing employees’ behavior and interests (Baird et al., 2019). Specifically, combinations of controlling and enabling tools lead to dynamic tensions, increased organizational capacities, and unique competitive advantages (Bedford, 2015; Henri, 2006; Mundy, 2010; Strauß & Zecher, 2013; Widener, 2007; Zeff, 2008).

The purpose of MCSs is to control the achievement of organizational goals (Biswas & Akroyd, 2022), enable employees to opportunity-seeking and problem-solving (Mundy, 2010), and properly balance creativity and efficiency (Lill et al., 2020; Speklé, van Elten, & Widener, 2017). For MCSs to be most appropriate and effective, it is crucial to consider potential inter-dependencies between different approaches (Chenhall, 2003; Grabner & Moers, 2013; D. T. Otley, 1980).

2.1.3 The Public Sector

In this thesis, the term 'public sector' refers to public sector organizations (PSOs), mainly characterized by being politically controlled (Digmann et al., 2006) and responsible for providing public services (Felício et al., 2021; Maharani, 2021), such as health, education, and social services (Stainer & Stainer, 2000). Traditionally, PSOs are known for their bureaucratic and inflexible organizational structure and regulation (Brorström, 2015; Digmann et al., 2006). The most significant specificity of public organizations, which distinguishes them from private and non-profit organizations, is the wide range of stakeholders and the impact of political and social dimensions on decision-making (Drennan & McConnell, 2007).

PSOs are usually not profit-oriented (Arundel et al., 2019; Merchant & Van der Stede, 2017, p. 723), but, like all organizations, they also have goals (Bryson, Ackermann, & Eden, 2007; Scott, 1987) and critical success factors (Jenster, 1987; Scholes & Johnson, 2002). While a typical private sector organization seeks to maximize profit for its shareholders, a typical PSO is concerned with delivering valuable services to society (Taylor, 2018).

As Digmann et al. (2006) predicted, PSOs worldwide face a broad array of challenges (Palm, 2020), which in Norway include demographic changes, less economic room for action, climate and

environmental challenges, and the UN's sustainability goals (The Royal Ministry of Local Government and Modernization, 2019-2020, p. 9). Especially after the introduction of major reforms, also known as New Public Management (NPM), the public sector encounters increased pressure to enhance the efficiency and performance of their services (Bækkelie, 2016; Chowdhury & Shil, 2016; Elbashir et al., 2021; Felício et al., 2021; Hartley, Sørensen, & Torfing, 2013; Maharani, 2021; Nuhu et al., 2019; Pee & Kankanhalli, 2016). In parallel, they have to be accountable and transparent (Taylor, 2018) while considering laws, regulations, society, and citizens, including current norms and values (Digmann et al., 2006).

Considering the complex characteristics and circumstances of PSOs discussed in this section, not all established theories and methods from the private sector are easily transferable to the public sector (Elbashir et al., 2021; Stainer & Stainer, 2000).

2.2 Literature Review

The literature review presents “an interpretation and synthesis of published research” (Merriam, 1988, p. 6) and aims to show the background and link to the thesis' research topic (Anderson, Durston, & Poole, 1970; Bruce, 1994). The topic, *Innovation Management Control in the Public Sector*, consists of three key concepts, explained in section 2.1. The literature review is divided into four parts, of which the first three address combinations of these concepts, as illustrated by the arrows in Figure 2, while the last part includes all the concepts together. Each part presents the most relevant literature on the topic, uncovering existing knowledge and highlighting gaps to which this study seeks to contribute.

2.2.1 Innovation Management Control

MCSs were commonly assumed to limit autonomy and freedom, hindering experimentation, opportunity-seeking, and innovation (Ganguly & Das, 2020; Simons, 1995). Lill et al. (2020) provide a systematic review of the MCS literature for innovation activities and show that “the repressing character of control is not inherent to control itself, but emanates from the design of the respective management control system” (Lill et al., 2020, p. 919). Although increasing research recognizes the suitability and even necessity of MCS for innovation activities (Bisbe & Malagueño, 2009; Bisbe & Otley, 2004; Chenhall, 2003; A. Davila, Foster, & Oyon, 2009; Lill et al., 2020; Strauß & Zecher, 2013), there are still conflicting findings suggesting possible limitations of MCSs that hinder innovation (Ganguly & Das, 2020). Also, the complexity of innovation makes it challenging to assess the suitability of MCS for innovation activities (Haustein, Luther, & Schuster, 2014; Lill et al., 2020). This study addresses calls to examine further the relationship

between MCSs and innovation (A. Davila, Foster, & Li, 2009; Ganguly & Das, 2020; Guo, Paraskevopoulou, & Sánchez, 2019; Malagueño & Bisbe, 2010; Tessier & Otley, 2012).

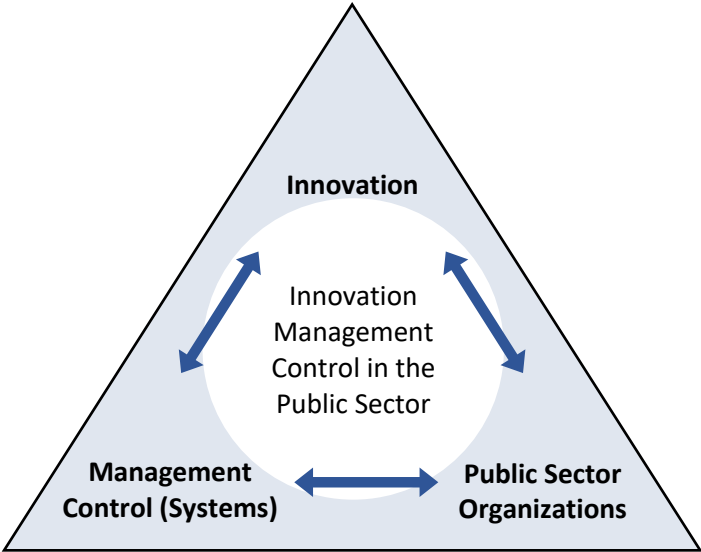


Figure 2. Combinations of the Concepts in Innovation Management Control in the Public Sector

However, the research on innovation management control (IMC) has notably grown (Lill et al., 2020), with several examples of MCSs being used in innovation contexts (Barros & da Costa Ferreira, 2019, 2022; Biswas & Akroyd, 2022; T. Davila, 2000; Feeney & Pierce, 2018; Henri & Wouters, 2020; Müller-Stewens, Widener, Möller, & Steinmann, 2020; Pan Fagerlin & Löfstål, 2020). MCSs for innovation activities aim to create a sound balance between creativity and efficiency to succeed in the innovation processes (Lill et al., 2020) and to achieve organizational goals (Biswas & Akroyd, 2022). “Managing the tension between creative innovation and predictable goal achievement is the key to profitable growth” (Simons, 1995, p. 175).

The literature on innovation and management control individually, as well as management control for innovation, also known as innovation management control (IMC), is becoming increasingly extensive. Understanding the central part an MCS can have in innovation success is essential (Abernethy et al., 2021; Baird et al., 2019; Bedford, 2015; Biswas & Akroyd, 2022; Chenhall, 2003; T. Davila, 2005; Simons & Dávila, 2021). MCSs foster organizational change (Bracci & Tallaki, 2021; Nuhu et al., 2019). However, due to the inherent complexity of innovation, finding an appropriate MCS to control innovation activities can be challenging (Lill et al., 2020). Managers should aim for an MCS that balances and creates tensions between the essential determinants for innovation, i.e., control, and creativity or freedom, for efficient and effective processes (Henri, 2006; Lill et al., 2020). Simultaneously, empirical research provides little

information on the important role that managers play in the design and use of MCSs (Abernethy, Bouwens, & van Lent, 2010) and hence also in the facilitation of an innovative culture that enables the implementation of innovations (Elbashir et al., 2021).

Although no MCS design is developed explicitly for innovation (Lill et al., 2020; Strauß & Zecher, 2013), organizations must find one that both provides freedom and control to facilitate innovation (Lill et al., 2020; Tidd & Bessant, 2018). Speklé et al. (2017) emphasize the importance of both creativity and control. While creativity fosters innovation, "necessary to survive and compete in changing markets", MC enables performance and efficiency (Speklé et al., 2017, p. 73). "MCS can create beneficial tensions between these two determinants necessary for successful innovation" (Lill et al., 2020, p. 919), ease strategy implementation (Biswas & Akroyd, 2022; Kober et al., 2007; D. Otley, 2016), and improve the organizational capacity to emanate benefits from innovation when the controls are activated in an enabling, facilitative and interactive manner (Bedford, 2015). Also, one of the earliest interpretations of the term control (by Professor Ross G. Walker) viewed the term as not only limiting but also enabling and promoting (Strauß & Zecher, 2013; Zeff, 2008).

2.2.2 Management Control in the Public Sector

The fragmented yet comprehensive MCS research field (Strauß & Zecher, 2013) mainly focuses on private and non-profit organizations (Felício et al., 2021). Although MCSs were originally intended for performance measurement (PM) in the private sector, the public sector started adopting them several decades ago (Berland & Drevetton, 2006), especially after the introduction of NPM and the enhanced focus on performance (Elbashir et al., 2021). PSOs have "specific public missions and are expected to deliver their services at the lowest cost possible for citizens" (Deschamps, 2019, p. 157). Still, little is known about MC and the use of MCSs in the public sector (Bloch & Bugge, 2013; Bommert, 2010; Chenhall, 2003; Felício et al., 2021; Ganguly & Das, 2020; Mulgan & Albury, 2003; D. Otley, 2016; van Helden & Reichard, 2018), moreover, "how and why MCS initiatives succeed or fail" (Elbashir et al., 2021, p. 2). This thesis addresses this gap by seeking to reveal and evaluate existing MCSs for innovation activities in the public sector.

As shown in the first paragraph of section 2.1.2, there is no one-size-fits-all answer to the design and use of MCSs – particularly relevant and applicable in the public sector (Arnaboldi, Lapsley, & Steccolini, 2015; Elbashir et al., 2021). Research acknowledges and points out fundamental differences between the private and public sectors (e.g., Elbashir et al., 2021; Felício et al., 2021), explaining why the MCS design and use in PSOs require a different approach than in typical private organizations since "traditional approaches to management control usually fail for public and not-

for-profit activities" (Hofstede, 1981, p. 193). According to Hofstede (1981), the difference is not in which sector an MCS is used but rather for which activities it will be used. He distinguishes between for-profit and non-profit activities and argues that similar activities can be managed and controlled equally in all sectors. Although profit may not be the focus, there are measurable activities in PSOs for which the traditional private sector approach may be suitable (Hofstede, 1981). However, the public sector generally deals with more complex objectives, challenging to measure and often beyond financial value, requiring a distinctive approach (A. Davila, 2012).

