Will Teamwork Make the Dream Work? Investigating Transversal Collaboration in Public Service Delivery

Anders Barslund Grøn

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PhD Dissertation

Politica

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Acknowledgments

It is rare in this day and age that we are afforded an opportunity to sit down and reflect on the state of our union. How did we end up where we are? What led us to choose what we did? What comes next? What needs maintenance? And what is good to go for yet another round? The optimist in me would like to think that pursuing this PhD follows a certain timeline, a ROI-optimized sequence—spiritually, and a stepwise function that leads to greener pastures and bluer oceans; that my experiences and careful consideration have brought me here, that I am still standing—level-headed and in-tune, and that I now will be able to navigate life's endeavors with a toolbox and treasure chest filled with new perspectives and wonderful memories. Maybe it is somewhat naive. All I know for sure is that it has been a pleasure, and regardless of the precise answers to the imprecise questions, I am deeply grateful and humbled to have the opportunity to sit down and reflect on the past three years.

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Also, a heartfelt thank you to the public organizations, leaders, and employees who have contributed to my dissertation, whether in the form of participating in workshops, talks, or by helping me collect data. You are, by all means, the unsung heroes in this story, and I have been left in awe every single time we interact. Across the board, it is crystal-clear that you care about the world we share, that you take pride, and that you are not afraid to "get your hands dirty" while trying to give more than you receive. Your contribution to my research has been invaluable, and I truly appreciate that you have trusted me with your time and experiences. This dissertation represents my way of giving back, and I hope that you find it inspiring.

I would like to express my gratitude to the crew at Hamburg University, where I had the privilege of spending three months in the fall of 2022. Professionally and personally, I had a blast with such fundamental ramifications that I am still trying to comprehend them. You quickly welcomed me, and my stay with you, while too short in time, provided a lifetime's worth of reminders that living can be so much more fun with the right amount of hot pot, early morning runs, late night Aperols, and discussions about values, causes, and consequences. To this day, you continue to show me that standing up to life's adversities only makes us stronger. You affected me greatly, and I hope to repay you over and over again.

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follow. Although writing this dissertation has been challenging and overwhelming at times, you have always supported me, kept me warm and laughing, and reminded me that no matter the timeline, sequence, pastures, or oceans, we should never forget those who have seen our parents' back porch, our roots, and where we come from. You have taught me that life is not—and never will be—about figuring it out, but rather a matter of staying patient, showing up, making an effort, and sometimes taking a gamble on the odd chance of a perfect August breeze. I am eternally grateful for all of you.

Anders Barslund Grøn
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Preface

This report provides a summary of my PhD dissertation titled "Will Teamwork Make the Dream Work? Investigating Transversal Collaboration in Public Service Delivery," written at the Department of Political Science, Aarhus University. The dissertation consists of this summary report and five individual research articles. The five articles, all of which are under review in international peer-reviewed journals, are displayed in the table below.

The aim of this summary report is to provide an overall research question and theoretical framework that ties the five articles together. In addition, the summary report gives an overview of the main methodological approaches, presents the primary results from the analyses, and discusses the contributions of the articles with an aim to provide avenues for future research and relevant implications for practitioners.

Table 1. Overview of articles in the dissertation

Article
A. Understanding Transversal Leadership in Public Organizations: Conceptualization and Development of a Measurement Scale. Under review at *Public Management Review*.
B. Master of Boundaries: Conceptualization and Development of a Measurement Scale for Collaborative Self-efficacy. Under review at *Administration & Society*.
C. Can Leadership improve Interorganizational Collaboration? Field-experimental Evidence from a Team-based Leadership Training Intervention. Under review at *American Review of Public Administration*.
D. Bridge over Troubled Waters? Experimental Evidence of the Influence of Leadership on Employees' Collaborative Engagement. Under review at *Public Administration Review*.
E. Deviating from the Course: How Presentational Strategies and Leadership Investments affect Leader Credibility. Under review at *Journal of Public Administration Research and Theory*.

Chapter 1.
Introduction

A jack of all trades is a master of none
but oftentimes better than a master of one.
William Shakespeare

Division of labor, delimited accountability, and professional specialization are some of the main characteristics in the structure of public sectors around the world (Molenveld et al., 2020). Most public sectors are still by and large organized in hierarchical structures allowing for specialization and accountability in relation to specific objectives and core tasks (Bouckaert et al., 2010; George et al., 2019), which often means that public services are delivered from functionally separated organizations. Within these organizations, public leaders and employees attend to their specific duties, navigate in structural conditions such as geographical delineations, legal frameworks, and financial terms (Hammond, 1990; Simon, 1946) and develop relations, norms, and professional standards (Freidson, 2001; Martin et al., 2020).

