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Design and Use of Performance Measurement Systems Under Uncertainty

A Study of Swedish Municipalities

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Abstract

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Five key words: Uncertainty, Ambiguity, Performance Measurement Systems, Swedish Municipalities, Simons' Levers of Control

Purpose: The purpose of this study is to develop an understanding of how performance measurement systems function as governance tools in Swedish municipalities under conditions of uncertainty and ambiguity, with a focus on how PMSs are designed and used to support control, accountability, learning, and adaptation.

Methodology: The study adopts a qualitative multiple case study design based on three Swedish municipalities. Empirical material was collected through semi-structured interviews with strategic, operational, and specialist-level respondents. The material was analyzed thematically, both within and across cases.

Theoretical perspectives: Uncertainty, Ambiguity, Performance Measurement Systems, Simons' LOC Framework, Institutional Theory

Empirical foundation: The empirical foundation consists of interviews with municipal respondents. The cases provide insight into how municipalities with differing local conditions and size perceive and manage uncertainty.

Conclusions: The study shows that uncertainty in Swedish municipalities is both external and internal, involving changing external conditions as well as ambiguity in goals and priorities. PMSs are designed as hybrid systems that combine indicators, targets, qualitative assessments, and contextual judgment. They are used diagnostically for control, accountability, and follow-up, but also learning, dialogue, and adaptation. The findings also show that institutional pressure influences PMS design and use through comparison, legal requirements, networks, and expectations of legitimacy.

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1. Introduction

This chapter introduces the background and relevance of the study. It presents the problematization, purpose, research questions, and overall structure of the thesis.

1.1 Introduction and background

The world is becoming increasingly difficult to predict. Rapid technological developments, geopolitical tensions, economic volatility, and shifting societal demands have created an environment in which change is both constant and complex. In such a context, uncertainty is no longer an expectation but a defining feature of the conditions under which organizations and decision-makers operate (Walker et al., 2003).

Recent developments further illustrate the growing presence of uncertainty at a global level. In February 2026, The Economic Times (2026) stated that the World Uncertainty Index (WUI) had recorded its highest peak since its introduction, surpassing previous peaks observed under events such as during the Covid-19 pandemic, the 2008 Global Financial Crisis, and the 9/11 attacks in 2001. The Economic Times (2026) added that unlike previous crises driven by singular events, the 2026 peak in uncertainty is associated with multiple simultaneous developments, including geopolitical tensions, disruptions in global supply chains, and political instability. This has led to an increase in general uncertainty in the world, leaving no corner of the world unaffected.

Despite being relatively geographically isolated from major geopolitical tensions, Sweden too is in many ways affected by the increased uncertainty in the world. Its highly open economy is particularly exposed to global uncertainty. For instance, a study made by Stockhammar and Österholm (2015) shows that shocks to political and economic policy predictability in the United States have a direct and negative impact on Swedish GDP growth. The research identifies investment and export growth as two channels through which uncertainty is transmitted, as Swedish firms and households react to anticipated and uncertain economic shifts in the US (Stockhammar & Österholm, 2015). Beyond the economic sphere, uncertainty affects Sweden in many other ways, for instance in geopolitical ways tied to

energy transformation. According to Ulug and Andrei (2025), Sweden is part of a region that is now considered a frontline for hybrid warfare and threats to energy infrastructure. This uncertainty has led to tangible impacts on national policy and has heightened the need for strategic acceleration in terms of diversifying energy alternatives (Ulug & Andrei, 2025).

In response to these conditions, increased attention has been directed towards how organizations and societies can cope with and adapt to uncertainty, where resilience has become a prominent concept. Resilience refers to the capacity of a social system to absorb disturbances, recover, and adapt to changing conditions (Cutter et al. 2008). At the local level, this is reflected in initiatives such as Making Cities Resilient 2030 (MCR2030).

Taken together, these developments highlight that Swedish municipalities operate in an increasingly complex and uncertain environment. Economic uncertainty, driven by a number of factors and policies, has challenged the Swedish welfare state (Granberg, 2008). This has led to municipalities facing a dual challenge in balancing efficiency with democratic legitimacy. Efficiency in the sense of being “sensitive to the needs and demands of local elites” (Granberg, 2008, p.373), while simultaneously maintaining democratic legitimacy by remaining “sensitive to the needs and demands of all citizens” (Granberg, 2008, p.374). In such a context, municipalities are not only required to respond to increasing uncertainty, but also to structure their operations in ways that enable effective decision-making and accountability. This creates a need for tools and systems that can support governance under complex, uncertain, and ambiguous conditions.

At the same time, municipalities do not operate in isolation. Tran and Nguyen (2020) states that public organizations operate in institutional environments that are characterized by external demands and expectations. Public organizations are often required to demonstrate transparency, accountability and compliance with regulations, which creates pressures to adopt and maintain structured performance measurement practices (Tran & Nguyen, 2020). The neo-institutional sociology framework illustrates a close link between public accountability, organizational performance and performance measurement systems (Tran & Nguyen, 2020). Such institutional pressures may influence how performance is reported, but also how priorities are defined and how uncertainty is managed in practice.

The challenges faced by municipalities are not only related to external uncertainties, but also internal complexities regarding how goals and priorities are defined. In addition to external uncertainty, public sector organizations, like municipalities, are also characterized by ambiguity related to their goals and objectives. Ambiguity can be understood as a lack of clarity and consistency in terms of organizational intentions and casual relationships (Vakkuri & Meklin, 2006). In the public sector, this is especially evident, as political processes often give rise to unclear priorities and conflicting goals (Vakkuri & Meklin, 2006). Building on this, goal ambiguity can be understood as a type of ambiguity, not the whole concept, but a dimension of it. Chun and Rainey (2005) describe organizational goal ambiguity as the degree to which organizational goals allow for varying interpretations of a desired future condition. Goals lose clarity and become ambiguous when they can be understood in multiple ways (Chun & Rainey (2005). Ambiguity can therefore be seen as a form of internal uncertainty within organizations, as it originates from how internally defined goals are interpreted and understood. It also differs from external uncertainty in that it is significantly more manageable.

National, regional, and local governance is dependent on performance measurement systems (PMSs) to navigate increasingly complex environments. PMSs play a central role in public sector governance by enhancing accountability and transparency, as they provide structured information on how resources are used and services are delivered (Tran & Nguyen, 2020). In municipalities, and on all governance levels, this is especially important for ensuring that public resources are managed responsibly and that decision-makers remain answerable to citizens. It becomes significant since municipalities are responsible for a wide range of activities, covering both “hard” sectors, such as infrastructure, water and sewage, and local development, but also soft sectors, including welfare areas such as schools, childcare, elderly care, and culture. The scope of these responsibilities increases the need for PMSs that can support various activities. At the same time, this width also makes PMS design and use more difficult.

This difficulty is reinforced by prior research suggesting that ambiguities related to goals and performance measurement cannot be fully eliminated in PMSs (Vakkuri & Meklin, 2006). This implies that while PMSs contribute to structure and clarity, they also operate within contexts where ambiguity remains present and must be managed. As a result, the design and use of PMS is challenging. Developing appropriate measures and targets, and ensuring that

they remain relevant in changing environments can be difficult. These challenges become particularly evident in contexts characterized by uncertainty, where traditional approaches to planning and control may be less effective. This suggests that uncertainty is not only an abstract condition, but one that has tangible implications for how municipalities design and use PMSs in the real world.

1.2 Problematization

Performance measurement systems (PMSs) are widely presented as structured tools for improving performance, enhancing accountability, and supporting decision-making. They are often associated with the ability to translate organizational objectives into measurable indicators, set targets, and monitor progress (Tran & Nguyen, 2020). Implied in this perspective is the assumption that organizations operate in environments where goals can be clearly defined, relevant measures can be identified and performance can be evaluated against relatively stable expectations. In this sense, PMSs are frequently treated as neutral and technical instruments that enable organizations to manage complexity through structure and control.

However, such assumptions become problematic when considering the conditions that many organizations, including the public sector, operate in. As established earlier, uncertainty is not just a temporary disturbance but a defining feature of organizational environments (Walker et al., 2003). At the same time, uncertainty is not only an external condition. From an organizational perspective, it is also a case of perception and interpretation, as environmental uncertainty is experienced through the perceived inability of decision-makers to accurately predict external conditions (Duncan, 1972). This suggests that organizations operate under conditions of what may be understood as *total uncertainty*, where external uncertainty interacts with internal ambiguity. This raises the question of whether organizations may seek to reduce ambiguity in response to increased external uncertainty, and whether such efforts can re-balance the total uncertainty.

This dynamic becomes especially evident in public sector contexts. Unlike private-sector organizations, which are often guided by relatively clear performance criteria such as profitability, public sector organizations must balance multiple and sometimes conflicting objectives, leading to greater challenges in measuring and managing performance (Granberg,

2008; Jung, 2011; Rainey & Jung, 2010). As noted by Granberg (2008), municipalities must simultaneously pursue efficiency and democratic legitimacy, which creates ambiguity regarding what should be prioritized, how success should be defined and which outcomes should be measured. This challenge is further reinforced by the relatively high degree of autonomy in Swedish municipalities (Ladner et al., 2019, cited in Lidström & Hertting, 2021), which places greater responsibility on local governance to define priorities and design systems under conditions of uncertainty, thereby intensifying the practical implications of goal ambiguity.

Taken together, these perspectives challenge the assumption that PMSs can function as stable and objective tools for steering organizational behavior. If uncertainty affects how goals are defined and how future developments are anticipated, it is also likely to influence how performance measures are selected and how results are evaluated. In particular, a distinction can be made between *measures* and *targets*. While measures enable organizations to track developments over time and quantify the effectiveness of actions, targets introduce expectations about desired outcomes of performance (Grant & Shaw, 2021; Dekker et al. 2012). Under conditions of uncertainty and ambiguity, such expectations may become problematic, as fixed targets risk becoming misaligned. At the same time, the use of targets often reflects demands for accountability and control, whereas the use of measures without strict targets may be more closely associated with learning and adaptation. This raises questions about how organizations balance these different purposes or performance measurements in uncertain environments.

In parallel, the increased emphasis on resilience introduces an additional dimension to this discussion, however, Weichselgartner and Kelman (2015) warns that while resilience is replacing older principles in planning, there is an inherent risk of the term becoming an “empty signifier” used to justify a specific goal. There is also a suspicion that much of what is now labelled as resilience is simply “old wine in new bottles” (Weichselgartner & Kelman, 2015). Meaning, it remains unclear how such capacities and concepts are reflected in the design and use of PMSs, and whether such systems support or constrain organizational responses to uncertainty. Moreover, public organizations like municipalities operate under institutional pressures that may influence how such systems are adopted and used (Tran & Nguyen, 2020). Driven by institutional isomorphism, providing structured performance

information becomes an important mechanism for maintaining stakeholder legitimacy and satisfying external demands and pressures for public accountability (Tran & Nguyen, 2020).

In sum, these perspectives suggest that PMSs cannot be understood as purely technical tools, but instead as context-dependent governance mechanisms that are shaped by uncertainty, ambiguity and institutional theory. This reframes the issue from evaluating whether PMSs are effective, to examining how they are designed and used under such conditions. Against this background, there is a need to explore how municipalities perceive and interpret uncertainty, how they respond to it, and how these responses are reflected in the design and use of PMS.

1.3 Purpose

The purpose of this study is to develop an understanding of how performance measurement systems function as governance tools in Swedish municipalities under conditions of uncertainty and ambiguity. Rather than evaluating whether such systems are effective in a general sense, the study focuses on how they are designed and used when municipalities face changing external conditions, ambiguous goals, and institutional pressures. By examining three Swedish municipalities, the study seeks to contribute insight into how PMSs may support control, accountability, learning, and adaptation in complex public-sector settings. In line with the problematization and purpose outlined above, the study is guided by the following research questions presented below:

1.4 Research questions

RQ 1: How do Swedish municipalities perceive external uncertainty, internal ambiguity, and institutional pressure?