Due to growing demands for accountability, quality, efficiency, and competitiveness, MCSs in PSOs are intended to evaluate and improve performance (Arbaoui & Oubouali, 2021; Arnaboldi et al., 2015; Berland & Drevetton, 2006; A. Davila, 2012; Deschamps, 2019; Elbashir et al., 2021; Vu, Plimmer, Berman, & Ha, 2022; Wiesel, Modell, & Moll, 2011). Although the literature seems to lack consensus on what constitutes performance in the public sector (Berland & Drevetton, 2006; Deschamps, 2019), some research examines the effect of MCSs on employee performance in PSOs (Dahlan, 2021) or the relationship between MC, motivation, and performance (Maharani, 2021; van der Kolk, van Veen-Dirks, & ter Bogt, 2019). However, simply transferring this originally private-sector phenomenon to the public sector is challenging (A. Davila, 2012; Elbashir et al., 2021; Felício et al., 2021). PSOs face difficulties implementing effective MC, such as measurement and reporting systems, and "fail to effectively evaluate performance beyond financial metrics" (Elbashir et al., 2021, p. 1).

While Berland & Drevetton (2006) and Davila (2012) highlight the wide range of stakeholders, others emphasize contextual considerations as essential for MCSs to be effective (Elbashir et al., 2021; Stainer & Stainer, 2000). Vu et al. (2022) suggest that MCS implementations often fail in PSOs due to lacking knowledge about contextual factors, such as conflicting objectives and budget constraints. Arbaoui & Oubouali (2021) investigate MCS implementation in Moroccan universities, linking implementation failures to the simple and superficial transfers of the private-sector tools without further adapting them to the PSO circumstances. Felício et al. (2021) uncover existing MCSs in Portuguese PSOs, also examining their effect on performance, and find that "MCS should be adapted to the characteristics and external environment of each organization" (Felício et al., 2021, p. 600). Similarly, research confirms the importance of both societal and organizational contexts to understanding existing MCSs (Chowdhury & Shil, 2020), including external regulations, the specific organizational structure, and internal employee behavior (Agyemang & Broadbent, 2015).

As mentioned in section 2.2.1, managers play an essential role in the design and use of MCSs, and

perhaps even more so in the public sector (Stainer & Stainer, 2000), specifically related to cultural controls, due to often conflicting political and cultural interests (Elbashir et al., 2021). Vu et al. (2022) emphasize that managers must acknowledge and address these challenges to strengthen innovation and moderate the unfavorable effects. Deschamps (2019) examines how managers at various hierarchical levels prefer different use of MCSs. One interesting finding is that "controls designed as boundaries tend to get progressively stricter down the hierarchy despite the intentions and efforts of top management" (Deschamps, 2019, p. 166). Bracci & Tallaki (2021) show how managerial controls can reduce uncertainties, enhance decision-making and facilitate learning. However, Stainer & Stainer (2000) emphasize the important role of sound management in itself, which no MCS can replace, no matter how effective the system, considering the turbulent environment in which PSOs operate.

2.2.3 Innovation in the Public Sector

There is a general assumption that the public sector is less innovative than the private sector (Bloch & Bugge, 2013; Mulgan & Albury, 2003), even considering the public sector "a passive recipient of innovations from the private sector" (Bloch & Bugge, 2013, p. 133; Windrum, 2008). However, due to increasing pressure to meet societal demands (Bekkers et al., 2011), the public sector must innovate and find better and cheaper solutions to cope with current and future challenges (Albury, 2011; Brorström, 2015; Digmann et al., 2006; Palm, 2020; Wihlman, 2014; Windrum, 2008).

Regarding any differences related to innovation between the public and private sectors, the views diverge. While some view them as "more similar than they are different" (Karlsson, 2019), or draw out the similarities (Bloch & Bugge, 2013) and encourage knowledge sharing across the sectors (Bekkers et al., 2011), others highlight the contrasts, such as the inherent complexity of innovation being reinforced in PSOs (Digmann et al., 2006). One of the main differences between innovation in the public and private sectors, however, is the underlying driver (Kozioł-Nadolna & Beyer, 2021), which in most PSOs includes some societal objectives rather than profit (Arundel et al., 2019; Bloch & Bugge, 2013; Buchheim, Krieger, & Arndt, 2020).

There is little empirical research on innovation in the public sector (Bloch & Bugge, 2013; Bommert, 2010; Mulgan & Albury, 2003; Windrum, 2008). Existing research includes studies on innovation types (Buchheim et al., 2020), the difficulties in defining and measuring innovation (Şandor, 2018), innovation implementation (Brorström, 2015), and the barriers to implementing innovation (Kozioł-Nadolna & Beyer, 2021). Also, several studies examine management innovation in the public sector, such as e.g. Berry (1994), Walker et al. (2011), and Zidonis,

Bilinskyi, & Nazyrov (2020). Still, innovation in the public sector is an understudied research area, especially in relation to its significant part in the overall economy (Arundel et al., 2019; Digmann et al., 2006). Bason (2018) suggests that previous approaches to innovation in the public sector have a too narrow focus by concentrating on improving PSOs internally rather than improving society as a whole.

"A number of examples of definitions of public sector innovations can be found in the literature" (Bloch & Bugge, 2013, p. 137). Digmann et al. (2006) refer to innovation in PSOs as necessary "renewal" due to the responsibility and increasing pressure of providing efficient and enhanced services to citizens, although public structure and bureaucracy do not necessarily facilitate or promote innovation. Corresponding research, identifying several innovation objectives in the public sector, point out quality and efficiency improvement of public services as most prominent (Arundel et al., 2019; Koziół-Nadolna & Beyer, 2021; Taylor, 2018; Walker et al., 2011). Hence, PSOs adopt innovations "to improve the services delivered to users and citizens, with the broad aim of improving quality of life and building better and stronger communities" (Walker et al., 2011, p. 367) and to "address a wide range of societal challenges, including climate change, demographic pressures, urban congestion, and social and economic inequality" (Arundel et al., 2019, p. 789). Another reason is attracting investment from the private sector (Koziół-Nadolna & Beyer, 2021; Taylor, 2018).

The definition of innovation adopted in this thesis (see section 2.1.1) applies to all economic sectors, including the public sector. Still, it has not been used in research on public management (Arundel et al., 2019), giving this study a new twist. For reader's convenience, innovation is defined as something new or improved that significantly differs from previous versions and is either brought into use or made available to others (OECD/Eurostat, 2018). So, innovation is something novel, useful, and utilized (KS, 2022, Nov 16).

Based on this definition, the Norwegian Government defines "innovation in the public sector [as] implementing something new that creates value for the citizens and society, [being] a new or significantly changed service, product, process, organization or method of communication" (The Royal Ministry of Local Government and Modernization, 2019-2020, p. 7).

Arundel et al. (2019) point out some issues when applying OECD/Eurostat's (2018) definition in the public sector. First, PSO managers often believe that innovation must lead to something better, even though the definition contains no prerequisites for innovations to be normatively better than previous versions. "An innovation only needs to provide a significant change compared to what

was previously in use" (Arundel et al., 2019, p. 792). Second, innovations in the public sector often include new or improved services and processes that take time to implement, which makes it challenging to assess whether the innovation has been brought into use or made available to others (Arundel et al., 2019).

The literature identifies various barriers to innovation in the public sector, including regulation limitations, rigid organizational structures, risk aversion, resource constraints (funds and available time), lack of direction, incentives and measurement, flawed management, change resistance, hierarchical attitudes, and a silo mentality (Bloch & Bugge, 2013; Brorström, 2015; Taylor, 2018). Bloch & Bugge (2013), addressing the lack of a common innovation understanding and measurement framework for the public sector, found that risk aversion is not necessarily as significant an impediment to innovation in PSOs as the literature tends to assume. Existing research also suggests the pitfall of focusing too much on political approval in prioritizing innovation measures rather than identifying real needs. "Even though an innovative idea may be legitimized through political decisions, there might still be no demand for it" (Brorström, 2015, p. 177).

Focus on developing and facilitating an innovation culture and required management skills are identified as important factors in overcoming these barriers (Albury, 2011; Arundel et al., 2019; Digmann et al., 2006; Taylor, 2018). Albury (2011) suggests that innovation requires managers to move away from the traditional 'public-sector obsession' with methods and process controls and rather have clear, ambitious goals while allowing employees to explore possibilities within that scope. Brorström (2015) suggests that innovations in the public sector would benefit from less structural and formal processes, such as the funding system. Also, PSOs benefit from involving employees, service users, and politicians (Digmann et al., 2006; Taylor, 2018), and since politics have a significant impact on PSOs' priorities and targets, political motivation for innovation can be decisive in whether public organizations innovate (Bloch & Bugge, 2013; Taylor, 2018).

2.2.4 Innovation Management Control in the Public Sector

Little is known about IMC in the public sector (Ganguly & Das, 2020). The general belief is that the use of MCSs for innovation activities depends on the respective context, also applicable to the public sector (Dilan & Aydin, 2019), of which several contexts have been studied; however, mainly in the private sector (Ganguly & Das, 2020).

Nuhu et al. (2019) examine the impact of MCSs, specifically diagnostic and interactive controls, on organizational change and performance in the public sector, of which 'organizational change' may

be transferable to an innovation perspective a certain extent. They find no effect of diagnostic controls but positive effects of interactive controls on both. Jacobsen & Andersen (2014) analyze how monetary incentives and sanctions are related to innovation and find that the use of PM tools can promote innovation and performance. Otherwise, there is research on innovative MCSs in the context of NPM (Chowdhury & Shil, 2016), a review of the conceptualization and measurement of public sector innovations (Kattel et al., 2014), while Arundel et al. (2019) propose a framework for measuring innovation in PSOs.

According to Bekkers et al. (2011), innovation in the public sector involves two considerable aspects, namely, the governmental facilitation of innovation and the innovation capacities within PSOs. Although not explicitly focusing on MCSs, this seems nonetheless applicable. They emphasize the importance of organizational, managerial, and cultural considerations, recurring topics throughout the literature review. PSOs operate in highly dynamic environments that per se require more than effective tools (Stainer & Stainer, 2000), reinforcing the important role of management in facilitating something as complex as innovation while also finding an appropriate MCS to ensure performance and efficiency (Lill et al., 2020). According to Palm (2020), PSOs often have cultural and structural suitability for control but not innovation, while Digmann et al. (2006) point out the employees in PSOs as innovation drivers.

However, the [practical] design and use of MCSs for innovation activities in the public sector (Ganguly & Das, 2020) constitute a significant gap in existing research and make this thesis an important contribution to the previous literature. Resembling this study, Ganguly & Das (2020) investigated the relationship between MCSs and innovation in Indian PSOs using the LoC framework (see section 2.3.2 for details on the LoC framework). They found that innovation and control can coexist and that PSOs often use a combination of all four levers, of which enabling controls are the most facilitative to innovation. What distinguishes their study from this one is mainly the geographical difference and the data collection method, as they used quantitative data. Otherwise, no similar accessible literature on the topic of this thesis was identified where all three concepts, as explained in Section 2.1, are included.

2.3 Theoretical Framework

“A framework is a conceptual structure for categorizing and systematizing complex information” (Strauß & Zecher, 2013, p. 256). It is important for investigating the research problem, as it explains how and why the given variables are related (Sekaran & Bougie, 2016, p. 72). This study explores MCSs for innovation activities in the public sector. Thus, it needs a theoretical framework

explaining the relationship between MCSs and innovation to have a foundation for the findings' analysis, discussion, and conclusion. The following section provides a brief review of different MCS frameworks to identify the most suitable framework related to innovation and to explain and justify the choice of framework for this thesis. Afterward, the selected framework is presented and explained in more detail.

2.3.1 MCS Frameworks

While general MCS literature provides information on different types of control systems, an MCS framework is used to study the various parts of a specific MCS (Strauß & Zecher, 2013). As this study seeks to reveal the existing MCSs for innovation activities in the public sector, an MCS framework suitable for innovation activities helps identify what existing MCSs consist of.

Strauß & Zecher (2013) review different MCS frameworks, such as the frameworks by Simons (1995) and Otley (1999), among others. While the former takes an innovation and control approach, the latter takes a more traditional command and control approach. Further, Lill et al. (2020) provide a systematic review of the MCS literature for innovation activities. In line with Strauß & Zecher (2013), they find that Simons' (1995) levers-of-control (LoC) framework is the most suitable concept when studying MCS for innovation activities (Lill et al., 2020, p. 933).

Extensive research reveals that the LoC framework is being used for numerous purposes with increased popularity (Martyn, Sweeney, & Curtis, 2016), such as exploring the antecedents of control systems (Widener, 2007), the introduction of new PMSs (Pilonato & Monfardini, 2020), or reinforcing the connection between MCS and change management (Baird et al., 2019). Others examine various relationships, such as control and creativity (Speklé et al., 2017), interactive and diagnostic controls at different stages (Su, Baird, & Schoch, 2017), flexible cultures, and the emphasis on the LoC framework (Heinicke, Guenther, & Widener, 2016), or the enabling and constraining levers, management innovation, and organizational performance (Baird et al., 2019).

As Collier (2005) suggested, several studies have used Simons' four LoC to explore the effect of MCS on organizational performance (Baird et al., 2019; Su, Baird, & Schoch, 2015; Widener, 2007). It has been used to analyze the positive and negative dimensions of controls (Tessier & Otley, 2012), the use of MCS across different modes of innovation (Bedford, 2015), to explore the balance and tensions between controlling and enabling MCSs (Mundy, 2010), and the interactive and diagnostic use of budgets (Frow, Marginson, & Ogden, 2010; Hofmann, Wald, & Gleich, 2012). Additionally, various aspects of the framework are examined, such as ambiguities with the

different levers (Tessier & Otley, 2012) or the concept of balance between them (Kruis, Speklé, & Widener, 2016).

More recent studies examine the effect of MCS on innovation activities during a strategic change process (Biswas & Akroyd, 2022) and assess the use of controls in an innovative setting, revealing the relationships and tensions between the levers (Barros & da Costa Ferreira, 2022).

Based on the review in this section, the choice of foundation for this thesis fell on Simons' (1995) LoC framework, illustrated in Figure 3 (Simons, 1995, p. 7). The following section provides a more detailed presentation and explanation of the framework and the various levers.

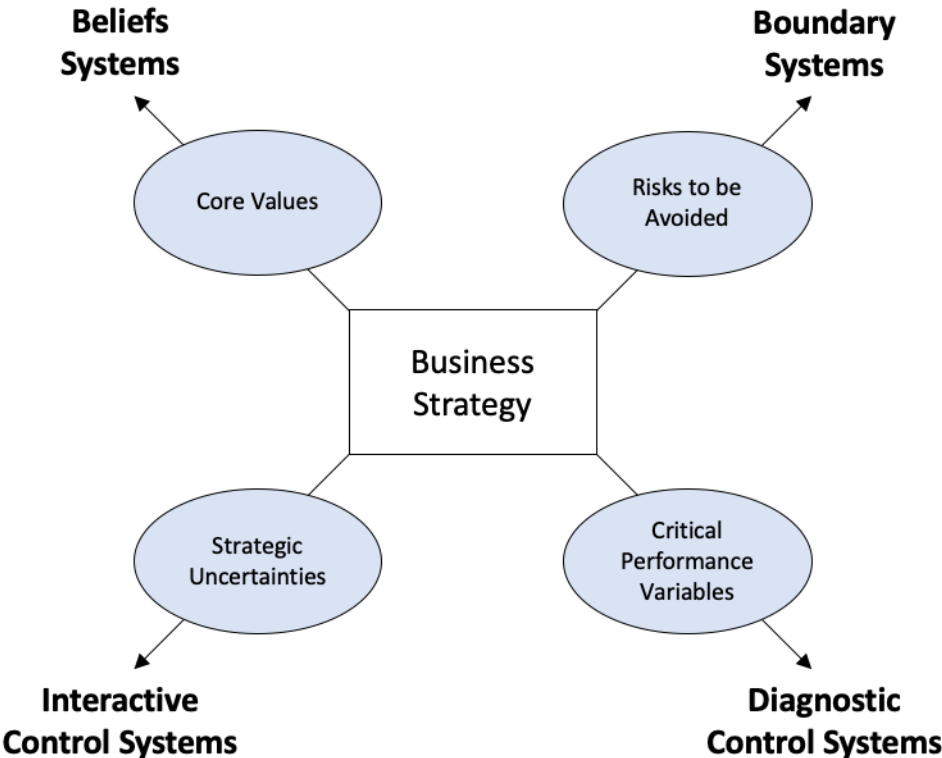


Figure 3. Simons' (1995) Levers-of-Control Framework

2.3.2 Simons' LoC Framework

The framework was initially called “Controlling Business Strategy: Key Variables to be Analyzed” (Simons, 1995, p. 7), the variables being the four concepts of core values, risks to be avoided, critical performance variables, and strategic uncertainties. Organizations need to analyze and understand these concepts considering their strategy to successfully implement (Simons, 1995). Each concept has its control system (lever), seeking different effects.

Belief systems, typically as explicitly communicated vision or purpose statements, encourage and influence employees' behavior toward seeking new opportunities related to core values or overall objectives. Boundary systems, such as codes of business conduct, strategic planning, or even budgets, delineate and frame this behavior with rules and limits related to sanctions and punishment to avoid unwanted risks and thereby enable the highest degree of flexibility and creativity. Together, these two systems form the acceptable "playground" for employees' exploration and opportunity-seeking (Simons, 1995).

Diagnostic control systems, mainly constituting profit plans and budgets, aim to ensure predictable goal achievement by encouraging, measuring, and monitoring organizational outcomes, and correcting deviations from preset performance standards. Diagnostic controls are mainly used to verify that "everything is on track" (Simons, 1995, p. 76), making it critical that they measure the right variables. Diagnostic controls can be challenging to use in innovation settings and for intangible objectives such as success due to the lack of measurability and the inherent complexity and uncertainty of innovation (Simons, 1995).

Interactive control systems, such as project management systems, are used to respond to perceived opportunities and threats, learn about strategic uncertainties, and trigger experimentation by managers involving themselves in employees' tasks and decision-making, encouraging opportunity-seeking and facilitating bottom-up initiatives. "A leader not only chooses where to allocate his or her attention but also signals where other participants should allocate their attention" (Simons, 1995, p. 105).

It must be noted that measurement and feedback systems can be used both interactively and diagnostically (Martyn et al., 2016; Simons, 1995), as the distinction between the diagnostic and interactive controls does not depend on design or tools but rather on how the controls are used (Deschamps, 2019).

The enabling levers (beliefs and interactive control systems), creating positive and inspirational forces, are balanced by the constraining levers (boundary and diagnostic control systems) (Baird et al., 2019). This is also known as 'the dual role of controls' (Tessier & Otley, 2012). All systems together balance "creative innovation and predictable goal achievement" and provide "a dynamic tension that allows the effective control of strategy" (Simons, 1995, pp. 7-8). The use and distribution of the individual levers depend on the context, but a combined and balanced use of all four levers helps generate the essential flexibility and dynamic tension for successful innovations (Bedford, 2015; Lill et al., 2020).

Chapter 3: Methodology

This chapter aims to provide a detailed overview of the research approach, procedures, and thinking to equip the reader to understand the results and assess whether the study is plausible. In short, the research problem and questions led to an exploratory research approach and an inductive research strategy. After purposive sampling, qualitative data was collected through interviews and analyzed following a standard procedure for qualitative content analysis. This chapter will, however, explain every step in more detail, structured as follows: First, a description of the research approach and design, followed by the sampling strategy, and two separate sections on the data collection and the data analysis. Finally, the research quality is discussed, including comments on reliability and validity.

3.1 Research Approach and Design

The research problem and objective determine the most appropriate method and procedure (Ghuri, Grønhaug, & Strange, 2020). The research design represents the strategy developed for collecting and analyzing data to answer the research questions (Sekaran & Bougie, 2016). This thesis sought to explore existing management control mechanisms for innovation activities in the public sector and assess whether these seem to contribute to efficient and effective innovation processes. Thus, new narrative data, i.e., words (Bui, 2014, p. 14), had to be obtained through qualitative data collection. Also, previous literature has recommended a qualitative approach when researching MCS and something as complex as innovation (Barros & da Costa Ferreira, 2019). This thesis addressed this call and used a qualitative exploratory research approach, often used when existing literature is insufficient to answer the given research questions (Sekaran & Bougie, 2016).

3.2 Sampling Strategy

Although sampling, i.e., selecting participants relevant to the research questions, is often linked to quantitative research (Ghuri et al., 2020), it is as essential for qualitative research (Sekaran & Bougie, 2016, p. 265). In this study, the participants were selected based on expertise relevant to the research questions. Thus, the strategy was purposive sampling, a non-probability approach typical for qualitative research (Bell, Bryman, & Harley, 2019; Sekaran & Bougie, 2016). It is important to note that “purposive sampling does not allow the researcher to generalize to a population” (Bell et al., 2019).

Purposive sampling includes different approaches, such as maximum variation, snowball, and stratified purposive sampling Bell (Bell et al., 2019). The initial intention of this study was maximum variation sampling “to ensure as wide a variation as possible in terms of the dimension of interest” (Bell et al., 2019, p. 390). The Norwegian public sector has three levels: state, county, and municipal. Additionally, the public sector consists of many different disciplines. In case of noteworthy differences between the different levels and areas, the intention was to achieve the most comprehensive variety possible among the respondents, preferably as many participants from each. However, it quickly became apparent that only some public organizations operate at the county level. Secondly, it would have resulted in too many participants, considering the thesis’ relatively short time horizon. Thus, the course slightly changed.

In one case, snowball sampling was used as the representative responsible for innovation recommended an additional interview with one of the subordinates in the same organization. Also, stratified purposive sampling was added, which includes “usually typical individuals within subgroups of interest” (Bell et al., 2019, p. 390). The intention was still to ensure as much variation as possible but with a realistic number of participants for this thesis, mainly including the most typical public sector organizations, i.e., general government organizations.