RQ 2: How are performance measurement systems designed in Swedish municipalities under conditions of uncertainty and ambiguity?

RQ 3: How are performance measurement systems used to balance purposes such as control, accountability, learning, and adaptation?

1.5 Outline of the report

The introduction had provided the background and conceptual starting point for the study. The thesis then proceeds by presenting the Swedish municipal context, the relevant literature and theoretical framework, and the methodological approach. It then turns to the empirical findings, which are analyzed and discussed in relation to previous research and chosen theoretical concepts. The study is then concluded with the main insights and reflections.

2. Swedish Municipal Context

This chapter presents the Swedish institutional and municipal context in which the study is situated. It outlines key features of Swedish municipal governance and discusses national and regional conditions that shape how municipalities experience uncertainty, responsibility, and performance measurement.

2.1 Swedish municipal governance

Sweden's governance consists of three levels: national, regional, and local (Regeringen, 2020). At the local level, Sweden is made up of roughly 290 municipalities, which play a central role in providing welfare services to citizens (Regeringen, 2020). These municipalities are governed by locally elected politicians and the municipal council holds the primary decision-making responsibility. Although municipal activities are regulated through national legislation, particularly the Local Government Act, municipalities retain high autonomy in how policies are organized and implemented at the local level.

This autonomy is an important feature of the Swedish municipal system. Compared to other European countries, Swedish municipalities are viewed as having an extensive degree of autonomy in local decision-making and administration (Loughlin et al., 2011, cited in Lidström & Hertting, 2021). Municipal autonomy is also reflected in the municipal planning monopoly, which for instance gives municipalities the right to decide how land within municipal borders should be used and managed (Lidström & Hertting, 2021). This is relevant as municipalities are not only affected by national and regional developments, but also have substantial responsibility for translating these conditions into local planning and governance practices.

A key feature of the Swedish public sector is the principle of public access to official documents, which is constitutionally protected through the Freedom of the Press Act (Regeringen, 2016). The principle promotes transparency, and means that as far as possible, the activities of government agencies should be open to the public. This means that municipal documents, decisions and reports are generally free and accessible to all citizens. This demonstrates clear transparency expectations.

2.2 National conditions

Building on the decentralized municipal system described above, Swedish municipalities are also shaped by national-level developments. Although municipalities have substantial autonomy, their planning and governance takes place within a broader national context that is characterized by shifting governmental expectations, economic volatility and digital development. SKR, which represents the country's 290 municipalities and 21 regions, is a key resource for monitoring these circumstances. According to a SKR report, the global economy was characterized by increased uncertainty in the spring of 2025, which directly affected the planning assumptions and economic conditions of municipalities and regions (SKR, 2025a). Economic downturn, inflation-related cost constraints, significant investment requirements, and demographic shifts marked by fewer children and an ageing population are all highlighted in the report (SKR, 2025a).

A forward-looking study by SKR (2025b) identifies several long-term “tension fields”, including globalisation, climate, values, demography, and technological advancement, which are expected to impact local and regional governance. The research also highlights the need for society to adjust to the rapid advancement of technology, including improved abilities to measure, track and forecast behavior (SKR, 2025b).

Demographic change is one of the clearest national-level challenges affecting Swedish municipalities and contributing to uncertainty. According to SKR (2025a), the population structure of the municipal sector is changing, with fewer children reducing the demand in some areas, while an ageing population increased the need for elderly care and related welfare services. As a result, the planning environment becomes more complicated, requiring municipalities to constantly adjust workforce, resource allocation, and priorities. Also, these demographic changes increase financial pressure as well as uncertainties about future service requirements and organizational capability (SKR, 2025a).

Municipalities are also affected by national policy initiatives. The Swedish government's digitalization strategy for 2025-2030 outlines the long-term path for digitalization policy, which includes public administration, welfare, and digital competence as key areas for future growth (Regeringskansliet, 2025). Municipalities are expected to develop their digital

governance and analytical capabilities while also managing growing organizational and technological demands (Regeringskansliet, 2025). National policy contributes to the municipal context by creating formal expectations.

Taken together, economic uncertainty, demographic change and national policy expectations shape the conditions in which Swedish municipalities plan and allocate resources. These developments increase the need for governance systems that support accountability and adaptation under changing circumstances.

2.3 Regional conditions

In addition to national conditions, the municipalities in this study are situated within the regional context of Skåne. The region consists of 33 municipalities, and the organization Skånes Kommuner supports cooperation between them. For municipalities in Skåne, the regional level forms an additional context in which local priorities are shaped by shared challenges and cooperative governance structures.

This regional concept is also reflected in Skåne's regional development strategy. The strategy describes Skåne's aim to be a resilient region characterized by "flexibility, diversity, adaptability and robustness" (Region Skåne, 2024, p.13). Furthermore, it highlights digitalization, preparedness and resilience as important areas for regional development. Rather than presenting the challenges as purely local matters, the strategy emphasizes the need for cooperation and interaction across different actors (Region Skåne, 2024). Skåne's municipalities are therefore impacted by regional policies and cooperative governance structures in addition to their own internal goals.

A concrete regional uncertainty concerns energy supply and electricity capacity. Skåne has faced increased capacity problems since at least 2018, especially in Malmö, the region's biggest city (Palm, 2021). According to Region Skåne's 2030 electricity supply plan, the region's long-term development faces significant challenges due to electricity prices, insufficient capacities and restrictions on investments and expansions (Region Skåne, 2023). Energy supply provides a tangible example of how regional issues can create uncertainty for municipalities, even when such issues are not controlled at the local level.

3. Literature Review and Theoretical Framework

This chapter presents the theoretical foundation of the study. It discusses uncertainty, ambiguity, resilience, performance measurement, Simons' Levers of Control Framework, and institutional theory in order to develop the analytical lenses used in the study.

3.1 Uncertainty

Uncertainty is a complex concept and has been defined in several different ways throughout literature. Walker et al. (2003) argue that uncertainty is not simply the absence of knowledge, since it may prevail even when a considerable amount of information is available, and additional knowledge may in some cases reveal that reality is more complex and less predictable than previously assumed. The authors therefore define uncertainty broadly as “any departure from the unachievable ideal of complete determinism” (Walker et al., 2003, p.4).

A more organization-oriented understanding of uncertainty is offered by Duncan (1972), who introduces perceived environmental uncertainty. This means that uncertainty is not only an objective property of the environment, but also depends on how organizational members perceive and interpret surrounding conditions. Duncan (1972) further argues that dynamic and complex environments experience the highest levels of uncertainty in decision-making.

In the context of this study, the concept of environmental uncertainty is particularly relevant. Abu-Allan and Alghizzawi (2024) define perceived environmental uncertainty as a decision-makers subjective evaluation of how predictable and complex the external environment is for an organization. They emphasize that such perceptions play an important role in shaping strategic planning, guiding resource allocation and influencing an organization's ability to adapt. Furthermore, they argue that perceived environmental uncertainty should not be treated as a single concept, but rather as a multidimensional one. The analysis identifies several key dimensions of uncertainty, including technological changes, regulatory developments, market conditions, and more (Abu-Allan & Alghizzawi, 2024).

Taken together, these perspectives suggest that environmental uncertainty can be understood as both multidimensional and perceptual. It is multidimensional because it stems from several sources simultaneously, such as political decisions, economic volatility, demographic changes, technological development, and regulatory pressures. It is perceptual because it is and can be experienced and interpreted by decision-makers, rather than existing solely as an objective external condition. This is particularly relevant for municipalities, which operate in environments shaped by external demands and changing conditions that are occasionally outside their direct control.

While the above emphasizes environmental and external uncertainty, uncertainty in organizations can also arise internally through ambiguity in goals, priorities and outcomes. This internal dimension is especially relevant in public sector organizations, where political processes and a variety of stakeholders can give rise to conflicting goals, ambiguous intentions and differing interpretations of desired outcomes (Oppi et al. 2022). Vakkuri and Meklin (2006) define ambiguity as an absence of clarity and consistency. A central dimension of ambiguity is called goal ambiguity. It is defined as “the extent to which an organizational goal or set of goals allows leeway for interpretation, when the organizational goal represents the desired future state of the organization” (Chun & Rainey, 2005, p.2).

Organizations who have unclear goals tend to perform worse than those characterized by more formalized rules and practices (Stazyk & Goerdel, 2011). When the processes for assessing goal achievements, such as targets and priorities, are uncertain, this can lead to several negative outcomes. These include difficulties in performance evaluation and understanding, as high program evaluation goal ambiguity creates interpretive leeway that makes it harder for stakeholders to assess results and understand performance outcomes (Jung & Rainey, 2011). In this sense, goal ambiguity can be understood as a form of internal uncertainty since unclear or competing goals make it more difficult to determine priorities, define success, and evaluate and measure performance.

Environmental and external uncertainty, combined with organizational ambiguity, constitute what can be referred to as the *total uncertainty*. When one form of uncertainty increases, organizations may seek to reduce the other in order to manage the overall uncertainty. For

example, when external uncertainty becomes more tangible and difficult to control, clearer goals and intentions may become more important.

In relation to this broader understanding of uncertainty, resilience provides a response-oriented concept for understanding how organizations seek to maintain functionality under changing conditions. Cutter et al. (2008) defines resilience as:

the ability of a social system to respond and recover from disasters and includes those inherent conditions that allow the system to absorb impacts and cope with an event, as well as post-event, adaptive processes that facilitate the ability of the social system to re-organize, change, and learn in response to a threat (Cutter et al, 2008, p.599).

Resilience has also been formalized internationally through the United Nations' work on disaster risk reduction and initiatives such as MCR2030, which aims to strengthen local resilience and preparedness through knowledge-sharing and networks (UNDRR, n.d.). The concept of resilience is relevant to the study as it has not only become a guiding principle on the national level, but also in local government practice. Local authorities are often closest to the impacts of crises and are therefore best positioned to implement context-specific measures (Struggles, 2016).

This overall broader understanding of uncertainty has important implications for how organizations are managed. When external conditions are difficult to predict and internal goals and targets are ambiguous, it becomes harder to rely on fixed assumptions, stable targets, and traditional planning. Duncan's (1972) argument that dynamic environments generate greater uncertainty in decision-making points directly to the managerial challenges created by changing external conditions. Similarly, Abu-Allan and Alghizzawi (2024) argue that greater awareness of uncertainty affects organizational flexibility, strategic responsiveness, and the ability to adapt to shifting circumstances. From this perspective, uncertainty is not only a contextual condition, but also a factor that shapes organizational steering, performance measurement and control.

This link is particularly important for management control systems. Simons (1994, 1995) argues that formal control systems are not only used to monitor outcomes and correct deviations from preset standards, but can also be used interactively by top managers to focus

attention on strategic uncertainties and stimulate dialogue and learning throughout the organization. In his framework, Simons (1994, 1995) notes that interactive control systems are specifically associated with strategic uncertainties, whereas diagnostic control systems are more closely linked to monitoring critical performance variables against preset targets.

In sum, uncertainty should not be understood as a single or straightforward concept. Prior literature shows that it is considered multidimensional, difficult to categorize, and somewhat tied to managerial perception. Environmental uncertainty concerns the perceived inability to accurately predict external conditions affecting the organization, while goal ambiguity concerns uncertainty related to how organizational goals are interpreted and prioritized. Resilience is included as a supporting concept because it helps explain how municipalities may respond to uncertainty through preparedness, coordination, and adaptation. In municipal settings, where external pressures are plenty and often shifting, and where goals may be multiple and conflicting, such uncertainty is likely to have implications for planning, decision-making, and the design and use of PMSs.

3.2 Design and use of PMSs

Performance measurement systems (PMSs) are central to how organizations translate objectives into measures, targets, follow-up, and action (Franceschini et al. 2007). In this study, the focus is on PMSs, but these are understood as part of a broader performance management and control context. Ferreira and Otley (2009) use the term performance management to describe a broad set of formal and informal mechanisms and systems involved in communicating objectives, supporting planning, measurement, control, and learning. This broader understanding is useful for the study, as performance measurement is used for a number of different purposes, including planning, measurement, control, budgeting, and learning (Behn, 2003).

Ferreira and Otley (2009) emphasize the importance in studying both the design and use of performance management systems. In the context of this study, PMS design concerns what objectives are emphasized, what measures are selected, how targets are set, and how performance is evaluated. PMS use concerns how performance information is applied in practice, for example whether it is used mainly for control and accountability, or if it also

supports learning and adaptation. This distinction is important because the same performance information may serve different purposes depending on how it is used.

The design of PMSs is closely connected to organizational goals. Ferreira and Otley (2009) argue that performance management starts with purposes and objectives since these provide the basis for deciding what should be measured and evaluated. In public organizations such as municipalities, this is complex because goals are often broad, tied to politics, and connected to stakeholder expectations. As mentioned in section 3.1, public sector goals may be ambiguous and allow room for interpretation (Oppi et al. 2022). This means that PMS design in municipalities cannot simply be reduced to a question of selecting indicators. It also involves deciding how broad goals should be translated into measurable dimensions, how qualitative aspects should be assessed, and how progress should be interpreted when outcomes are difficult to define.

Another central part of PMS design is the selection of key performance measures. Ferreira and Otley describe key performance measures as financial or non-financial measures used to evaluate whether an organization is achieving their objectives or not. The choice of measures is important because measures direct attention toward certain aspects of performance while potentially leaving others less visible. This becomes relevant in municipal settings because different activities vary in how easily they can be measured. Financial performance, cost measures, and budget deviations are often more straightforward to quantify than areas like quality, preparedness, resilience, and social development, which might require more qualitative assessment. PMS design therefore involves choices about what should be made visible and what can be measured directly, as well as what requires interpretation.

The distinction between targets and measures is also important. Measures enable benchmarking against competitors, tracking progress, and facilitates appropriate managerial decision-making (Grant & Shaw, 2021). Targets go further by defining expected levels of performance. Ferreira and Otley (2009) treat target setting as a central part of PMS, since targets create expectations about what level of performance should be achieved. However, under uncertainty and ambiguity, fixed targets may become problematic. If external conditions change, targets may become less realistic or less meaningful, and if goals are too broad or politically defined, target achievement may not fully capture whether the organization is moving in a desired direction. This distinction is important as municipalities

may still need to rely on measures even when precise targets are difficult to define or evaluate.

PMSs also depend on information flow. A distinction is made between information used for monitoring performance and information that supports learning and future-oriented action (Ferreira & Otley, 2009). This is relevant for the study as municipalities operate under changing conditions where past results do not always provide sufficient guidance for future decisions. PMSs may therefore need to both support feedback and a more forward-looking discussion. PMSs are not only retrospective tools, but can also function as mechanisms through which municipalities interpret and manage uncertainties.

While Ferreira and Otley (2009) provide a broader understanding of performance management and measurement systems, Simons' LOC framework provides the main theoretical lens for analyzing how PMSs are designed and especially how they are used under uncertainty and ambiguity. Simons' (1995) framework identifies four types of control, each addressing a fundamental control problem that organizations face: belief systems, boundary systems, diagnostic control systems, and interactive control systems. Belief systems are used to communicate the core values of the organization, such as the mission or purpose. They can inspire and direct organizational members towards desired strategic objectives. Boundary systems define limits of acceptable behavior. They specify what risks to avoid and they establish rules, codes of conduct, and formal constraints in order to restrict unwanted actions. Therefore, they often have a more negative tone (Simons, 1995). Although both these levers are important components of the overall control package, they are of secondary relevance for this study, since municipal goals and legal or financial boundaries may still shape how PMSs are designed and used. However, the main focus is on diagnostic and interactive control as these are most closely connected to performance measurement, follow-up, accountability, learning and adaptation.

Diagnostic control systems are used to monitor critical performance variables and ensure that outcomes align with predefined targets and standards (Simons, 1995). They are therefore closely connected to budgets, indicators, deviations, and corrective action. McGrath (2001) argues that goal clarity increases the motivational value of rewards, incentives, and satisfaction, thereby enhancing their influence on behavior. Clearly defined and communicated goals can also help absorb uncertainty by guiding attention toward outcomes that are desired

(McGrath, 2001). By making organizational objectives and progress transparent through enabling implementation, diagnostic control systems can foster mutual commitment and coordinated action toward these outcomes. (Adler & Chen, 2011). For municipalities, diagnostic control can become difficult if uncertainty and ambiguity becomes increasingly tangible, as targets and assumptions may become harder to define in advance.

Interactive control systems are formal information systems used by managers to actively engage with organizational processes, focus attention on strategic uncertainties, and stimulate learning, dialogue, and adaptation (Simons, 1994; 1995). In contrast to diagnostic control, interactive use is not limited to checking whether pre-defined targets have been achieved. Rather than simply tracking performance outcomes, interactive control systems involve ongoing discussion where performance information is interpreted, questioned and connected to emerging opportunities and threats (Simons, 1994; 1995). This is relevant in uncertain environments where organizations may need to continuously assess plans and priorities. For this study, interactive use is especially relevant because it connects performance information to dialogue, interpretation, learning and adaptation rather than only to monitoring and corrective action.

A central contribution of Simons' (1995) framework is the distinction between diagnostic and interactive use of control systems. While diagnostic controls are associated with stability, efficiency and the achievement of predefined goals, interactive controls are linked to adaptability, learning, and strategic renewal. Importantly, the same PMS can be used in both ways depending on how decision-makers engage with it. This implies that it is not only PMS design that matters, but also how the system is used in practice. The same indicator may be used diagnostically if it is mainly used to monitor deviation from a target, but interactively if it becomes the basis for dialogue. Other research also indicates that as diagnostic and interactive systems are complementary, a combined use in PMSs may be beneficial, especially under conditions of uncertainty and a focus on flexibility (Henri, 2006; Widener, 2007).

The distinction between diagnostic and interactive use is especially relevant in the context of uncertainty and ambiguity. In environments characterized by complexity, uncertainty and unpredictability, it becomes increasingly difficult to only rely on diagnostic control systems as predefined targets or assumptions can quickly become outdated. Under such conditions,

organizations may need to complement diagnostic controls with an interactive use of PMSs in order to continuously re-assess, identify risks, and respond to changes (Ludji, 2025). At the same time, diagnostic controls remain important because municipalities continue to face demands for accountability and responsible use of public resources. This creates a tension between using PMSs for control and using them for learning and adaptation.

Taken together, Ferreira and Otley's (2009) understanding of PMSs and Simons' LOC framework provide complementary theoretical perspectives. However, Simons' LOC framework remains the main theoretical lens in this study tied to the analysis of how PMSs are designed and especially how they are used for control, accountability, learning, and adaptation under uncertainty and ambiguity.

3.3 Institutional pressures and legitimacy

Institutional theory provides a complementary perspective by emphasizing the external pressures that shape organizational practices. More specifically, this section draws on neo-institutional sociology, which emphasizes how organizations are shaped by institutionalized expectations, legitimacy demands and pressures from their organizational environment (Modell, 2001; Tran & Nguyen, 2020). In this view, organizations do not adopt structures and systems only because they are technically efficient, but also because they are expected, accepted, or perceived as legitimate within their organizational field. DiMaggio and Powell (1983), whose research is foundational to neo-institutional sociology, argue that organizations tend to become more similar over time through processes of institutional isomorphism, where practices are shaped by pressures for legitimacy and conformity rather than just efficiency. This perspective is particularly relevant in the public sector, where organizations are accountable to multiple stakeholders and operate under political, regulatory and professional expectations.

DiMaggio and Powell (1983) identify three forms of institutional isomorphism: *coercive*, *mimetic*, and *normative*. Coercive pressures come from formal and informal demands from powerful bodies such as governments, regulators, or other organizations on which an organization depends. Mimetic pressures arise under uncertainty, when organizations imitate other organizations that are perceived as successful or legitimate. Normative pressures are connected to professionalization, shared norms, education, professional networks, and so on.

These pressures are analytically distinct, but may overlap in practice. In relation to this study, they provide a way of understanding why municipalities may design and use their PMSs in certain ways, not only because they can be internally useful, but because they are externally expected.

Some research argues that organizations are not necessarily passive recipients to pressures mentioned above. Modell (2001), for example, shows that performance measurement practices in public-sector organizations may be shaped by both efficiency-enhancing and legitimacy-seeking rationales, which can be closely intertwined. It is further argued that organizations may engage in proactive mimicking, meaning that organizations do not simply copy others passively. Instead, comparison is used selectively to identify useful practices and strengthen the legitimacy of local choices. This is relevant for this study as municipalities may use comparisons, benchmarking, and external practices as part of learning and adaptation rather than for symbolic ends.

This is especially important in relation to performance measurement. Tran and Nguyen (2020) argue that PMSs in public organizations are closely connected to public accountability as they provide performance information that allows stakeholders to evaluate how public resources are used. From this perspective, PMSs are not only internal tools for planning and control, but also for external mechanisms for demonstrating transparency, legitimacy, and responsibility (Tran & Nguyen, 2020). Building on this, public organizations may therefore find it difficult to move away from structured measurements, even when uncertainty and ambiguity make performance difficult to define or evaluate. Tran and Nguyen (2020) further state that the need to provide performance information to citizens, politicians, auditors, and other stakeholders can create pressure to maintain formal measurement practices.

Institutional pressures may also shape the design of PMSs. Munir and Baird (2016), whose study uses the framework by DiMaggio and Powell (1983), show that PMSs can be influenced by coercive, mimetic and normative pressures, and argue that organizations need to understand how institutional pressures affect the adoption and form of PMSs. They also specifically note that “the failure of organizations to adapt their PMS in response to such institutional pressures may lead to distorted information, which may contribute to poor organizational planning and control, and have severe negative consequences” (Munir & Baird, 2016, p.111). Although the study is conducted in the banking sector, the argument is

relevant for public organizations because it shows that PMSs are not only shaped by internal managerial needs, but also by the institutional environments in which organizations operate. In municipal contexts, this may include legal requirements, professional norms, comparisons between municipalities, and expectations from citizens and political actors.

The link between institutional pressures and uncertainty is important. DiMaggio and Powell (1983) argue that mimetic behavior is more likely when organizations face uncertainty, unclear technologies, or ambiguous goals. Under such conditions, organizations may model themselves on others because imitation provides a way of reducing uncertainty and thus appearing legitimate. This connects directly to what was mentioned in Chapter 3.1; when municipalities face uncertain external conditions and ambiguous goals, they may look towards other municipalities or national actors for models of appropriate performance measurement practices. This may help create comparability and legitimacy, but may also lead to the adoption of measures and systems that are only loosely connected to local needs, and thus does not have any real effect.

In the Swedish municipal context, pressures may be particularly relevant because, like Ladner et al. (2019) established, municipalities have relatively high autonomy and operate with substantial local responsibility. However, they are at the same time also embedded in broader political and administrative systems. They are expected to provide welfare services, use public resources responsibly, and report performance in ways that are understandable and legitimate to a number of stakeholders. Given that 2026 is an election year in Sweden, with national, regional and municipal elections taking place on the same day, such pressures may become extra visible as municipal priorities and resource allocation receive increased public and political attention. Institutional theory therefore complements Simons' LOC by potentially explaining why PMSs may be adopted, maintained or imitated for legitimacy reasons, not only because they support control, learning, or adaptation.

4. Methodology

This chapter presents the methodological choices of the study. It outlines the approach and research design, as well as the qualitative multiple case study design, interview process, analysis of the empirical material, and relevant methodological and ethical considerations.