3.2.1 The Sample

In identifying the most relevant respondent within the approached organizations, the criterion was to either have responsibility for managing and controlling innovation activities or have a general overview of how these activities are managed and controlled. Websites and organizational charts were used to find relevant contact information to establish the initial contact. Except for one case, this identified the right candidate on the first try or at least led to someone who could help identify them.

Initially, the sample consisted of 9 participants, all meeting the pre-determined criterion (see Table 1 for details). The distribution of the various levels in the public sector was as follows: Five representatives at the state level, one at the county level, and three at the municipal level. However, as explained further in section 3.3.2, results in this thesis only derive from state and municipal representatives, i.e., the final selection, excluding the county level, consisted of 8 participants whose respective disciplines within the public sector are not revealed in this thesis due to privacy and ethical guidelines.

Participant	Level	Position	Duration
P1	Municipal	Municipal Manager	59:15
P2	Municipal	Head of Innovation Unit	53:35
P3	Municipal	Project Manager	72:37
P4	County	County Director	-
P5	State	Senior Advisor	29:53
P6	State	Department Director	44:21
P7	State	Research Director	56:15
P8	State	Department Director	49:33
P9	State	Section Manager	63:05

Table 1. Overview of participants and interview duration

3.3 Data Collection

Data collection is a critical part for answering the research questions (Bell et al., 2019). The method describes how information was obtained from the source and depends on “an overall judgment on which type of data is needed for a particular research problem” (Ghauri et al., 2020, p. 95). Data collection can be done through communication or observation. As this thesis sought to explore existing management control mechanisms for innovation activities in the public sector, communication as data collection method seemed most suitable, particularly in the form of interviews, which “are often considered the best data collection methods” (Ghauri et al., 2020, p. 115). Interviews can be conducted structured, unstructured, or semi-structured (Sekaran & Bougie, 2016). As structured interviews seemed inappropriately in an exploratory setting due to the fixed response categories, while the research topic and the sample for this study are pre-determined, semi-structured interviews became the natural and most suitable choice. The aim was to ensure that all specified questions are actually asked, and at the same time to facilitate the most natural environment possible for the respondent and thus enable honest, personal, and informative answers. The data collection took place in the period from March 2022 to April 2022.

3.3.1 The Interview Guide

To evoke useful information in the interviews, it is crucial to formulate the proper questions (Gay, Mills, & Airasian, 2012). Due to the exploratory nature of this study, an interview guide (Appendix A1) was formed with mostly open-ended questions to enable unanticipated information. The questions were divided into three main themes, reflecting the three research questions, respectively. The first set of questions was linked to RQ1, addressing the respective organization, including its overall relationship to innovation, to provide a background and basis for further research. The second part addressed RQ2 and was further divided into four categories, reflecting Simons' (1995) LoC framework. Each category represented a different lever and contained associated questions to identify the existing MCSs for innovation activities. The aim was to ensure detailed information, by systematically going through each part of the framework. Finally, the last set of questions was about whether the discussed tools and methods work. This part was directly linked to RQ3 and thus aimed to uncover whether the existing MCSs in the respective organization contribute to efficient and effective innovation processes.

To evoke useful information in the interviews, it is crucial to formulate the proper questions (Gay et al., 2012). The challenge for this study was to exclude expressions to which the participants probably have no relation, such as belief systems. In retrospect, it has become clear that this unfortunately led to some of the topics not being covered as thoroughly as intended, also indicating insufficient knowledge in advance. There were, for example, questions about *how* something is measured but no specific follow-up questions about *why*, i.e., what the measurements are used for, or how they are used, or by whom. Ideally, follow-up questions should have been sent to the participants after the interviews to obtain more complementary answers and thereby perhaps ensure better results and findings. However, at the time this was uncovered, it seemed unfeasible due to the time frame. This also had a significant impact on the data analysis, as explained in more detail in section 3.4.

3.3.2 The Interviews

Four of the interviews were conducted on the premises of the participating organization, while the rest were conducted digitally via Teams. The interviews lasted from approximately 30 to 70 minutes, the shortest of which was interrupted by the participant due to another meeting. With the participants' consent, the interviews were recorded using a mobile app approved in research settings by the Norwegian Centre for Research Data (NSD). Recording the interviews is a trustworthy method to capture the original answers and facilitate data analysis, as the data can

be accessed after the interview is over (Bell et al., 2019). In addition, it facilitates good flow, as the interviewer does not have to take notes and can concentrate on the conversation. However,

The general perception of the interviews is that the participants had a good knowledge of the innovation activities within their organization, also indicating great internal focus and attention to the topic. Simultaneously, there were indications of considerable variations regarding knowledge of the actual management control of innovation activities. This could possibly be related to the hierarchical position of the participant, relating to whether they themselves have something to do with the management control. Based on the information received, it may seem that managers in higher positions have greater knowledge of overall management control in the organization, while lower levels can talk more about what these MCSs actually look like in practice. Thus, it is conceivable that it would be useful to conduct two interviews per organization at two different hierarchical levels to ensure both overall and practical information.

After the interviews, it is critical to start transcribing as soon as possible, while it is still fresh in the memory (Ghauri et al., 2020). Due to various circumstances, the interviews from this study were not transcribed until several weeks later. Only then was it discovered that follow-up questions to the participants would have been necessary, as mentioned in section 3.3.1. In addition, it turned out that the content of one of the recordings was almost unidentifiable. Only fractions of the participants' answers were understandable, making it irresponsible to use them further in the analysis. The choice was made to exclude that recording from the study, as mentioned in section 3.2.1. Unfortunately, this recording was the interview with the one representative at the county level, so the exclusion significantly reduced the desired variety of the sample. However, the remainder of the interviews were fully transcribed.

3.4 Data Analysis

The data collection and the transcription of the interview recordings were followed by "a multistage process of organizing, categorizing, synthesizing, analyzing, and writing about the data" (Gay et al., 2012, p. 467). More specifically, the data was analyzed through a standard procedure in qualitative content analysis (Mayring, 2014) and guided by Simons (1995) LoC framework (Figure 3, p. 16), and the research questions.

As mentioned in section 3.3.1, the transcription process revealed some significant issues. Due to the focus on excluding terms from the interview questions that the participant has no relation to, such as belief systems, several important questions, especially follow-up questions, were not

asked, also indicating a lack of knowledge prior to the interviews. The participants should have been sent the most central follow-up questions after the interviews to cover this gap. However, as described in section 3.3.2, the interviews were not transcribed until several weeks after the interviews were conducted, nor were notes taken during the interviews or immediately afterward, hence, the interview setting was no longer fresh in memory

Initial to the data analysis process, the transcripts were browsed several times to refresh the general perception before starting the actual procedure of scanning through the interviews and making general notes. Each transcript was then read carefully, and relevant words and phrases were marked and further sorted into categories. The categories and associated labels were physically connected and organized on a cardboard sheet. Various themes emerged and were further categorized by significance, considering the theoretical framework and the research questions.

3.5 Research Quality

3.5.1 Reliability

Reliability usually refers to testing tools in quantitative research. When applied in qualitative research, it refers to the reliability of the data collection methods, i.e., assessing whether the data serves its purpose (Gay et al., 2012). As described in section 3.3.1, the transcription process revealed that the participant should have been sent several follow-up questions, as some aspects were not discussed during the interviews, as originally intended. As this was uncovered several weeks after the interviews were conducted, the choice fell on not sending these follow-up questions, due to the limited time frame of this study. Thus, the data analysis lacks some important aspects considering the research questions, as illustrated in section 3.3.1.

3.5.2 Validity

Validity originally associates with measurements in quantitative research and must therefore be interpreted somewhat differently in a qualitative context (Bell et al., 2019). "Two common terms used to describe validity in qualitative research are trustworthiness and understanding" (Gay et al., 2012, p. 392), of which trustworthiness refers to whether a study is credible, transferable, dependable, and confirmable.

To ensure credibility, it is important to start the transcribing process as soon as possible after finishing an interview (Gay et al., 2012). Due to various circumstances, the transcription process

was postponed until a later date and was not completed until several weeks after the interviews were conducted. Also, due to time pressure, the finished transcripts were not sent to the participants for review and approval, leading to a significantly weakened validity of this study.

There are several strategies to increase the validity of qualitative research, including triangulation, which means using multiple methods (Gay et al., 2012). In this study, a combination of observation and interviews could have been useful to ensure a greater degree of validity through a more holistic approach. Collected data and associated findings would probably have given a broader and more accurate picture of the ongoing situation in the PSOs regarding the existing MCSs for innovation processes. However, due to the limited time frame for this study, this approach seemed infeasible in the context of this thesis.

3.5.3 Ethics

Early in the research process, a data collection plan was drawn and sent to NSD for approval to ensure ethical research aligned with current guidelines. This application process required careful consideration of important aspects of the study so that all necessary measures could be taken. As soon as the NSD approval (Appendix A2) was received, initial contact with relevant participants was established. All participants were sent an information letter containing descriptions of the study and the participant's rights. After receiving written approval from the participants, the time for the interview was set, and the data collection could begin. The interviews were recorded with an app approved by NSD for data collection in a research context. The files were automatically transferred to a closed database and thus inaccessible in the app. The transcripts were assigned numbers to hide the participants' identities, and the recording files were deleted on 1 June 2022, the originally set end date for the research process. In summary, this study is in line with current ethical guidelines, as these were followed throughout the research process.

Chapter 4: Results and Discussion

This study explored MCSs for innovation activities in the public sector, using qualitative data from semi-structured interviews explained in chapter 3.3, and aimed to answer the following research questions:

RQ1: Is innovation relevant to public sector organizations?

RQ2: What are the existing MCSs for innovation activities in the public sector?

RQ3: To what extent do they contribute to effective and efficient innovation processes?

This chapter presents and interprets the most significant interview results with discussions against the relevant theory from chapter 2. For the reader's convenience, the presentation and discussion of the findings are combined to avoid unnecessary repetitions and make it easier to pursue the arguments.

The chapter follows the structure of the interview guide (Appendix A1) and is organized into three focus areas, reflecting the three research questions, respectively. The first area is linked to RQ1 and deals with general findings to provide a sound foundation and understanding for further exploration. The second area addresses RQ2, considering Simons' (1995) four LoC, described in chapter 2.3.2, while the last part aims to answer RQ3. Under each focus area, related interview findings are presented, discussed, and linked to relevant theory. Finally, each focus area presents a summary, which together form the basis for the conclusion in the last chapter of this thesis.

4.1 General Findings

The findings in this section address RQ1 and form an important basis for understanding the societal, organizational, and structural context of PSOs, as this is essential for understanding the existing MCSs (Agyemang & Broadbent, 2015; Chowdhury & Shil, 2020), addressed by RQ2 and RQ3 in sections 4.2 and 4.3, respectively.