4.1 Research approach

This study adopts a qualitative research approach and is designed as a multiple case study of three Swedish municipalities. Since the study focuses on perceptions, interpretations, and organizational practices rather than numerical relationships, a qualitative approach is appropriate (Bryman & Bell, 2017). This aligns with the view of Alvehus (2023), who says that qualitative methodology is useful when research seeks to capture nuance, and to unpack and interpret social contexts.

The study is both exploratory and theory-informed. It is exploratory because it seeks to understand how municipalities experience and respond to uncertainty in their specific contexts. At the same time, it is theory-informed because the interview themes and later interpretation of the empirical material is guided by concepts from the theoretical framework, including Simons' LOC and institutional theory. This combination makes it possible to explore respondents' own experiences while still relating the empirical material to concepts that are central to the purpose of the study, as well as the research questions.

Semi-structured interviews were used as the primary method for collecting empirical material. According to Easterby-Smith et al. (2021), semi-structured interviews cover a number of pre-planned themes or questions while still allowing flexibility in how the topics are addressed and in what order they appear. This format was considered suitable because it ensured that the interviews covered the study's key themes, while also allowing respondents to elaborate on issues that were particularly relevant to their role, municipality, and organizational context.

4.2 Research design

4.2.1 Case study design and case selection

A case study design was considered appropriate because the study examines PMS design and use within real municipal settings. According to Yin (2018), case study research is suited to examine complex, contemporary phenomena in depth and within their real-world context. Since uncertainty, ambiguity, and performance measurement are present in municipal governance practices, a case study design allows these issues to be studied in the organizational settings where they occur.

A multiple case study design was therefore chosen since it enables comparison across cases. Yin (2018) argues that evidence from multiple cases is often considered more compelling, as multiple-case designs provide a stronger foundation for analysis than single-case designs. By studying more than one case, the research aims to identify how municipalities perceive uncertainty, ambiguity, and PMS design and use. This is relevant because Swedish municipalities are responsible for a wide range of activities and must balance several goals, priorities, and service areas simultaneously, which makes them suitable cases for studying goal ambiguity and uncertainty.

The cases were selected purposely rather than randomly. Multiple-case designs should not follow a statistical sampling logic; instead, cases should be carefully selected because they are expected to provide useful replications or contrasts (Yin, 2018). In qualitative research more broadly, case selection is commonly guided by relevance to the research purpose rather than statistical representativeness (Bryman & Bell, 2017). The selected municipalities were considered relevant because they all operate within the same national and regional framework, while still differing in characteristics such as size, income levels, political governance, and other local conditions. This variation allows the study to examine whether similar themes appear across different municipal contexts, while also preserving relevant differences between the cases. The aim is therefore to develop a deeper understanding of how the studied phenomena appear in municipal contexts.

4.2.2 Respondent selection and interview procedure

The empirical material was generated through semi-structured interviews with respondents from three selected Swedish municipalities. The respondents were selected purposely based on their relevance to the study's purpose and research questions. In qualitative research, sampling is commonly guided by relevance to the research purpose (Bryman & Bell, 2017). Since the study examines how uncertainty, ambiguity, and PMSs are perceived and managed, it was important to interview individuals with proper insight into municipal planning, budgeting, follow-up, goal-setting, resilience, and performance measurement.

The respondent selection included both strategic-level respondents and operational or specialist-level respondents. Strategic-level respondents, such as a CFO, head of analysis, process manager, and financial planning and control manager, were included because they could provide broader perspectives on municipal governance, planning, goal-setting and PMS. Operational and specialist-level respondents, such as controllers and an analyst working specifically with resilience and preparedness, were included as they could provide more detailed insights into how systems and practices are applied in day-to-day work. A clear overview of the roles and specific municipalities is shown in table 1.

<u>Organizational level</u>	<u>Respondent roles</u>
Strategic level	CFO; Head of Analysis; Process Manager; Financial Planning & Control Manager
Operational/specialist level	Controllers; Analyst

Table 1: Information regarding interviewees

Ahead of each interview, an outline of the interview topics was sent to the respondents. The interviews followed a semi-structured format guided by key topics while still allowing flexibility and follow-up questions (Easterby-Smith et al. 2021). These themes concerned the respondents' roles, perceived uncertainty, goal ambiguity, resilience, PMS design and use, and external influence. Follow-up questions were adapted to each respondent's role and area of expertise.

The interview questions were informed by the study's theoretical framework. From a distance, Simons' LOC framework (1995) guided questions concerning the use of PMS for control, accountability, learning, and adaptation, while literature on uncertainty, ambiguity, resilience, and institutional pressure assisted in questions about how municipalities perceive and respond to certain, potentially changing, conditions. Bedford (2015) was also used for translating control-related concepts into interview topics, particularly regarding diagnostic and interactive uses of control systems.

The interviews were conducted digitally through online media platforms. This form of data collection can be described as mediated interviews, which are interviews conducted "through media, such as apps for online video and audio platforms" (Easterby-Smith et al., 2021, p.198). Online interviews provided an appropriate and effective approach for gathering information regarding their professional experiences, organizational perspectives, and input on municipal control practices.

4.2.3 Transcription, recording, and thematic analysis

The interviews were recorded with the respondents' consent and later transcribed. The decision to record an interview lies with the interviewee, and the issue should be managed carefully due to possible concerns regarding confidentiality and the use of information (Easterby-Smith et al., 2021). Transcribing recorded material into written text is a common part of preparing qualitative interview data for analysis (Easterby-Smith et al., 2021). AI-based transcription software was considered early in the process, but the interviews were manually transcribed as AI accuracy was inconsistent. Manual transcription also supported a closer understanding of the empirical material and its nuances. Alvehus (2023) emphasizes that transcription is the first step in the analysis, since spoken language is transformed into text, and this transformation is interpretive in itself. Recording and transcription also allow the collected material to be used repeatedly and support a more careful analysis of what was said during the interviews (Bryman & Bell, 2017). This made it possible to return to the material several times and examine the respondents' statements in detail.

A thematic analysis approach was used to examine the collected empirical material and to identify recurring themes within the data. Braun & Clarke (2006) describe thematic analysis as a flexible and accessible method for qualitative data analysis. They position the approach

in relation to other qualitative analytical methods that focus on identifying themes and recurring patterns within empirical material.

The analysis was partly theory-informed, as the coding was guided by concepts discussed in Chapter 3, including uncertainty, ambiguity, resilience, Simons' LOC and institutional pressure. By coding data thematically, a structure is developed that guides the analytical process (Easterby-Smith et al., 2021). At the same time, attention was also given to themes that emerged from the respondents' own descriptions.

The empirical material was analyzed both within and across cases. Each case was first examined separately to understand the local and specific context. This is consistent with Yin's (2018) view that cross-case synthesis should begin by identifying patterns within each case before comparing patterns across cases. After this, the material was compared across the three cases to identify recurring patterns and differences. This made it possible to organize the empirical findings thematically while still preserving relevant differences between the cases. Based on this process, the empirical findings were organized around themes corresponding back to the purpose and research questions of the study, including uncertainty and ambiguity, responses to this, PMS design and use, and also institutional pressure.

4.3 Methodological strengths and limitations

The methodological design of this study has several strengths. First, the use of a multiple case study makes it possible to examine chosen concepts in more than one municipal context. The selected cases are relevant because they operate within the same national and regional framework, while still differing in size, local conditions, and organizational practices. This supports comparison across cases and strengthens the study's internal validity, as recurring patterns can be examined across different settings rather than within a single case study. According to Bryman and Bell (2017), internal validity concerns how accurately the findings of a study correspond to the empirical data and the theoretical concepts used in the analysis.

Second, the respondent selection contributes to the study's empirical depth. By including both strategic-level respondents and operational or specialist-level respondents, the study captures different perspectives on municipal governance, planning, and terms like uncertainty and more. Strategic-level respondents provide broader municipal insight to steering and chosen

concepts, while operational and specialist respondents provide more detailed descriptions of how issues are perceived and managed. This strengthens the credibility of the empirical material, as the study does not rely on one type of respondent only.

A further strength is that the study builds on well-established theoretical concepts and frameworks. Simons' LOC, institutional theory, and additional concepts such as uncertainty and ambiguity, provide a theoretical basis for the interview themes and later interpretation of the empirical material. In addition, Bedford (2015) was used for translating control-related concepts into interview questions. This strengthened the connection between the study's theoretical framework, interview guide, and empirical analysis.

At the same time, the study also has its limitations regarding external validity. Since it includes three municipalities from the same region, the findings cannot be statistically generalized to all Swedish municipalities. Instead, the study aims for analytic generalization, meaning where empirical findings are interpreted in relation to the theoretical framework (Yin, 2018). Municipalities in other parts of Sweden, or in countries with different degrees of municipal autonomy, may experience different conditions.

Reliability was addressed by using a common interview guide, recording and transcribing the interviews, and organizing the empirical material thematically. However, since the study is qualitative and interpretive, the findings are shaped by the respondents' accounts and the researchers' interpretation of the material.

4.4 Ethical considerations

Ethical consideration was taken into account throughout the research process. The study followed LUSEM's 2023 guidelines for processing personal data in student projects. Respondents were informed about the purpose of the study, participated voluntarily, and gave consent before interviews were recorded and transcribed. Since recordings and transcripts may contain personal data, the material was managed securely, used only for the purpose of the thesis, and not shared with external parties. To protect respondents, the empirical material is presented through professional roles rather than personal names. Collected material will be deleted when the project has been examined with a passing grade, as per LUSEM (2023) guidelines.

5. Empirical Findings

This chapter presents the empirical findings from the interviews with the three municipalities. The findings are structured around the study's research questions and central themes identified in the empirical material.

5.1 Case municipalities

The three municipalities in this study are Landskrona, Lomma, and Malmö. They are all located in Skåne but differ in terms of size, local conditions, political setting, and strategic priorities.

The largest municipality of those three is Malmö. It has been appointed a resilience hub since 2022 and is a member of the UN initiative MCR2030 (UNDRR, 2022). Malmö is one of the fastest growing cities in Sweden with 367,924 residents as of 31 of December 2025 (Malmö stad, 2025). The city is currently governed by the Social Democrats, the Liberals, and the Green Party (Malmö stad, n.d.). In 2024, the median income in Malmö was 330 700 SEK (Ekonomifakta, 2026a).

Lomma is the smallest municipality of the three and according to their annual report, they had 24,680 residents by the end of 2025 (Lomma kommun, 2025). Coastal planning, climate adaptation, and ongoing municipal government development are significant aspects of Lomma's local setting. Lomma is currently governed by a centre-right coalition in which the Moderates hold a leading role. As of 2024, Lomma has the third highest median income in Sweden at 461 300 SEK (Ekonomifakta, 2026b).

Landskrona is positioned between Malmö and Lomma size-wise, having 47,309 residents (Landskrona Stad, 2024). Landskrona emphasizes urban development and strategic planning through its vision. The municipality also combines growth ambitions with a strong focus on future-oriented planning and local development (Landskrona Stad, 2026). Landskrona has a pronounced liberal political profile, with the Liberals holding a strong local position. As of 2024, the median income in Landskrona was 320 600 SEK (Ekonomifakta, 2026c).

Taken together, the three municipalities differ in several important respects. At the same time, they operate within the same national and regional framework. Table 2 represents respondents' roles.

Municipality	Strategic-level respondents	Operational / specialist respondents
Landskrona	Head of Analysis	Controller
Lomma	CFO	Controller
Malmö	Process Manager + Financial Planning & Control Manager	Analyst

Table 2: Respondents' roles in each municipality

5.2 Uncertainty and ambiguity

5.2.1 Perceived uncertainty and ambiguity

Across the interviews, respondents described uncertainty as a central condition in municipal governance, although its emphasis differed between the cases. The uncertainties mentioned were mainly connected to demographic change, economic conditions, political decisions, external shocks, climate change, and electricity supply. Several respondents also described internal ambiguity related to broad goals, political priorities and the difficulty of translating complex municipal objectives into measurable follow-up.

Demographic change was one of the most recurring uncertainties across the cases. In Lomma, demographic development was described as a major challenge, especially because the municipality faces a combination of fewer children and an increasing number of elderly residents. This creates uncertainty about future service needs and resource allocation, especially between areas such as schools, childcare, and elderly care. The same pattern was also visible in Landskrona, where demographic development was connected to changing

needs in municipal premises and welfare services. In Malmö, the financial planning and control manager also described demography as a major uncertainty.

Demographics are a major challenge for everyone. Population forecasts look different than before; the elderly are getting older and older while fewer children are being born. This will affect municipalities in different ways...all of this affects tax revenues. (Malmö, Financial Planning & Control Manager)

Economic and financial uncertainty was also emphasized, especially in relation to tax revenues, government grants, inflation, employment and changing national conditions. In Lomma, respondents connected uncertainty to tax revenues, state grants, the municipal “equalization system”, and the broader economic effects of events such as war and trade conditions. In Landskrona and Malmö, respondents similarly connected financial uncertainty to tax-base forecasts, demographic development, while also pointing towards unemployment and social exclusion as important conditions affecting the city.

Several respondents also described uncertainty as increasingly connected to external shocks and geopolitical developments. Landskrona’s head of analysis described economic downturns, wars, pandemics and other unpredictable events as examples of uncertainties that are difficult to plan for in advance. Malmö respondents similarly emphasized that rapid changes in the surrounding world has made uncertainty more tangible, while also noting that external uncertainty cannot be predicted or influenced directly by the municipality.

Climate uncertainty was particularly visible in Malmö, and the analyst described climate change as a central uncertainty.

No one knows exactly how climate change will develop, which means that their work is entirely scenario-based. It is a major uncertainty that affects everything from investments to physical planning. (Malmö, Analyst)

Preparedness and Malmö’s coastal location were also connected to uncertainty. Landskrona’s coastal location was similarly linked to long-term climate concerns, particularly related to rising sea levels. Electricity supply was also mentioned as a concrete uncertainty. It was

explained that Malmö had started a municipal electricity company in order to secure electricity supply during uncertain times.

Political uncertainty was another recurring theme. In Malmö, all respondents emphasized that municipal work is affected by political governance. The analyst noted that it is difficult to know whether the same political direction will remain after an election year, and that political priorities can affect the focus of work within certain areas. Uncertainty was similarly described in regards to what will happen in the next mandate period, especially since Malmö is governed by a minority coalition. In Lomma, state grants were also described as more uncertain during election years, since political priorities at the national level may change. These responses suggest that political uncertainty operates both locally and nationally, affecting goals and planning.

The interviews also show that uncertainty has an internal dimension linked to ambiguity in goals and priorities. In Lomma, the CFO distinguished between clear financial goals and broader and more qualitative overarching goals. These broader goals require interpretation and qualitative assessment rather than simple measurement. In Landskrona, goals were described as more directional at the higher level, while more concrete indicators and activities appear further down in the organization. Malmö provided similar examples. The process manager explained that the city's broad political goals are translated by committees into their own contributions.

An important theme was related to whether increased external uncertainty creates a desire to reduce internal ambiguity. This was most clearly expressed in Malmö, as it was explained that when there is tangible uncertainty around the municipality, there is a strong focus on creating calm and stability for the committees. The financial planning and control Manager described Malmö as working with the idea of being "one city", despite consisting of many committees, and emphasized the importance of creating structure so that those committees feel secure. This suggests that external uncertainty may increase the need for internal clarity and coordination. Similar tendencies appeared in Lomma and Landskrona, although expressed somewhat differently, where respondents emphasized stable planning, clear goals and continuity in the steering.

Overall, the interviews indicate that municipal uncertainty is multidimensional. Respondents described uncertainty as external through demographic change, economic conditions, climate change, infrastructure, geopolitical events and political decisions, but also internal through broad goals, qualitative objectives and difficulties in assessing progress.

5.2.2 Responses to uncertainty

Across the interviews, the municipalities described responses to uncertainty mainly in practical terms rather than conceptual terms. Responses were connected to planning, forecasting, flexibility, and preparedness. The term resilience was not used equally across the municipalities, but all three described practices that can be understood as resilience-related.

In Lomma, responses to uncertainty were closely connected to cautious and continuous financial planning. The municipality works with flexibility in their budget process, since conditions can change between early budget assumptions and the final political decision later in the year. Lomma emphasizes long-term planning, risk reserves and precautionary budgeting. From an operational perspective, the controller similarly described uncertainty as something managed through planning, recurring meetings, forecasting, and continuous follow-up as more information becomes available.

In Landskrona, uncertainty was described as requiring flexibility. The head of analysis referred to unpredictable events as “black swan” events and described working with adaptable solutions, such as examining whether municipal buildings can be used for different purposes if demographic needs change. The controller emphasized following trends, forecasts, and broader environmental developments closely to support budgeting and planning. When uncertainties arise, the central controller group discusses how they should be managed, and political reprioritization may be needed if costs cannot be absorbed within the organization.

The interviews also show different ways of relating to resilience as a concept. The term is not actively used in Lomma or Landskrona, but the underlying idea is still tangible.

A lot of it is trends – things come and go. Agenda 2030, resilience, data-driven decision-making, those kinds of things are often just noise...the umbrella concept of

resilience might be new, but we have always worked with it. (Landskrona, Head of Analysis)

Malmö is different in that resilience is a more explicit part of the municipality's work. One respondent worked specifically with municipal resilience. Malmö's practical response to uncertainty was described as having an "all-hazards approach", where the city works with broader preparedness rather than preparing for every possible crisis separately. In the budget process, committees are also asked to describe uncertainties and issues they may struggle with.

Overall, the municipalities respond to uncertainty in broadly similar ways through financial caution, continuous forecasting, flexible planning, and preparedness-oriented work. Although they differ in how explicitly they use the term resilience, preparedness work still exists, and uncertainty is not managed by eliminating unpredictability, but by creating processes that allow adjustment when conditions change. These processes can be reflected in PMS design and use, as it can shape what municipalities measure, how they assess progress and how performance information is used under uncertainty.

5.3 Design of PMS

5.3.1 Lomma

The Lomma CFO described the steering model as consisting of three overarching goals and three clearly measurable financial goals. The overarching goals were broader and more qualitative, while the financial goals were easier to measure. Lomma has moved away from a model where overarching goals were directly measurable towards one that requires more qualitative explanation and interpretation. Indicators are still used, but they alone do not determine whether progress has been made. Instead, the assessment requires qualitative reasoning about whether the organization is moving in the right direction. Financial performance is followed through budget deviations and financial results, while key figures such as cost per user and cost per child help connect resources to service output.

Lomma's PMS design also illustrates a distinction between target achievement and performance. The CFO explained that when goals are broad and qualitative, external factors

can be weighed into the overall assessment, meaning that progress towards a target may matter even when the target is not fully achieved.

If the target is to increase it [water temperature] from 20 to 25 degrees, then 21 degrees may still represent a very positive improvement. We therefore try to incorporate qualitative overall assessments in order to obtain a more realistic understanding of the situation as a whole. (Lomma, CFO)

5.3.2 Landskrona

PMS design was described through a more explicit distinction between goals, indicators, and activities. The head of analysis explained that goals describe what should be achieved, indicators show whether the municipality is moving towards the goal, and activities describe what should be done to reach it. Landskrona has five overarching goals which all committees must address, but the committees themselves choose which indicators best reflect their contribution towards these goals. Respondents emphasized the importance of limiting the number of goals and using stable, comparable indicators to understand whether the municipality has improved. The head of analysis encourages the committees to use Kolada, an open and free database of information concerning Swedish municipalities, when selecting indicators, as it allows for comparison with other municipalities.

The Landskrona interviews also show that targets can function as long-term ambitions rather than only short-term benchmarks, as illustrated by the unemployment goal:

We have had a goal for ten years that unemployment should be in line with the Skåne average, and we have never achieved it...but we have maintained the goal because it is so well established; everyone knows about it and it is frequently discussed. (Landskrona, Head of Analysis)

The goal was described as important because it continues to direct attention. The controller described the municipality's higher level goals as directions or prioritized areas, while more measurable elements occur further down in the organization.

5.3.3 Malmö

In Malmö, PMS design includes both operational goal areas and financial goals. The financial planning and control manager described Malmö as having five operational goal areas, alongside financial goals related to good economic housekeeping over time. These financial goals are followed through a small number of indicators, including result levels over time and debt. Malmö also provides a clear example of how PMS design can change in response to limitations in indicator-based steering. The process manager described how Malmö had previously worked with a model strongly focused on indicator planning and follow-up. According to the respondent this risked producing operations that were measurable rather than focused on what was most important, while narrow indicators could provide too little knowledge about what was actually being done in relation to broad goals. Malmö still requires indicators, but combines them with qualitative reasoning about how the work has developed and whether intended effects have been achieved. Goal assessment therefore requires both indicator results and a qualitative discussion. Malmö also does not use citywide indicators in the same way for all goals, as different parts of the organization contribute differently.

The Malmö interviews also show that some areas are especially difficult to measure. The respondent working with climate adaptation and resilience explained that Malmö is still developing indicators for climate, including insurance-related damage costs connected to flooding and properties exposed to rising sea levels. Measuring preparedness was described as difficult because the concepts are broad and hard to quantify. This reinforces a broader pattern across the cases: PMS design is not only a matter of selecting fixed indicators and targets. Instead, the municipalities combine measurable indicators with qualitative assessments, comparisons, and alignment with broader political goals. Across the cases, uncertainty and ambiguity appear to make PMS design more dependent on interpretation, comparability, and contextual judgment, especially in areas where goals are more difficult to measure.

5.4 Use of PMS

5.4.1 Lomma

In Lomma, PMSs are used to establish control and follow-up, especially through financial measures such as cost per user and budget deviations. The CFO highlighted the importance of having budget flexibility under external uncertainty to enable swift adaptation. The controller further explained that PMSs also help politicians understand how resources are spent and how financial resources connect to service delivery. Accountability was therefore described as an important part of PMS use, especially in relation to transparency and the need to show how taxpayer money is being spent.

PMS use also enables learning and adaptation. Lomma has moved from a measure-heavy approach to one that integrates qualitative reviews with quantitative indications, according to the CFO. This change has allowed for a more comprehensive understanding of performance, allowing the municipality to adjust its plans in response to future challenges. The controller confirmed this by emphasizing how crucial it is to compare performance measures with other municipalities, particularly when measuring service efficiency and quality. For example, discussions on how resources could potentially be better distributed to maximize service delivery when the cost per user in elderly care was higher in other municipalities.

It is not only about control, but also about a learning process and an assessment of what we get for the money. That is what we are supposed to deliver to the citizens: bang for the buck. We try to use key figures and performance measures to clarify, explain, and create a better understanding of what happens behind the numbers.
(Lomma, CFO)

5.4.2 Landskrona

Landskrona uses PMSs for both learning and control, but they focus a lot on comparison, follow-up, and preserving direction over time. Performance data is a method of tracking past performance and comprehending the reasons behind specific results. The head of analysis pointed out the need for consistent goals and indicators rather than changing them constantly. This enables the municipality to determine whether performance is increasing over time by being consistent. As a result, PMS is used not just to identify whether goals have been met

but also to support internal conversations regarding outcomes, progress, and the causes of various results.

PMS use is also directly related to resource prioritization and budget control. The controller clarified that while performance measurements are utilized more frequently within the operational units, central follow-up focuses on the relationship between budget and results. Also, changes or delays in investment spending might impact the operating budget and will instead allow room for other objectives, the controller described investment planning as a crucial area of follow-up.