4.1.1 An Innovative Public Sector

Research points to a general assumption that the public sector is less innovative than the private sector (Bloch & Bugge, 2013; Mulgan & Albury, 2003). While this may indicate limited attention to innovation in PSOs, findings from this study suggest a rather strong focus on innovation. First, all participants recognize the necessity of innovation for their organization, illustrated by

statements such as: *"Innovation is essential to be able to respond to our social mission"* (P1) and *"Our goals are all heavily dependent on innovation"* (P8). Although focusing on innovation is not the same as being innovative, the statements depict a close connection to the organizations' objectives and missions, indicating that innovation forms an integral part of their operations. One participant said: *"Our innovation activities are closely linked to the development of our services"* (P6). Another said: *"We anchor the innovation projects in our main goals"* (P2), both suggesting an interrelationship between innovation activities, organizational objectives, and primary operations – mostly service delivery. Terms such as "social mission" and "service delivery to citizens" were frequently used, which the literature identifies as one of the most important innovation drivers in the public sector (Arundel et al., 2019; Bloch & Bugge, 2013; Buchheim, Krieger, & Arndt, 2020; Koziół-Nadolna & Beyer, 2021). Also, the following quote may contradict the initial assumption even more strongly: *"The establishment of our organization is an innovation per se. Innovation is the very basis of our existence"* (P5).

Secondly, the findings reveal several of the represented PSOs at both state and municipal levels as drivers for innovation within their respective industries. One respondent said their *"operational task is an innovation driver and a method of operation that requires innovation"* (P9). As the industries in question include many private organizations, this may indicate that the public sector is an innovation driver also in the private sector. Another participant said that they *"operate in one of the country's least innovative industries"* in which they *"help drive innovation"* and adds that their *"innovation processes are often followed by standardization"* (P6). This is consistent with the literature, which points out that the public sector is behind many important innovations adopted by other sectors, although they may not always receive the deserved credit for it (Bloch & Bugge, 2013). This can be substantiated by the following statement from a PSO where the partners are mainly private actors:

"We promote innovation in the market and industry by encouraging partners to innovate. We lead the market in the direction we want by, for example, requiring certain certifications or innovative tools and systems, which 'force' the partners to adopt innovative solutions" (P5).

Related to the initial discussion on the innovation focus, being a driver for innovation seems to be high on the agenda, illustrated by the following quote: *"We strive and are supposed to be a driving force in facilitating business development and have dedicated resources working extensively with such innovation projects"* (P1). While some assume that the public sector is less innovative and "a passive recipient of innovations from the private sector" (Bloch & Bugge, 2013, p. 133; Windrum,

2008), findings from the interviews in this study suggest that this is not the case, and perhaps rather the other way around.

At the same time, the findings indicate that the public sector as an innovation driver is dependent on external cooperation, including "holistic and interdisciplinary cooperation with business, academia, citizens, etc." (P2) and "*research collaboration with external actors*" (P6). "*Innovation initiatives can come both from employees and managers, but also from external entrepreneurs, research institutions and others*" (P8). At the state level, this includes "*international cooperation with an open-source strategy for developing programs and systems that can communicate across borders*" (P6) and "*cooperation with third world countries*" (P9). Accordingly, research proposes that PSOs benefit from involving employees, service users, and politicians (Digmann et al., 2006; Taylor, 2018), while the interview results imply an even broader ongoing involvement. Bason (2018) suggests that previous approaches to innovation in the public sector have a too narrow focus by concentrating on improving PSOs internally rather than improving society. The findings of this study indicate that the public sector not only acknowledges the benefits of cooperating with others but also recognizes the necessity, as "*innovation occurs on a systemic level across the public sector and through interaction and co-creation with other actors in both the public, private and non-profit sectors*" (P9). In addition, it can be assumed that one organization or one sector alone tends to think too narrowly, illustrated by the following quote, also emphasizing the need for collaboration:

"We have a lot of cooperation with external actors in the private sector, and with large research institutions and other actors in the EU to bring in impulses. We want cooperation with up-and-coming market players who often seem to be the first to come up with new things" (P6).

Considering Norway in particular, the participant goes on: "*We often have good ideas but are not strong in commercializing them. Collaboration across borders is, however, easier because of trust and an overall unwritten rule about sharing knowledge*" (P6). While the first part of the quote can be related to the dependence on cooperation with others, the last part of this quote can be linked to the literature that innovation requires knowledge sharing (Bekkers et al., 2011). That the public sector has an unwritten rule about sharing knowledge, at least in Norway, as suggested here, can be interpreted as a fulfillment of this requirement for innovation.

In addition, several of the participants refer to their superior ministries in connection with innovation activities, derived from phrases like "*cooperation with the ministry*" (P8), "*orders from the ministry*" (P9), and "*the ministry as the client*" (P6). This is consistent with the literature, which

points out that political motivation for innovation can be decisive for whether public organizations innovate, as politics significantly influences PSO's priorities and goals (Bloch & Bugge, 2013; Taylor, 2018).

To summarize, the findings of this study do not seem to be consistent with the theory that PSOs often lack the ability to innovate (Palm, 2020), but rather that innovation is an integral part of the public sector.

4.1.2 The Typical Structure and Organization of Innovation Activities in PSOs

Findings suggest a variation in the structure and organization of innovation activities in the public sector. While some have "*a combination of continuous and project-based innovation activities*" (P7), "*both structured in projects and unstructured in daily operations*" (P5), others "*prefer to organize in projects*" (P3), "*following typical project methodology*" (P8), "*with the different stages, documents, and checkpoints adapted to each project*" (P1). This is consistent with the literature that organizational forms like projects are considered the most suitable platform for carrying out something as complex as innovation activities (Arvidsson, 2009; Bakker, 2010; Burke & Morley, 2016; Hanisch & Wald, 2014). However, there also seems to be a trend to explore new ways of conducting innovation, as they have recognized the need to "*radically change the ways of work*" (P7), specified by the following statement:

"The tradition is to organize innovation in projects, but we are moving more towards working systemically across the public sector, and more challenge-based on internal needs" (P9).

At the state level, the structure seems to depend on the context and time horizon: "*Requests from the ministry are set up as projects or challenge-based work. Challenges with a shorter time horizon are solved through workshops and sprints*" (P9). At the municipal level, the structure seems to depend on available resources, more specifically "*external funding*" (P3).

In addition, there are variations to which relationship or function the PSO has in projects, as some are "*often in the position as project owner*" (P8), while others are involved in several projects that are "*managed and organized by other actors, and [...] without any responsibility for management control*" (P7). In some cases, roles and responsibilities are distributed between different levels in the public sector, e.g., "*a ministry as the client with overall responsibility and decision-making authority, while the project manager is located in the operational agency below*" (P6).

Also, findings propose that PSOs at the municipal level struggle in having a central, general overview of all ongoing innovation activities: "*We currently have no central overview of the bottom-up initiatives*" (P1). While top-down innovation measures are initiated and managed centrally, bottom-up initiatives often take place at lower levels within daily operations and are more challenging for the organization to follow. "*We don't have a central overview of the informal, unstructured innovation out there in the various service locations*" (P2). Accordingly, at the municipal level in the public sector, "*top-down innovation measures are formal and structured, often project-organized*" (P2), while the remainder of innovation activities is "impossible to quantify" (P1).

4.1.3 Balancing Innovation and Complex PSO Specificities

The participants in this study represent a varied selection of PSOs from the Norwegian public sector at both state and municipal levels, as described in section 3.2.1. For these organizations, the "*primary task is the operation of statutory tasks*" (P3), more specifically "*the delivery of statutory services to residents*" (P2). Another description is as follows: "*We are an operational agency under political leadership and receive orders from the ministry*" (P9). This is consistent with some of the main features found in the literature, namely that PSOs are politically controlled (Digmann et al., 2006) and responsible for providing public services (Felício et al., 2021; Taylor, 2018). Another prominent feature of PSOs is the wide range of stakeholders (Berland & Dreveton, 2006; Davila, 2012) and the impact of political and social dimensions on decision-making (Digmann et al., 2006; Drennan & McConnell, 2007), identified as follows: "*We must constantly deal with various stakeholders, such as politicians, managers and employees, financiers, citizens, and partners like academia, private and other public actors*" (P1). The literature also points out the typical bureaucratic and inflexible structure and regulations (Brorström, 2015; Digmann et al., 2006). Together, these features constitute a complex environment for PSOs, as summarized in the following statement:

"Our organization is an incredibly complex ecosystem. We are made up of many actors, a heavily rooted system, and many very established processes that are difficult to change and take time to change. As a public organization, we also must comply with laws and regulations, and there are many external conditions requiring system setting" (P7).

As reviewed in chapter 2, both innovation and the public sector are known for complexity. Derived from the interviews, this appears to be a prominent common feature for the represented PSOs in this study. Thus, based on the findings, it can be assumed that the inherent complexity of innovation is being reinforced in PSOs, as suggested by Digmann et al. (2006). Considering

innovation, the participant continues that "*rapid developments and innovation must be balanced against traditional systems*" (P7). The participant's tone of voice and raised eyebrows may indicate that this poses a challenge. Another participant states that "*it is important to find the balance between operation and innovation*" (P1). These comments may indicate that PSOs either seek to fit innovation into their environment or struggle with the combination, or both. Regardless, the following statement depicts some of the challenges for PSOs in innovation settings:

"Working with innovation in the public sector is like patchworking. All the funding application processes, all collaborations with various actors like academia, other public actors, and the voluntary sector. There are many, many dependencies, and you must cope with having many thoughts in your head at once" (P3).

According to the literature, innovation is often related to high resource consumption (Bedford, 2015; Lill, Wald, & Munck, 2020), which findings in this study may support. In line with the results in section 4.1.2, the findings suggest that due to rigid organizational structures, pressures on performance and delivery, and limited resources in terms of "*available time and people*" (P6), PSOs often "*prefer to organize innovation activities in projects*" (P3). However, the opportunity to carry out innovation projects appears to be "*dependent on external funding*" (P3), which seems to vary considerably across the PSOs. While some state that they are allocated a certain amount of innovation funds through the state budget, others must "*finance innovation projects with their own income from the services*" (P6) they provide. Moreover, the "*external funds are linked to hierarchical systems*" (P3), presenting another challenge to which the participant responds with the following: "*We try to make those frames as flexible as possible and perhaps tone down the public administration a little to exploit the potential*" (P3).

4.1.4 Summary of General Findings

Based on the previous sections, innovation appears to be a necessity for the entire public sector and is high on the agenda in all the represented PSOs, which is consistent with existing literature (Albury, 2011; Brorström, 2015; Digmann et al., 2006; Palm, 2020; Wihlman, 2014; Windrum, 2008). Unlike general assumptions that the public sector lacks the ability to innovate (Palm, 2020), the findings from this study suggest that the public sector is an innovation driver, also for other sectors, but at the same time depends on cooperation across the public, private, and non-profit sectors, also beyond national borders. The structure and organization of innovation activities appear to vary, of which projects emerge as the most common structure, while other ways of working are being explored. Consistent with the main features of PSOs found in the literature (Berland & Dreveton, 2006; Brorström, 2015; Davila, 2012; Digmann et al., 2006;

Drennan & McConnell, 2007; Felício et al., 2021; Taylor, 2018), the public sector seems to be characterized by a high degree of complexity, which may be reinforced in connection with innovation activities (Digmann et al., 2006), due to the inherent complexity of innovation (Bedford, 2015; Lill et al., 2020).