We look at the budget and the outcome, and how these correspond with each other. Centrally, the focus is more on budget follow-up and budget compliance, while the operations work more directly with performance measures. (Landskrona, Controller)

The respondents of Landskrona describe the usage of PMS for accountability and support learning. Indicators are helpful for communication and for demonstrating progress, such as when unemployment has declined over time, according to the head of analysis. Furthermore, the controller explained that when costs and revenue stop increasing, follow-up can result in discussions about adjusting financial frames. This demonstrates how Landskrona uses PMS both prospectively to guide discussions about future objectives, resource allocation, and organizational adaptability as well as retrospectively to report results.

5.4.3 Malmö

The Malmö interviews described PMS use as more focused on collaboration, learning, and follow-up in complex policy contexts than as a strict control measure. Instead of depending entirely on centrally established performance measures, the municipality allows administrations to specify what they need to work on. This was evident in areas like resilience and climate adaptation where progress is difficult to measure with precise quantitative metrics. In these areas, the municipality often evaluates whether processes are proceeding as planned and whether work is moving towards the right direction.

PMS use is also not limited to formal or externally visible indications. Rather than only relying on public indicators of target achievement, Malmö uses performance information to

follow ongoing processes and support internal development work. A learning-oriented use was emphasized:

Malmö Stad does not have control-based steering in that way. Instead, it is designed so that the administrations themselves can define what they need to work more with, and so that the city can collaborate across administrative boundaries. (Malmö, Financial Planning and Control Manager)

At the same time, Malmö still struggles to create suitable indicators for uncertain and long-term challenges. For instance, measuring resilience and climate adaptation is challenging since it is not clear what it means for “a city to become more resilient”. This suggests that performance data supports internal conversations and development efforts, while the municipality continues to search for better ways to track and communicate progress in areas characterized by uncertainty and ambiguity.

5.5 External influence and institutional pressure

Across the interviews, external influence and pressure appeared through comparisons with other municipalities, national systems, professional networks, legal and regulatory requirements, and expectations of transparency and accountability. Respondents generally did not describe performance measurement as something adopted purely for legitimacy reasons, but rather as a source of learning and coordination.

A recurring theme was the use of comparison with other municipalities. In Lomma, the CFO explained that the municipality looks at other municipalities when evaluating its own performance, but also to evaluate whether it provides sufficient quality and value in relation to the resources used. It was also emphasized that municipalities do not compete like private companies do, and that the principle of public access to information makes it easier to contact and learn from other municipalities.

Like Lomma, Landskrona also described comparison as a central part of their performance measurement. The head of analysis explained that the municipality uses Kolada to compare itself to other municipalities, especially when assessing indicators related to quality and performance:

We always encourage the committees to use Kolada for benchmarking. The risk of creating your own performance indicators is that it becomes difficult to determine whether the result is actually good because there is nothing to compare it to. Of course, we can measure performance over time, but we do not know how it compares with other municipalities. (Landskrona, Head of Analysis)

In Malmö, comparison was also present, but described somewhat differently. The process manager explained that Malmö participates in SKR networks and has discussed steering models with other municipalities, mainly as a way to learn rather than something that determines Malmö's own model. The financial planning and control manager added that Malmö looks for municipalities with similar challenges and structures. It was described as a way to exchange advice, coordinate, and learn from municipalities facing comparable conditions.

External influence was also connected to steering, state grants, legal requirements and rankings. In Lomma, state grants were described as an uncertainty factor, especially during election years and when government priorities change. In Landskrona, preparedness work was said to have increased partly due to support and funding from national and regional levels. Malmö respondents also described how targeted grants, legal requirements, and external project funding influence municipal planning, particularly in relation to preparedness, war planning, and climate initiatives. Overall, there was also an emphasis on the broader expectations that are placed on municipalities, no matter the contextual conditions:

There are expectations on the municipality to ensure that essential public services continue to function regardless of external uncertainties. (Malmö, Analyst)

When asked whether things are sometimes measured or implemented primarily for legitimacy reasons, respondents generally rejected this interpretation, although some answers were more nuanced than others. Lomma noted that legal requirements may at times contribute to an overly rigid control environment, where certain measures must be included even though they are considered to have limited relevance to the organization. The financial planning and control manager in Malmö stated that doing something because other municipalities do it can

occur, particularly when the city tests approaches that have been deemed successful elsewhere. Symbolic action was connected to politics in that some decisions may be made because they appear favorable depending on the political situation.

Overall, external influence and pressure was visible across all three municipalities. Comparisons, networks, grants, legislation and rankings influenced how municipalities relate to performance measurement, and respondents generally emphasized usefulness, learning and comparability rather than measurement for appearance. Malmö also noted that political expectations may sometimes affect what municipalities choose to test or present.

5.6 Summary of empirical findings

According to the empirical findings, the three municipalities perceive uncertainty as a crucial and growing aspect of local governance. Across the cases, uncertainty was described as multidimensional and connected to political, economic, demographic, climate-related, and global development. However, the interviews demonstrated that uncertainty also exists internally due to ambiguity regarding political goals, qualitative targets, and challenges in evaluating complex municipal outcomes. Several respondents also described growing external uncertainty as increasing the need for internal planning, stability, coordination, and clarity.

The findings also demonstrate that rather than using abstract concepts, the three municipalities mostly use organizational and practical strategies to manage uncertainty. It was important for the municipalities to focus on long-term planning, continuous forecasting, flexible budgeting, preparedness, and regular follow-up procedures in order to manage uncertainty in the best possible way. Although the term resilience was used differently, all three municipalities described practices related to adaptability, preparedness, and flexibility. Malmö was the case where resilience was most explicitly included in governance and planning.

The different municipalities combined their financial indicators with more general qualitative goals and evaluations regarding the design of PMSs. The interviewees acknowledged a tension between the need for measurable indicators and the difficulty of measuring broad municipal goals through specific quantitative metrics. Lomma distinguished between clear

financial goals and broader qualitative goals, Landskrona highlighted stable comparable indicators, while Malmö described a shift away from overly indicator-based steering towards a combination of indicators and qualitative reasoning.

Regarding the use of PMSs, the findings show that the municipalities used performance information for several purposes at the same time. PMSs were used for financial control, budget follow-up, cost measures, accountability, and responsible resource use. However, it was also used for qualitative interpretation, discussion and learning. Across the cases, PMSs were therefore not only used to monitor whether targets had been achieved, but also to support discussions about why results occurred and how the municipalities should respond under uncertainty.

Lastly, the interviews show that institutional pressure and external influence affected municipal governance and performance measurement through transparency expectations, state grants, networks, municipal comparisons, and legislation. Respondents generally described these influences as learning-oriented and practical rather than purely symbolic or legitimacy-driven. However, it was also shown that comparison and political expectations may influence what municipalities prioritize, implement or communicate externally.

6. Analysis and discussion

This chapter analyzes and discusses the empirical findings in relation to the theoretical framework. It focuses on how uncertainty, ambiguity, and institutional theory shape the design and use of performance measurement systems in the studied municipalities. It further addresses the empirical and theoretical contributions, limitations, and future research.

6.1 External uncertainty and internal ambiguity

The empirical findings support the theoretical view that uncertainty is not a single or clearly bounded phenomenon. Walker et al. (2003) argue that uncertainty is not simply the absence of knowledge, since uncertainty may remain even when considerable information is available. This was visible in all three municipalities. Respondents described uncertainty as the difficulty of interpreting several changing conditions at the same time, including demographic change, economic conditions, political shifts, climate change, electricity supply, and geopolitical events. The findings therefore align with Abu-Allan and Alghizzawi's (2024) understanding of uncertainty as multidimensional.

Duncan's (1972) concept of perceived environmental uncertainty helps explain why the municipalities do not describe uncertainty in identical ways even though they operate within the same national and regional context. According to Duncan (1972), uncertainty depends not only on external conditions, but also on how decision-makers perceive and interpret those conditions. This interpretive dimension can also be understood through Weick's (1995) concept of sensemaking, where organizational actors give meaning to external cues by relating them to existing frames and ongoing organizational concerns. This is relevant because several respondents held strategic roles connected to planning and decision-making, meaning that their descriptions show how uncertainty is translated into municipal concerns. For example, demographic change was interpreted primarily as a service-planning issue, while issues like electricity supply and climate change were interpreted as uncertainties affecting long-term preparedness. This suggests that uncertainty becomes meaningful for municipalities when external developments are interpreted in relation to local responsibilities and decision-making needs.

This also supports Abu-Allan and Alghizzawi's (2024) argument that perceived environmental uncertainty affects strategic planning, resource allocation and an organization's ability to adapt. In the empirical material, uncertainty became especially important when it affected the municipalities' core responsibilities. Demographic change influenced schools, elderly care, tax revenues, various premises, and long-term planning, all of which can be tied to a municipality's broader welfare responsibility. Economic uncertainty was also tied to welfare capacity and the allocation of public resources, and in this sense, external uncertainty becomes practically significant as it challenges the assumptions on which municipal planning and governance are based.

However, the findings also show that uncertainty is not only external. As discussed in Chapter 3, ambiguity can be understood as an internal dimension of uncertainty. Vakkuri and Meklin (2006) defined ambiguity as an absence of clarity and consistency, while Chun and Rainey (2005) define goal ambiguity as the extent to which organizational goals allow room for interpretation. This was visible across the cases through the distinction between financial goals and broader qualitative goals that require interpretation. Political goals also had to be translated and interpreted by committees into their own contributions, especially in Malmö. These examples alongside the empirical findings show that internal ambiguity exists and concerns how goals are understood, prioritized, translated and evaluated.

The findings therefore support the theoretical argument that public sector organizations face particular challenges related to goal ambiguity. As discussed in the literature review, public organizations often operate with multiple, broad and sometimes conflicting goals, which then makes it more difficult to define success or evaluate performance. In the municipalities, goals were not necessarily absent or poorly formulated, but they often required interpretation before they could guide action or measurement. This suggests that ambiguity is not simply a weakness in municipal governance, but a condition of governing complex public organizations where political priorities, service quality, financial constraints and democratic legitimacy must be balanced.

A central finding is that external uncertainty and internal ambiguity appear to interact. This connects to the idea of *total uncertainty* introduced in the problematization and developed in Chapter 3. When external uncertainty increases, municipalities may seek to reduce internal

ambiguity by strengthening their coordination and internal clarity. This was most clearly visible in Malmö, where emphasis was put on creating stability and a sense of being united when uncertainty increases. Similar tendencies appeared in the other cases as well, where respondents described the importance of stable planning assumptions, continuity, and clear structures. While municipalities are not able to control external uncertainty, they can attempt to make internal governance more coherent in order to ease the effects of the uncertainty that cannot be managed.

This finding also nuances the assumption that uncertainty mainly concerns unpredictable external events. In the municipalities, uncertainty was also created by the need to interpret broad goals, prioritize between objectives, and decide how performance should be assessed, which is relevant for PMSs. If goals are broad or ambiguous, then PMSs cannot simply translate objectives into neutral indicators. Instead, they become part of the process through which municipalities interpret what matters, define what can be followed up, and decide how results should be understood.

Overall, the findings suggest that uncertainty in Swedish municipalities should be understood as both external and internal. It shows why PMSs cannot be understood as purely technical tools for measuring performance. They are also governance mechanisms that help municipalities create structure and make uncertain conditions more manageable. This sets up the next section, which analyzes how uncertainty and ambiguity are reflected in the design of PMSs.

6.2 Designing PMSs under uncertainty and ambiguity

The empirical findings indicate that uncertainty and ambiguity affect PMS design by making purely target-based and indicator-driven systems insufficient. Under conditions of external uncertainty, municipalities cannot assume that future conditions will remain stable, while internal ambiguity means that broad political goals often require interpretation before they can be measured. Following the PMS perspective developed in section 3.3, design is therefore not only about selecting indicators, but about connecting objectives, measures, targets, evaluation and information flows. PMS design becomes a balancing act between structure and interpretation.