4.2 The Existing Innovation MCSs in the Public Sector

The LoC framework is used for numerous purposes (Martyn et al., 2016) and is the most suitable concept when studying MCSs for innovation activities (Lill et al., 2020, p. 933). This section addresses RQ2: "What are the existing MCSs for innovation activities in the public sector?"

4.2.1 Beliefs and Boundary Systems

The findings suggest that all PSOs have beliefs and boundary systems for their innovation activities, which this section elaborates on and illustrates in more detail. According to Simons (1995), beliefs and boundary systems form the acceptable "playground" for employees' exploration and opportunity-seeking. While beliefs systems are related to core values, boundary systems are the risks to be avoided (Figure 3, p. 16). Considering innovation, the beliefs and boundary systems must be understood in the context of specific activities and processes, i.e., as the core values and risks to be avoided for the PSOs' innovation strategy. The participants were asked questions approximately as "How are employees encouraged to pursue innovation?" and "How is the desired scope and direction of innovation initiatives communicated?" (Appendix A1).

Beliefs systems aim to encourage and influence employees' behavior toward seeking new opportunities related to core values or overall objectives, typically communicated as vision or purpose statements (Simons, 1995). Consistent with the theory, the findings reveal that terms such as "*vision*", "*social mission*", "*innovation strategy*", and "*overall objectives*" were recurrent in all interviews. Those organizations that did not have an explicit strategy for innovation explained that the overall strategy for the organization is so dependent on and directly linked to innovation that a separate strategy would be redundant. Typical statements at both state and municipal levels involved "*overall strategies with associated sub-goals [which] set the course for all innovation activities*" (P9) or "*an overall innovation strategy that states how we want to pursue innovation, to influence the culture to be more innovation-oriented*" (P1).

The main difference seems to lie in how and to what extent these are communicated. While one participant referred to "*some innovation-related formulations in a strategy document*" (P7), others listed numerous explicit modes of communication, such as "*values and overall statement strategies*

that are communicated in multiple channels, including websites, the quality system, formal and informal meetings, news, business plan processes, etc." (P6). Otherwise, one of the PSOs stood out by adding 'feasibility studies' as part of the beliefs system, involving that "*employees have the freedom to follow up on innovative ideas and carry out 'feasibility studies' to investigate in the market what is possible or not possible to achieve, typically innovative ideas that may seem impossible or financially unsound*" (P5) delineated and framed by the following: "*Here, the employees do not have decision-making authority themselves, and must involve the management*" (P5), where the latter can be interpreted as constituting the boundary system.

Boundary systems aim to achieve the highest degree of flexibility and creativity by delineating and framing employees' opportunity-seeking to avoid unwanted risks, typically communicated as rules and limits related to sanctions and punishment (Simons, 1995). The findings indicate "*no communicated rules or guidelines to keep innovation within limits, as this is limited quite naturally in a public enterprise due to the hierarchy and regulations through norms and laws*" (P2). Similarly, one participant says that "*this is automatically limited by the authority structures*" (P6), meaning that employees must obtain managerial approval before anything can be initiated.

An existing research study found that boundary systems tend to get progressively stricter down the hierarchy (Deschamps, 2019), which is consistent with results that suggest that boundary systems are most prominent in specific innovation projects, e.g., in the form of "*manuals and cooperation agreements which contain recipes for methods, work requirements, expectations, and prerequisites*" (P3). The main difference seems to lay in how strict these systems are, mainly varying in the degree of decision-making authority and allocated resources. While some have "*hierarchical management traditions with limited decision-making authority*" (P1), others have the "*freedom to work with innovation within the target landscape*" (P9) and "*an individual pool of money to research interesting things in the market*" (P5).

As mentioned, together the beliefs and boundary systems form the acceptable "playground" for employees' exploration and opportunity-seeking. Based on the findings mentioned above, it appears that the PSOs' belief systems in the form of visions, social missions, and innovation strategies aim to encourage the employees to explore innovation opportunities, delineated and framed by limitations linked to mostly decision-making authority, however, to varying degrees.

4.2.2 Diagnostic Control Systems

According to Simons (1995), diagnostic control systems aim to ensure predictable goal achievement by encouraging, measuring, and monitoring organizational outcomes, and correcting

deviations from preset performance standards. The participants were asked questions such as "How and to what extent are innovation activities or processes measured, monitored, or controlled?" (Appendix A1).

In line with Simons (1995), the findings indicate that reporting on resource use and target achievement linked to budget plans is a prominent diagnostic tool throughout the PSOs. The participants talked about "*budget plans with associated resource allocation and key performance indicators*" (P1) and "*annual measurements of targets from the ministry based on the annual report*" (P6). The following statement illustrates this in more detail:

"The most important management control mechanism is that the agency receives an 'Award letter' at the beginning of the year, containing performance targets and key performance indicators. We must report back on this twice a year and are measured based on these. We must report on the effect delivered and on the resource use for which we are responsible" (P7).

Considering innovation projects, the PSOs are "*required to report on the overall targets after an innovation project*" (P8) and have specific "*project management systems to report on target achievement and resource use at given times during a year*" (P1), elaborated by the following statement: "*Innovation projects are part of the organization's budget processes with quarterly reporting as part of the business plan. The projects follow some set decision checkpoints to which the reporting is linked*" (P6). However, two of the eight PSOs represented stand out. While one participant said that they have "*no centralized, superior tools or systems to measure, control, map or follow up the innovation processes*" (P5), the other said the following:

"*We must report to senior management and the ministry on the development of innovation activities related to larger orders, but otherwise, we deliberately have no direct measurement of value creation from innovation against overall targets. We don't want too many criteria, as this can 'drown' the innovation activities*" (P9).

This quote can be interpreted considering Simons (1995), who emphasizes the importance of correct measurement variables, pointing out that diagnostic controls can be challenging to use in innovation settings due to the measurability issues and innovation's inherent complexity and uncertainty. Also, the PSOs deal with complex objectives "*beyond ones and zeros*" (P6), which thus are challenging to measure and require a different approach (A. Davila, 2012), indicating that traditional reporting systems can be inapplicable to innovation activities, especially in PSOs that aim to serve society (Taylor, 2018).

4.2.3 Interactive Control Systems

Interactive control systems trigger experimentation, encourage opportunity-seeking, and facilitate bottom-up initiatives by managerial involvement in employees' tasks and decision-making to respond to perceived opportunities and threats, and learn about strategic uncertainties (Simons, 1995). The participants were asked questions such as "To what extent are managers involved in the innovation activities?" (Appendix A1). The findings suggest that PSO managers involve themselves in a wide range of innovation activities, of which innovation projects hold the most prominence by using project management systems interactively throughout the projects, illustrated by the following quote:

"The structured top-down innovation projects are iterative processes with frequent testing and evaluation of unfinished solutions, employee involvement, feedback with end-users, etc. to really understand the problem we seek to solve before we proceed to the implementation" (P2).

These management systems can be used both interactively and diagnostically (Martyn et al., 2016; Simons, 1995) and several of the participants referred to "*typical project methodology*" (P8) "*with the different stages, documents, and checkpoints*" (P1), with varying degrees of involvement of the project manager, steering group, and project owner, depending on the project's nature and objectives. One participant gave the following description of the involvement in an innovation project as the project manager:

"We had a digital half-hour meeting every 6 weeks with an update on the status and further plan. My job as the project manager was much about coordination between all the project members. There were close follow-ups to ensure that everyone followed the project model, both through visits, networks, and discussions, where we challenged each other and shared experiences, in addition to joint gatherings twice a year. The relational aspect is the most important" (P3).

Accordingly, Simons (1995) suggests that managers can signal the desired focus through interactive control systems, consistent with managers' essential role, emphasized by research (Abernethy et al., 2010; Elbashir et al., 2021; Stainer & Stainer, 2000). Also, a participant highlighted the importance of "*involving the employees in innovation activities, both to ensure the end-user perspective, but also to facilitate implementation*" (P2), in line with the literature (Digmann et al., 2006; Taylor, 2018), illustrated by the example of "*an annual program with a bottom-up approach, where employees can sign up and apply for innovation funds to e.g., buy capacity, get process support, collaborate in cross-functional groups, etc.*" (P2).

A number of additional examples can be mentioned, but interactive control systems are primarily characterized by how tools are used, rather than what these tools are (Deschamps, 2019). Related to RQ2, it is thus challenging to identify the existing interactive control systems in the public sector, at least in a clear way in the context of this study. Future research may benefit from qualitative studies on innovation activities in the public sector, focusing specifically on interactive control systems.

4.2.4 Summary of Existing Innovation MCSs in the Public Sector

The findings suggest that all PSOs have beliefs and boundary systems for their innovation activities but communicated to varying degrees. While belief systems seem to mainly consist of visions, social missions, and innovation strategies, the boundary systems mainly consist of hierarchical structures associated with decision-making authority and allocated resources. The most prominent diagnostic control systems appear to be budget plans and reporting systems, also connected to the typical hierarchical structures within the public sector. While project management systems seem to hold the most prominence, the findings indicate the existence of numerous interactive control system practices, which are too varied to capture within the limitations of this study. Thus, this study calls for future research to carry out qualitative studies of innovation activities in the public sector, with a specific focus on interactive control systems.

4.3 The Results of MCSs on Innovation Processes

This section addresses the most significant interview findings related to RQ3: To what extent do the existing MCSs contribute to effective and efficient innovation processes in the public sector?

4.3.1 The Enabling Control Systems

The enabling levers, i.e., beliefs systems and interactive control systems, create positive and inspirational forces (Baird et al., 2019), encourage opportunity-seeking, and facilitate bottom-up initiatives by managerial involvement in employees' tasks and decision-making (Simons, 1995). As summarized in section 4.2.4, the beliefs systems for innovation activities in the PSOs mainly consist of visions, social missions, and innovation strategies, communicated to varying degrees. Together with the interactive use of control systems, these mainly constitute the enabling control levers for innovation activities in the represented PSOs. This section aims to explore their effect considering the innovation activities.

Findings indicate that the degree of communication of visions and overall goals and strategies

varies considerably between the PSOs, both to what extent they are communicated, but also to what extent it is necessary to communicate them. One participant said that their "*strategy contains no explicit call for innovation, as the management believes that to be unnecessary, as it is so natural that everyone in the organization should just do it*" (P7). Another participant stated that "*it is difficult to translate visions into more practically manageable tasks*" (P1), while another said: "*If you ask any of our employees that work outside the head office, they will probably answer that innovation has never been discussed, no matter how many times we have communicated it*" (P6).