This is important in relation to Simons' LOC framework. Diagnostic control depends on the ability to define critical performance variables, set targets and monitor outcomes (Simons, 1994; 1995). Under uncertainty and ambiguity, however, these conditions become more difficult to maintain. If external circumstances change, targets may become less realistic. If goals are broad or politically defined, indicators may only capture parts of what the municipality is trying to achieve. This does not make diagnostic control irrelevant. It rather means that PMS design must allow for room for interpretation. A PMS designed only around fixed targets mainly supports diagnostic follow-up, while a PMS that also includes qualitative assessment and contextual information creates better conditions for later interactive use.

The findings connect closely to the literature on goal ambiguity. Vakkuri and Meklin (2006) describe ambiguity as a lack of clarity and consistency, while Chun and Rainey (2005) define goal ambiguity as the extent to which organizational goals allow room for interpretation. This was visible in all three municipalities. Financial goals were generally easier to define and measure, whereas broader political or operational goals often required qualitative assessment instead. This suggests that PMS design in municipalities cannot be understood as simply a technical process of translating goals into indicators. Rather, it is a way of managing ambiguity by deciding which goals can be measured directly, which require interpretation, and how different forms of performance information should be combined.

Lomma shows how PMS design can combine diagnostic structures with uncertainty-sensitive judgment. The municipality had clear financial goals and measurable financial indicators which support control and accountability. At the same time, broader overarching goals were described as more qualitative and required explanation rather than only numerical assessment. This design is relevant under uncertainty because external conditions affect whether goals can be achieved as planned. By combining targets and measures, Lomma's PMS design allows the municipality to maintain control while still considering progress and contextual circumstances when evaluating broader goals. Financial measures therefore support monitoring, while qualitative assessment helps interpret areas where performance cannot be reduced to a single number.

Landskrona shows a slightly different way of designing PMSs under uncertainty. The municipality distinguished between goals, indicators and activities, where goals functioned as broader directions while indicators and activities made progress more observable. This

separation is analytically important because it allows broad political ambitions to remain meaningful without requiring them to be fully measurable in themselves. Landskrona's emphasis on stable indicators over time can also be interpreted as a response to uncertainty. When external conditions change, stable measures make it possible to follow developments across time and assess whether the municipality is moving in the desired direction. In Ferreira and Otley's (2009) terms, the design creates continuity in the information used for evaluation and follow-up, rather than trying to eliminate uncertainty.

Malmö provides the clearest example of how uncertainty and ambiguity can lead to changes in PMS design. Respondents described how the city had moved away from an overly indicator-focused model because it risked directing attention towards what was strictly measurable rather than what was most important. This is central to RQ2 because it shows that PMS design under uncertainty is not necessarily about adding more indicators. Instead, too many narrow indicators can create a false sense of control where performance appears to be measurable even though important aspects of municipal work remain difficult to capture. Malmö's combination of indicators and qualitative reasoning can therefore be understood as an attempt to design a PMS that is more suitable for complex activities and uncertain conditions.

The distinction between measures and targets is important in this context. Targets specify expected outcomes and are therefore more closely connected to diagnostic control. They support accountability, but can also become problematic when external conditions change or when goals are of ambiguous character. Measures, however, can remain useful as they do not need to function as strict targets. They can support discussion and act as a way of seeing what progress is made. This was visible in Lomma's view that progress towards a goal can be meaningful even if the target is not met, and also in Landskrona's long-term goals, which continued to guide attention despite not being achieved in the short term. Under uncertainty, measures are therefore more flexible than fixed targets because they support interpretation rather than reliance on pre-defined outcomes. PMS design under uncertainty therefore requires a distinction between measures used to understand progress, and targets used to assess achievement.

Institutional pressure also shapes PMS design. DiMaggio and Powell's (1983) forms of institutional isomorphism are useful, especially coercive pressures, since municipalities

operate under legal requirements and formal expectations of accountability. Although Swedish municipalities have considerable autonomy, the findings show that they do not design PMSs in total isolation. Respondents described how legal requirements, state grants, and national policy can affect what must be followed up or prioritized. This means that PMS design is shaped by the need to satisfy external requirements as well as the internal needs. In some cases, this may create structure, but it may also lead to rigidity if municipalities are forced to measure or report things that are not perceived as locally meaningful.

Legitimacy is also relevant for understanding PMS design. Tran and Nguyen (2020) argue that PMSs in public organizations are tied to accountability because they provide information about how public resources are used. This was visible in all municipalities and their emphasis on showing what citizens, politicians, and other stakeholders receive in return for allocated resources. PMSs are therefore, apart from supporting internal control, designed to make municipal activities understandable and defensible. The municipalities did not design their PMSs only to “look good”. Instead, legitimacy and usefulness are two important ideas. PMSs that help decision-makers understand performance also helps the municipality demonstrate responsibility and credibility to stakeholders.

Overall, the findings suggest that the PMSs in the studied municipalities are designed under uncertainty and ambiguity as “hybrid systems”. They retain diagnostic elements as municipalities must maintain control, accountability, and responsible resource use. At the same time, they incorporate measures and contextual judgment in order to remain useful when goals are of ambiguous nature and external conditions change. In answer to RQ2, PMS design under uncertainty is therefore about how objectives, measures, targets, evaluation and information flows are combined. It is not about choosing between measurement and interpretation, but about combining them in a way that makes municipal performance manageable and flexible despite uncertainty and ambiguity.

6.3 Using PMSs for control, accountability, learning, and adaptation

The empirical findings demonstrate that PMSs are used for multiple purposes in the three studied municipalities. However, the key analytical point is not only that PMSs have several purposes, but that the same PMSs can be used differently depending on how decision-makers engage with performance information under conditions of uncertainty and ambiguity.

Drawing on Simons' LOC framework, this section analyzes how PMSs are used to balance purposes such as control, accountability, learning, and adaptation. A central argument is that when external uncertainty increases, municipalities may utilize PMSs diagnostically to establish internal clarity; however, interactive use becomes more crucial when such internal ambiguity cannot be completely reduced.

All three municipalities demonstrated diagnostic use of PMSs. Financial follow-up, budget deviations, cost indicators, investment planning, deadlines, and reporting procedures were used to track how well municipal operations were progressing. This corresponds with Simons' (1995) definition of diagnostic control systems as systems used to track important performance variables and identify deviations from established standards. In the municipalities, this diagnostic use was especially visible in relation to financial control. Since municipalities are responsible for public resources, they need systems that create structure and discipline in relation to budgets, costs, and results. Under uncertainty, this diagnostic use becomes important because it helps municipalities create internal clarity in areas where external conditions, such as demographic change, inflation, state grants, and tax revenues, cannot be fully controlled.

Diagnostic use is also connected to accountability. Tran and Nguyen (2020) argue that PMSs in public organizations are associated with accountability since performance information enables stakeholders to assess how resources are allocated and how services are provided. This was visible where respondents emphasized showing what the municipality receives in return for the resources used.

Cost measures, budget deviations, financial performance, and comparison with other municipalities all contribute to making municipal operations more visible to politicians, managers, and citizens. In this sense, diagnostic use is not only internal control, but also a way of making municipal decisions and resource allocation more understandable and defensible. This is important in relation to RQ3, since accountability does not disappear under uncertainty, instead, it may increase the need for PMSs that can justify decisions and priorities when conditions change. It could even be argued that accountability requirements for municipalities should increase during periods of heightened uncertainty, as citizens may become more dependent on municipalities to act responsibly and provide stability.

However, the findings also show that diagnostic control is limited under conditions of uncertainty and ambiguity. Diagnostic control depends on pre-defined goals, measurable indicators, and standards against which deviations can be assessed (Simons, 1994). These conditions are challenged when municipal goals are broad, qualitative, and politically defined, but also external uncertainty changes the assumptions on which targets were originally based on. If demographic forecasts, tax revenues, government grants, inflation, or political priorities change, a target that initially seemed reasonable may become less relevant as a basis for evaluating performance. This was visible in objectives related to social development, preparedness, climate adaptation, and long-term municipal development. In line with Vakkuri and Meklin (2006), PMSs can reduce internal ambiguity by creating structure, but they cannot remove the need for interpretation.

This limitation helps explain the interactive use of PMSs in municipalities. Performance information was not only used to determine whether targets had been achieved, but also to encourage discussion, analysis, and learning. This is in accordance with Simons' (1994; 1995) view of interactive control systems, where formal information systems are used to encourage communication and direct attention towards strategic uncertainties. Follow-up meetings, qualitative evaluations, discussions about the reasons behind results, comparison with other municipalities, and cross-administrative cooperation were all examples of interactive use. The empirical material does not suggest a complete shift away from diagnostic use. Instead, it suggests that diagnostic use needs to be complemented by interactive use when uncertainty and ambiguity make target achievement insufficient for understanding performance.

A central finding is that municipalities appear to use PMSs partly to reduce internal ambiguity when external uncertainty increases. This was most visible in Malmö, where respondents described the importance of creating structure and a "one city" perspective for committees in a more uncertain environment. This suggests that when external uncertainty cannot be controlled, municipalities may try to increase internal clarity through PMSs. In Simons' terms, this reflects a diagnostic logic in creating structure, defining priorities, and making deviations visible. However, when internal ambiguity cannot be fully reduced through clearer goals, targets, or structures, PMS use needs to move more towards interactive control, where performance information becomes a basis for qualitative assessment, dialogue, and learning.

Interactive use was important when performance was difficult to measure precisely. In such situations, the value of PMSs came less from the information itself and more from the discussions it facilitated. When municipalities evaluate costs, service quality, preparedness, or improvement over time, data does not always provide a complete answer, but raises questions about why results differ, whether the municipality is moving in the right direction, and what actions may be needed. PMSs therefore become useful under uncertainty because they make ambiguity discussable.

The distinction between measures and targets further clarifies the difference between diagnostic and interactive PMS use. Targets specify expected outcomes (Dekker et al. 2012), which connects them to diagnostic control. However, under increasing external uncertainty, fixed targets can become less informative if surrounding conditions change. The problem is instead that target achievement alone may provide an incomplete or even misleading assessment of performance when external uncertainty has changed. Measures, however, can also support interactive use when they are used to follow trends, compare developments, and stimulate discussion. The municipalities' use of indicators for comparison and qualitative evaluation showed this. Measures enabled respondents to understand changes over time and create internal discussions about what results meant. Under uncertainty, measures may remain useful even when fixed targets become difficult to define, as they can support interpretation rather than only control.

The findings show aspects of boundary control, even though the primary analytical distinction in this study is between diagnostic and interactive use. Boundary systems define limits for acceptable action and help manage risk (Simons, 1995). In the municipalities, such boundaries appeared through legal requirements, budget limitations, policy frameworks, and formal responsibilities. This is important because interactive PMS use does not imply full flexibility. Swedish municipalities have a high degree of autonomy (Ladner et al., 2019, cited in Lidström & Hertting, 2021), allowing them to discuss, interpret and modify their work as long as they stay within the boundaries of politics, laws, and economy. Boundary conditions therefore shape how far learning and adaptation can go, while also helping preserve accountability and responsible resource use.

A key finding is that the same PMSs could be used both diagnostically and interactively. This supports Simons' argument that the use of a control system is just as important as its technical design (Simons, 1994; 1995). For example, a budget can be used diagnostically to track deviations, but also interactively as a starting point for discussions about priorities or uncertainty. Similarly, an indicator can be used to determine whether a goal has been achieved, but also to discuss why progress has or has not occurred. This combined use was visible in all three municipalities, even if the balance differed. Lomma and Landskrona appeared to emphasize financial control, continuity and accountability more strongly, while Malmö places slightly more emphasis on learning, collaboration, and qualitative interpretation. This does not mean that municipalities use fundamentally different PMSs, but that their use of PMSs reflects different local conditions and different ways of managing uncertainty.