Another issue seems to be resource constraints in terms of available time to pursue innovation activities. While one participant said that "*innovation happens all the time*" (P5), other stated that "*the services don't quite have the capacity to work with innovation, they have enough to keep up with today's deliveries*" (P2). It is conceivable that this relates to the pressure of efficiency and performance of PSOs (Elbashir et al., 2021; Stainer & Stainer, 2000) and makes it more challenging to communicate innovation, as illustrated by the following quote: "*It is challenging to communicate the importance of innovation to busy employees*" (P6).

In contrast, one of the participants said the following: "*Our strongest card for driving innovation is our bottom-up culture*" (P5), which can be interpreted as a result of interactive controls, illustrated by the following: "*Our interaction and dialogue across and at all levels are promoting innovation*" (P7). Another said that "*the driver behind profitable innovation processes is committed employees*" (P8). These statements can indicate strong innovation capacity within the PSOs, which may have derived from the enabling control systems (Bedford, 2015).

Furthermore, findings suggest that interactive use of control systems such as project management systems contributes to efficient and effective innovation processes if the "recipe" is followed step by step, supported by a success story of an innovation project where "*the project used project methodology and took its time to follow absolutely all steps and checkpoints*" (P1).

4.3.2 The Constraining Control Systems

The constraining levers, i.e., boundary systems and diagnostic control systems, balance the enabling levers (Baird et al., 2019), and provide the highest degree of flexibility and creativity by delineating and framing employees' opportunity-seeking, and encouraging, measuring, and monitoring organizational outcomes (Simons, 1995). As summarized in section 4.2.4, the boundary systems for innovation activities in the PSOs mainly consist of hierarchical structures associated with decision-making authority and allocated resources to varying degrees, while the diagnostic control systems appear to constitute budget plans and reporting systems, connected to

the same hierarchical structures. Combined, these mainly constitute the constraining control levers for innovation activities in the represented PSOs. This section aims to explore their effect considering the innovation activities.

The findings reveal that most participants address the terms "*hierarchy*", "*budget plans*", and "*reporting systems*" during the interviews. A recurring factor appears to be that bureaucratic features in the form of funding and reporting systems are characterized by challenges and a lack of agility. One participant stated that "*the bureaucracy and the various reporting lines are a challenge*" (P2), while another said that "*many of the systems have such bureaucratic requirements that they become inflexible*" (P6). This seems to be consistent with the literature that identifies regulation limitations, rigid organizational structures, resource constraints, and hierarchical attitudes as barriers to innovation in the public sector (Bloch & Bugge, 2013; Brorström, 2015; Taylor, 2018). The following quote further illustrates the frustration with funding and associated reports: "*There is a continuous 'hunt' for funds, and funds require reporting and reporting is time-consuming, especially when you collaborate with many others*" (P3). Albury (2011) suggests that innovation requires managers to move away from the traditional 'public-sector obsession'. In addition, findings suggest that the reports not necessarily serve a purpose: "*Questions in the reporting forms do not always reflect the real value of what we actually are doing*" (P8). The following statement elaborates on this:

"I think there is a limit to how much you get out of everything you have to report on. Funding reports are based on quantitative measures and sometimes the reporting forms do not match the message that is really important" (P3).

To overcome the typical public-sector barriers to innovation, research suggests several measures, including less structural and formal processes (Brorström, 2015). It is conceivable that fewer reporting requirements could be beneficial for innovation activities in the public sector, as the following quote indicates:

"Politicians want both efficiency, creativity, and innovation. Due to extremely heavy and incredibly time-consuming documentation requirements without providing an operational effect make that we are not able to do things easier and faster, even where it should be possible" (P7).

According to Simons (1995), an important aspect of diagnostic control systems is that they are used to measure organizational performance, while findings indicate that this is difficult to achieve: "*Measuring the effects of what we do in general is difficult, because it is something more*

than numbers" (P2). According to the theory, diagnostic controls can be challenging to use in innovation settings and for intangible objectives due to the lack of measurability (Simons, 1995). This appears to be consistent with the findings of this study, as several participants addressed the intangibility and the lack of measurability, e.g., having a quantitative approach to *"measuring operational ability and trust"* (P7) or *"whether we succeed in developing a more innovation-oriented culture"* (P1) or *"the utility of research projects. We know what it costs, but what is it worth?"* (P6). This can be supported by existing research which points out that MCSs struggle with implementing effective MCSs, such as measurement and reporting systems (Elbashir et al., 2021). Also, the literature seems to lack consensus on what constitutes performance in the public sector (Berland & Dreveton, 2006; Deschamps, 2019), illustrated by the following two statements: *"It is difficult to define the benefit of the innovation processes and thus difficult to say whether these contribute to overall goals"* (P8).

"We have no measurement of the value creation from innovation against overall goals. It is difficult to have appropriate, traditional measurements of societal value. We wish we had more measurements of the value creation for citizens on an individual level" (P8).

As Simons (1995) emphasizes, it is important to ensure that the diagnostic control systems measure the right variables, as well as adapting the systems to the context and objectives of the PSOs (A. Davila, 2012). One participant said: *"We don't have good enough measures for the results of innovation activities and seek to develop a better set of performance indicators"* (P1), suggesting an attempt to a different approach.

4.3.3 Summary of Results of MCSs on Innovation Processes

The enabling levers, i.e., beliefs and interactive control systems, are supposed to create positive and inspirational forces, while being balanced by the constraining levers, i.e., boundary and diagnostic control systems (Baird et al., 2019). However, the sections on both enabling control systems and constraining control systems suggest varied and contradicting findings. Consistent with existing research, the most prominent findings suggest that diagnostic control systems, in terms of funding and reporting systems, can be barriers to innovation in PSOs and cause both challenges and frustrations, mainly related to the suggestion that the systems are not adapted to the typical public-sector context. Considering RQ3, the overall findings suggest that the enabling control systems have either a positive or neutral effect on the effectiveness and efficiency of innovation processes, while the constraining control systems have a neutral or negative effect.

Chapter 5: Conclusion

5.1 Summary and Implications

Extensive empirical research emphasizes the necessity of innovation and the application of an appropriate MCS to ensure efficient and effective innovation processes. Most studies, however, focus on the private sector, although the public sector accounts for significant parts of the overall economy and is at least as dependent on effective and efficient innovation processes to continue providing services to society. Therefore, this study explored MCSs for innovation activities in the public sector by collecting qualitative data from semi-structured interviews with Norwegian PSOs. The literature on the research topic of *Innovation Management Control in the Public Sector* is underexplored and has some significant gaps, which this thesis sought to address. Moreover, the aim was to contribute to existing research by answering the following research questions:

RQ1: Is innovation relevant to public sector organizations?

RQ2: What are the existing MCSs for innovation activities in the public sector?

RQ3: To what extent do they contribute to effective and efficient innovation processes?

RQ1 provided the necessary foundation for the further exploration of the existing MCSs for innovation activities. Related findings imply that although PSOs can be characterized by a high degree of complexity, which may be reinforced in connection with innovation activities, the public sector as an innovation driver depends on cooperation across the sectors. In response to RQ1, the proposition is that innovation is a necessity for the public sector.

RQ2 and RQ3 constituted the main research objective of this study. Findings suggest that all PSOs have beliefs and boundary systems for their innovation activities but communicated to varying degrees. While belief systems seem to mainly consist of visions, social missions, and innovation strategies, the boundary systems mainly consist of hierarchical structures associated with decision-making authority and allocated resources. The most prominent diagnostic control systems appear to be budget plans and reporting systems, also connected to the typical hierarchical structures within the public sector. Consistent with the literature, findings suggest that existing diagnostic control systems, in terms of funding and reporting systems, can be barriers to innovation in PSOs and cause both challenges and frustrations, mainly related to the suggestion that the systems are not adapted to the typical public-sector context. While project management systems seem to hold the most prominence in managerial involvement, the findings

indicate the existence of numerous interactive control system practices, which could not be captured within the limitations of this study.

Overall findings indicate several common features and some prominent exceptions, both in terms of what the existing MCSs for innovation in the public sector are and to what extent these contribute to efficient and effective innovation processes. Considering RQ3, the proposition is that the enabling control systems have either a positive or neutral effect on the effectiveness and efficiency of innovation processes, while the constraining control systems have a neutral or negative effect.

5.2 Limitations and Future Research

The results and discussion in this study should be considered in light of several limitations. First, the study is framed by a certain time limit and thereby excluding several approaches which could have raised the quality of the research significantly, such as e.g., triangulation. Another limitation is the recognition that the research topic, Innovation Management Control in the Public Sector, and associated research questions span too far in relation to the study's time frame to be able to cover all important aspects. Several of these elements could be useful to study separately, and constitute different avenues for future research, which makes this study an important contribution to underline the necessity to explore the research topic further.

In particular, this study calls for qualitative studies of innovation activities in the public sector, with a specific focus on interactive control systems, due to the diverse variety of existing practices. Other studies could address the various levels or different disciplines within the public sector separately, considering the research topic of this study, to confirm or uncover any similarities and differences.

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Appendix

A1: Interview Guide

Research Topic: Innovation Management Control in the Public Sector

Gray text = personal notes. NOT questions for the participant

1. Background to Innovation in General

RQ1: Is innovation relevant to public sector organizations?

- How important is innovation in and for your organization?
 - What is your role regarding innovation activities?
- What types of innovations do you pursue?
 - (e.g., product innovation, process innovation, service innovation, etc.)
- How are innovation processes and activities organized?
 - Projects, etc. with a start and end
 - or continuous innovation activities intertwined into daily operations
- How are innovation processes initiated?
- How are innovation processes or activities carried out?
- What does a typical innovation process look like?
 - Use of established, formal, structured plans, procedures, and frameworks
 - OR informal and unstructured, i.e., emerging)
- What is the main focus during an innovation process?
- Do you have any collaborations with external actors?

2. The Management Control of Innovation

RQ2: What are the existing MCSs for innovation activities in the public sector?

Overall introductory question:

- How are innovation activities and processes managed/controlled?
- To what extent is the management/control systematized/structured?

2.1 Beliefs Systems

WHAT: An explicit set of beliefs that define basic values, purpose, and direction, including how value is created; the level of desired performance; and human relationships.

HOW: Mission statements, vision statements, statements of purpose.

Overall question: To what extent do you define / determine values, purpose, and direction for the innovation process?

- How and to what extent are these formulated and expressed?
- How and to what extent are these communicated (to the employees)?
 - Continuous or occasional communication
- How and to what extent are these made visible / used during innovation?

2.2 Boundary Systems

WHAT: Formally stated rules, limits, and proscriptions tied to defined sanctions and credible threat of punishment.

HOW: Codes of business conduct, strategic planning systems, asset acquisition systems, operational guidelines.

Overall question: How and to what extent have you defined or determined rules, guidelines, and limits for the innovation processes?

- How and to what extent have you defined / determined consequences and sanctions related to these?
- How and to what extent are these formulated and expressed?
- How and to what extent are these communicated (to the employees)?
 - Continuous or occasional communication
- How and to what extent are these made visible / used during the process?

2.3 Diagnostic Control Systems

WHAT: Feedback systems that monitor organizational outcomes and correct deviations from pre-set standards of performance.

HOW: Set standards, measure outputs, and link incentives to goal achievement.

Overall question: How and to what extent are innovation activities or processes measured, monitored, or controlled?

- To what extent does the organization have set standards for innovation activities?
 - To what extent are innovation activities measured against these?
 - To what extent, if any, are these measurements systematized and structured?

- What tools or systems are used to measure, monitor, and keep track of the progress or outcomes during an innovation process?
 - Continuous or occasional monitoring? Fixed times?
- To what extent do managers or the person responsible for the innovation process have an overview of results/progress/outcome during the process
 - What works well? What is challenging?
- Is there something managers wish they could measure (more of) but which is difficult or impossible to implement in practice?

2.4 Interactive Control Systems

WHAT: Control systems that managers use to involve themselves regularly and personally in the decision activities of subordinates.

HOW: Ensure that data generated by the system becomes an important and recurring agenda in discussions with subordinates; Ensure that the system is the focus of regular attention by managers throughout the organization; Participate in face-to-face meetings with subordinates; Continually challenge and debate data, assumptions, and action plans.

Overall question: Can you tell me about information, communication, and interaction between management and employees during an innovation process?

- To what extent are managers involved in the innovation processes?
 - Only facilitation, supervision, measurement, etc.?
- How is it ensured that key employees are updated on progress / results / outcome etc.?
 - A continuous or occasional update?
- How are the innovation processes followed up?
 - How does the organization stay up to date on innovation activities?
 - How do managers or employees access necessary information about the status or outcomes?
- How and to what extent are employees involved in and informed about the status of progress / results / outcomes, etc.?
 - Continuous or occasional update?
- To what extent do the managers have meetings (face-to-face) and contact with the employees during the innovation process?
- To what extent do you evaluate, reconsider, or even change the action or progress plans during the innovation process?

3. The Results of the Innovation Management Control Systems for

RQ3: To what extent do the existing MCSs for innovation activities contribute to effective and efficient innovation processes?

- To what extent do the control mechanisms / tools / routines (which we have discussed) contribute to efficient / effective innovation processes?
- Which mechanisms / tools / routines would you say work best / contribute the most, or are the easiest to implement? Why?
- Which would you say works the least / worst, or are they the most challenging to implement / implement? Why?
- Are there any mechanisms / tools / routines that you know about but that you deliberately, for some reason, do not use? If so, which ones? Why?
- In addition to what you already do, is there anything you wish you could monitor, control or measure but which, for some reason, is difficult / impossible to implement in practice?
- How do you experience the level of motivation?
 - To what extent is motivation considered a factor?
- How do you measure or determine whether the innovation activities contribute to the overall goals?

Anything you want to add or deliberate on?

NSD NORSK SENTER FOR FORSKNINGSDATA

Vurdering

Referansenummer

772972

Prosjekttittel

Master's Thesis in Business Administration

Behandlingsansvarlig institusjon

Universitetet i Agder / Handelshøyskolen ved UiA / Institutt for økonomi

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Andreas Wald

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Rebekka Rock

Prosjektperiode

10.01.2022 - 01.06.2022

Vurdering (1)

24.03.2022 - Vurdert**OM VURDERINGEN**

Personverntjenester har en avtale med institusjonen du forsker eller studerer ved. Denne avtalen innebærer at vi skal gi deg råd slik at behandlingen av personopplysninger i prosjektet ditt er lovlig etter personvernregelverket.

Personverntjenester har nå vurdert den planlagte behandlingen av personopplysninger. Vår vurdering er at behandlingen er lovlig, hvis den gjennomføres slik den er beskrevet i meldeskjemaet med dialog og vedlegg.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til den datoen som er oppgitt i meldeskjemaet.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake.

A3: Discussion Paper

Master's Program in Business Administration

Competency Goal: International

Written by Rebekka Rock

Introduction

This discussion paper is written as a mandatory part of my master's thesis at the School of Business and Law at the University of Agder in Kristiansand. It aims to reflect on the concept of "international" considering the topic, research questions, and results of my master's thesis. I, therefore, start with a brief presentation of my master's thesis before I proceed with the discussion, followed by a summary and conclusion.

The master's thesis, *Innovation Management in the Public Sector*, is an exploratory study of existing management control systems (MCSs) for innovation activities in the public sector. Extensive empirical research emphasizes the necessity of innovation (Singh & Aggarwal, 2022) and the application of appropriate MCSs to ensure efficient and effective innovation processes (Lill, Wald, & Munck, 2020). As most related research is conducted in the private or non-profit sector (Felício, Samagaio, & Rodrigues, 2021; Ganguly & Das, 2020), the literature still has some significant gaps related to this topic in the public sector, to which my study sought to contribute. The public sector accounts for significant parts of the overall economy (Arundel, Bloch, & Ferguson, 2019) and is at least as dependent on effective and efficient innovation processes to continue providing services to society (Palm, 2020; Windrum, 2008). Therefore, my thesis combined all three elements, i.e., innovation, management control, and the public sector, and sought to reveal the existing management control systems for innovation activities in the public sector and assess to what extent they contribute to efficient and effective innovation processes. Also, it addressed the call to use a qualitative approach when researching MCS and something as complex as innovation (Barros & da Costa Ferreira, 2019) by using qualitative data from semi-structured interviews with a range of Norwegian PSOs.

Discussion

According to the online Cambridge Dictionary, the term 'international' involves more than one country, listing examples such as "international politics" and "international collaborations" (Cambridge, 2022). Accordingly, international, or even global trends can be understood as general developments or changes in a situation affecting many countries. The research topic of my master's thesis, *Innovation Management Control in the Public Sector*, consists of three concepts,

i.e., innovation, management control, and the public sector, to which the term 'international' can be considered highly relevant.

As there are as many definitions as there are authors, the next section establishes what the three terms mean considering my master's thesis. A general definition of innovation can be found in the Oslo Manual (OECD/Eurostat, 2018), which defines the term as something new or improved that significantly differs from previous versions and is either brought into use or made available to others. Accordingly, innovation is something novel, useful, and utilized (Bækkelie, 2016). MCSs are the tools developed and utilized by managers to support and manage strategic change and uncertainties, improve competitive advantages (Biswas & Akroyd, 2022; Kober, Ng, & Paul, 2007), influence employees' behavior and interests (Baird, Su, & Munir, 2019), create a sound balance between creativity and efficiency (Lill et al., 2020), and to achieve organizational goals (Biswas & Akroyd, 2022). Considering my master's thesis, the term public sector refers to PSOs, mainly characterized by a wide range of stakeholders, and the impact of political and social dimensions on decision-making (Drennan & McConnell, 2007), while being responsible for providing public services (Felício et al., 2021; Maharani, 2021).

All around the world, the answer usually is innovation whenever the topic is how to face the future. We live in a world and a time that is constantly changing – and it's changing fast. So, if you want your business to survive, you must keep up. If you want society to be satisfied, you must keep up. To do that, you need to do things differently and think differently. You need to be creative and come up with new solutions. And that's innovation – applicable to all parts of the economy. These rapidly changing times will continue, and things will not develop more slowly anytime soon, so innovation is both essential and relevant – in both a business and societal context. However, innovation tends to be a bit hovering and challenging to grasp. And this is where management control comes in. Management control aims to put innovation in a system and ensure that innovation processes are carried out efficiently and effectively.

The public sector accounts for a significant part of the overall economy (Arundel et al., 2019), having various functions as an employer, authority, and public service provider. Societies are "affected by external trends, international competition, economic conditions and events in other parts of the world", which the public sector must address (Digmann, Bendix, Jensen, & Jensen, 2006, pp. 20-21). Hence, PSOs worldwide face many challenges, confronted differently in various areas (Digmann et al., 2006; Palm, 2020). In Norway, these challenges include demographic changes, less economic room for action, climate and environmental issues, and the UN's sustainability goals (The Royal Ministry of Local Government and Modernization, 2019-2020).

The EU's Lisbon Strategy in 2000 is a great example considering the term 'international' in light of *Innovation Management Control in the Public Sector*, as the European economic sector is interdependent on innovative public sectors in all member states (Bekkers, Edelenbos, & Steijn, 2011). Also, the UN's sustainability goals require innovation (The United Nations, 2020) and innovative public sectors across borders. So, whenever the question is how to face current and future challenges, the answer usually is "innovation" (Kuratko, Covin, & Hornsby, 2014). International organizations such as the OECD and the EU are at the forefront of encouraging and measuring innovation in PSOs (Bloch & Bugge, 2013; Koziół-Nadolna & Beyer, 2021).

Increasing demands, financial cuts, and social, environmental, and economic changes make innovation of high interest for public sectors worldwide (Taylor, 2018). Especially after the introduction of the New Public Management (NPM) reforms, PSOs encounter increased pressure to enhance the efficiency and performance of their services (Elbashir, Sutton, Arnold, & Collier, 2021). In parallel, they must be accountable and transparent (Taylor, 2018) while considering laws, regulations, society, and citizens, including current norms and values (Digmann et al., 2006).

However, innovation is commonly associated with complexity, uncertainty, and high resource consumption (Bedford, 2015; Caetano, 2017), reinforcing the importance of finding an adequate MCS to create a sound balance between creativity and efficiency to succeed in the innovation processes (Lill et al., 2020). Also, knowledge sharing across sectors is identified as an important feature for innovation success (Bloch & Bugge, 2013), suggesting a potential for knowledge sharing across borders.

Interview findings from Norwegian PSOs suggest that major public sector innovations are often politically initiated. For bottom-up initiatives to be considered, they must be anchored in the PSOs' overall objectives, all strongly related to societal challenges, including those found in, e.g., the UN's sustainability goals. This suggests an overall innovation collaboration initiated by international alliances to reach common objectives across borders. However, Bason (2018) suggests that innovation in the public sector is too narrowly, as the focus is on improving PSOs internally rather than improving society as a whole, possibly indicating a great potential for improvement in an international context as well.

Summary and Conclusion

This discussion paper aimed to address the term 'international' considering the research topic of my master's thesis, *Innovation Management Control in the Public Sector*, consisting of three concepts. Previous sections point out several aspects of the topic to which the term international

is highly relevant. Most prominent may be the fact that the public sector worldwide not only faces major political and societal challenges but also is responsible for addressing them, requiring novel, better, cheaper, more efficient solutions, i.e., innovation. However, many of these challenges are too big for countries to overcome individually, requiring cooperation and alliances across national borders, reflected by international organizations such as the OECD and the EU at the overall level.

Summarized, innovation seems to be the answer whenever the issue is how to face current and future challenges (Kuratko, Covin, & Hornsby, 2014). We live in a world and time that is constantly and rapidly changing. For businesses to survive, they must keep up. For society to be satisfied, public service providers must keep up. The same goes for reaching the UN's sustainability goals. But to do that, governments, organizations, and citizens need to do things differently and think differently. They need to be creative and come up with new solutions. Innovation – highly relevant to all parts of the international economy.

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