The use of both diagnostic and interactive control shows how municipalities attempt to balance stability and flexibility. Diagnostic use supports stability through financial control, accountability, and identifying deviations, while Interactive use supports flexibility through communication, learning, and adaptation. This balance is central under uncertainty.

Municipalities cannot rely only on pre-defined goals, but they also cannot abandon diagnostic control since they remain accountable for public resources and political priorities. PMSs therefore become mechanisms for managing the tension between accountability and adaptation.

Overall, the findings indicate that PMSs in the three municipalities are best understood as multi-functional governance tools. In relation to RQ3, uncertainty affects PMS use by increasing the need for both internal clarity and interpretive dialogue. Simons' LOC framework is useful because it clarifies that PMS use is not only determined by the existence of indicators and budgets, but by how performance information is used in practice.

6.4 Institutional pressure, legitimacy, and external comparison

The empirical findings show that institutional pressure is an important part of the municipal context, although it was rarely described by respondents as direct pressure to imitate others or to measure performance only for symbolic reasons. Instead, institutional theory appeared

more subtly through comparisons with other municipalities, national systems, professional networks, legal requirements, state grants, and expectations of transparency and accountability. This aligns with institutional theory, where organizational practices are shaped by pressures for legitimacy and conformity within the organizational environment (DiMaggio & Powell, 1983). In the municipal context, PMSs therefore also need to be understood as systems through which municipalities demonstrate responsibility, comparability, and legitimacy.

DiMaggio and Powell's (1983) distinction between coercive, mimetic, and normative pressures helps explain the different forms of influence identified in the empirical material. Coercive pressures were visible in relation to legal requirements, state grants, national steering, and formal expectations placed on municipalities. These pressures were especially evident when respondents discussed how national requirements or funding conditions affect municipal planning and follow-up. For example, state grants and legal requirements were described as factors that influence municipal activities, while preparedness work was partly connected to support and funding from both national and regional levels. Such pressures do not necessarily determine exactly how municipalities design or use PMSs, but they shape the conditions under which municipal performance must be planned and justified.

Mimetic pressures were most clearly visible in the municipalities' use of comparison. Under uncertainty, DiMaggio and Powell (1983) argue that organizations may imitate or model themselves on other organizations that are perceived as successful or legitimate. The empirical findings show that all three municipalities compare themselves with others, although respondents often described this as learning rather than imitation, as one could expect that respondents would answer. Comparison can be analytically understood to have a dual function. On one hand, it works as a learning mechanism in helping municipalities interpret results and understand how others organize similar activities. On the other hand, comparison also has a legitimacy function since external reference points make it easier to show politicians, citizens, and other stakeholders that local performance is reasonable in relation to comparable municipalities. In this sense, benchmarking can also be about making municipal performance defensible. DiMaggio and Powell (1983) state that uncertainty can encourage imitation, and this can potentially be visible in the sense that municipalities described increased comparison and contact with other municipalities when prompted with questions about increased uncertainty.

Normative pressures were visible through professional networks and shared practices within the municipal sector. Respondents described participation in SKR networks, contact with other municipalities, and professional exchanges as ways of learning and developing practices. These forms of influence are not necessarily experienced as pressure, but they still create shared expectations about how municipalities should attend to their duties. Over time, such professional norms may contribute to municipalities adopting similar ways of discussing and measuring performance, which is in line with the argument that DiMaggio and Powell (1983) makes: that organizations tend to become more similar over time through the process of institutional isomorphism.

The findings also connect institutional pressure to legitimacy. Tran and Nguyen (2020) argue that PMSs in public organizations are closely tied to public accountability, since structured performance information helps demonstrate how public resources are used. This was visible in the municipalities, where respondents emphasized transparency and the need to show whether resources produce value. However, the interviews also complicate a simple legitimacy argument. Most respondents rejected the idea that measures are adopted purely because they “look good”. Instead, they framed comparison and measurement as practical tools for learning, being accountable, and improving. Modell’s (2001) findings offer a useful interpretation here. Modell (2001) shows that performance measurement practices may be driven by both efficiency-enhancing and legitimacy-seeking rationales, and that these rationales can be closely intertwined rather than separate. From this perspective, comparison, indicators, and reporting can simultaneously support internal learning and decision-making while also making municipal performance more defensible and legitimate to citizens, politicians, and other stakeholders. This reflects Granberg’s (2008) argument that municipalities face a dual challenge in balancing efficiency and democratic legitimacy. Municipalities are expected to use resources effectively while also showing that they remain accountable and responsive to citizens, politicians, and external stakeholders.

Malmö’s explicit use of resilience in relation to the UN initiative provides a further example of this interaction between practical work and legitimacy. Practically, it connects climate adaptation, preparedness and institutional trust. Institutionally, the use of an internationally recognized concept may also strengthen legitimacy by positioning Malmö within a broader field of modern urban governance. It does not necessarily mean that the municipality’s

resilience work is merely symbolic. Rather, in line with Modell (2001), practical and legitimacy-seeking rationales may be intertwined as resilience can guide internal coordination while also signalling recognized and legitimate standards.

Institutional theory also complements the analysis of PMS design and use. While uncertainty and ambiguity help explain why municipalities need systems that provide structure and interpretation, institutional pressure helps explain why these systems often emphasize comparability and visible accountability. Munir and Baird (2016) argue that PMSs can be shaped by coercive, mimetic, and normative pressures, and the findings of this study support that view in a municipal setting. However, the empirical material also shows that institutional pressure does not simply lead municipalities to copy each other passively. Here, Modell's (2001) discussion of proactive mimicking is useful. The municipalities' comparisons with others were generally described as selective and purposeful: they looked for similar municipalities, used Kolada to interpret results, participated in networks and tested approaches that had worked elsewhere. This suggests that mimetic pressure can operate through active learning and local adaptation rather than through unreflective imitation.

The above is especially relevant for RQ1 as it shows that institutional pressure is not always experienced as direct pressure, but appears through expectations of comparability, transparency, and accountability. At the same time, it can also explain RQ2 and RQ3, since these expectations partly shape both how PMSs are designed and for what purposes they are used. PMSs are shaped by both internal governance needs and external expectations about what responsible municipal management should look like.

6.5 Contributions, limitations, and future research

6.5.1 Empirical and theoretical contributions

The study contributes empirically by providing insight into how PMSs are designed and used in three Swedish municipalities under conditions of uncertainty and ambiguity. Since the municipalities differ in size, political context, local conditions, and organizational priorities, the findings show both similarities and differences in how PMSs support control, accountability, learning and adaptation.

The study also offers a theoretical contribution by developing the understanding of uncertainty in relation to municipal PMSs. The findings support the idea that uncertainty should not only be understood as external unpredictability, but also as internal ambiguity related to goals and priorities. This contributes to the idea of total uncertainty, where external uncertainty and internal ambiguity interact. The cases suggest that when external uncertainty becomes more tangible, municipalities may seek to reduce internal ambiguity.

The findings also contribute to the understanding of institutional pressure in municipal PMSs. They do not suggest that municipalities simply imitate others or adopt practices for symbolic reasons. Instead, institutional pressure appears more subtly, which suggests that it may shape what municipalities perceive as responsible and appropriate governance without necessarily operating as direct mimetic pressure.

A further theoretical contribution concerns Simons' LOC framework in a municipal setting. The findings show that PMSs are used diagnostically and interactively, which suggests that the distinction between both uses are useful for understanding how municipalities balance stability and flexibility under uncertainty.

6.5.2 Limitations

The study also has limitations. First, it includes only three municipalities, all located in Skåne, which means that the findings cannot be statistically generalized to all Swedish municipalities. Instead, the study should be understood as offering insights into how PMSs may function in municipal contexts under uncertainty and ambiguity. Second, the quantity of respondents is another limitation. While respondents had relevant roles and experiences, they do not capture all possible perspectives. Politicians, department managers, and employees closer to service delivery may experience uncertainty, ambiguity, and PMS use differently.

6.5.3 Future research

Future research could include more municipalities, either within Skåne or in other Swedish regions, to examine whether the patterns identified appear in other municipal contexts. It could also include additional respondent groups, as mentioned above. Future studies could also examine PMSs under uncertainty over a longer period of time. A longitudinal study could provide deeper insight into how PMS design and use change as external uncertainty

develops and as municipalities try to manage internal ambiguity. Finally, future research could also study PMS practices in more detail, such as targets, qualitative assessments, comparisons, or specific indicators.

7. Conclusion

This chapter summarizes findings in relation to research questions and purpose of the study.

This study set out to examine how Swedish municipalities perceive uncertainty, ambiguity, and institutional pressure, and how these conditions are reflected in the design and use of performance measurement systems.

Regarding **RQ1**, the findings show that uncertainty in municipalities is experienced as a combination of external unpredictability, internal ambiguity, and institutional pressure. This means that uncertainty is both something that municipalities respond to and something they interpret through planning, priorities, comparison, and accountability demands. Institutional pressure was not perceived as direct pressure, but as part of the broader environment shaping what municipalities consider responsible and appropriate governance.

Regarding **RQ2**, the study shows that PMSs are designed as hybrid systems under uncertainty and ambiguity. Municipalities still rely on indicators, targets, and structured follow-up to create control and accountability. However, they also use qualitative assessments and contextual interpretations when external conditions change, and there is also a willingness to reduce internal ambiguity when external uncertainty increases. PMS design is not only about measurement, but also about balancing structure with flexibility.

Regarding **RQ3**, the findings show that PMSs are used for several purposes at the same time. They support diagnostic control by monitoring performance and ensuring accountability. But they are also used interactively through dialogue, learning, comparison and discussions about priorities and future development. PMS are therefore tools for both control, interpretation and adaptation.

Overall, the study concludes that performance measurement systems in Swedish municipalities should be understood as context-dependent governance tools. Under conditions of uncertainty and ambiguity, PMSs must provide structure and accountability while also allowing room for judgment, learning and adaptation. This balance is central in how municipalities manage complex and changing conditions.

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9. Appendix

Appendix 1 - Interview questions

Background

1. Could you briefly describe your role and responsibilities within the municipality?

Uncertainty

2. What are the main uncertainties affecting the municipality, and how would you describe them?
3. What does “uncertainty” mean in your role, and how does it influence planning and decision-making?
4. Have these uncertainties changed in recent years? If yes, increased or decreased?
5. When/if the external uncertainty increases, is there a (sort of) desire to try and reduce internal uncertainty, meaning, increasing clarity in goals, etc.?

Goals/targets

6. How would you describe the municipality’s main goals and priorities?
7. Has the overall goals or priorities changed due to increased external uncertainty?
8. When uncertainty is high/tangible, does it become more difficult to work with committed goals? And does it perhaps become more important to focus on measuring performance, rather than achieving goals?

Resilience

9. How does the municipality prepare for uncertain or unexpected situations?
10. Do you work with concepts such as resilience? If so, how is it understood, managed, and applied in practice?

Design of performance measures

11. What are the most important things the municipality tries to measure and follow-up?
12. How do you decide what to measure and how to set goals?

Control vs. learning

13. How are performance measures used in internal discussions within the organization?
14. Are performance measures used primarily for control and accountability, learning and adaptation, or both?

Extern influence/institutional factors

15. To what extent is the work with performance measurement influenced by other municipalities or by external demands and expectations?
16. Do you experience that things are sometimes measured or implemented for purely legitimacy reasons? Meaning that you do things simply because others do it, or you do it because it looks good rather than having any real effect?

Appendix 2 - AI statement

AI-based tools were used as support during the research and writing process. ChatGPT+ was used in the early stages to generate inspiration for possible research topics. During the writing process, ChatGPT+ was used to a limited extent to support language refinement and grammar in text already written by the authors. All suggestions were assessed by the authors before being incorporated, and the content, analysis and final decisions remained the authors' responsibility. AI-based transcription tools were initially used during some of the interviews. However, since the interviews were conducted in Swedish and the transcription quality was limited, the material was subsequently reviewed manually instead before being used in the study.