These dynamics result in a silo-based public sector, which has grown in the name of precision, efficiency, and economy of scale (Goodsell, 2006). A "silo" is a hierarchical organization that seeks to maximize vertical coordination vis-à-vis horizontal coordination (Scott, 2020). As citizens, we interact with these silos from the beginning of our lives. We go to school to get an education. We go to our general practitioner and to the hospital where nurses and doctors treat our illnesses. We go to the job center when we need help finding a job. And we go to the police if we have a crime to report. The specialization within each public organization, ideally, renders possible that citizens with specific needs receive the corresponding specific service. Further, scholars emphasize the resilience of silos, their importance within the formal organizational structure, and the need for vertical coordination in decision-making processes (Peters, 2015; Rykkja & Lægreid, 2014).

However, silos are also challenged (Scott & Gong, 2021) as they suffer from departmentalism (Gulick, 1937; Hammond, 1990), tunnel vision (Rosenbloom et al., 2017), and a tendency to become single-purpose organizations (Bezes et al., 2013). Their inability to overcome certain types of problems may lead to suboptimal outcomes due to delays in decision-making, duplication of resources, and failure to resolve crosscutting issues. Collaborative efforts may be impeded by individual interests, power struggles, and incentive structures,

which can create uncertainty, distrust, and collective action problems (Christensen & Lægreid, 2008; Scharpf, 1994; Wegrich & Štimac, 2014; Wilson, 1989). When collaborating, organizations may fear a loss of power, autonomy, and control over budget (Peters, 2018; Pollitt, 2003; Tosun & Lang, 2017), and because the results of collaborative efforts are not immediately visible in organizational performance, minding one's own shop can become first priority (Perri 6 et al., 1999). In sum, service-providing organizations tend to focus on initiatives for which they are primarily responsible rather than on horizontal initiatives for which they share responsibility with other organizations (Carrigan, 2018; Hansen et al., 2013; Peters, 2018).

Collaboration across organizational jurisdictions is nonetheless essential in public value creation for citizens and society at large (Peters, 2015, 2018). This is increasingly the case as political issues and public service delivery become more complex, intertwined, and dependent on inputs and resources from different organizations (Candel & Biesbroek, 2016; Lægreid & Rykkja, 2015). With growing interdependency, there is need for collaborative efforts in public service delivery where actors contribute to shared tasks (Christensen & Lægreid, 2007; Molenveld et al., 2020). For example, if a comorbid hospital patient suffers from both somatic and psychosocial disorders, their physician and the psychiatrist need to prioritize alignment in their treatments so they do not counteract each other. Similarly, if a juvenile has been caught up in crime, social services, police, and school administrations need to align their approaches so that the juvenile receives the appropriate support. Or, if a local council decides to increase the focus on close-to-home climate and sustainability initiatives, municipal administrations have to align their implementation in order to secure concordance and fairness for all citizens. A common denominator in these examples is the need for individuals—public leaders and employees—to engage outside their own organizational jurisdiction in order to secure cohesion in the creation of public value.

Bouckaert et al. (2010; see also Peters, 1998) distinguish between hierarchies, markets, and networks as fundamental coordination mechanisms in social life. Each of these is based on different patterns of interaction. Hierarchies focus on the exercise of power and authority; markets build on exchanges, price mechanisms, and competition; and networks display shared values, cooperation, and solidarity. The drive towards greater coordination has aimed at reducing the impact of hierarchies while searching for new approaches to solve complex issues (Lægreid et al., 2014; O'Toole & Meier, 2004), which involves respecting contextual factors, developing a culture that stresses a shared public ethos, and building trusting relationships (Christensen & Lægreid, 2007; Lægreid et al., 2015). Consequently, public services have been

delivered by joint programs, markets, and networks much more than in the past.

Regardless, hierarchies remain important for public service delivery, and in a silo-dominated public sector, it is evident that the authority of each silo as well as the inclinations, perceptions, and behaviors of the individuals within them can be important for collaborative public service delivery (Bouckaert et al., 2010). Or more poetically phrased: Public leaders and employees tend to become masters of their hierarchical trades. A relevant question, though, is if (and whether) the public sector can (and should) be understood as a "collective jack of all trades;" a collective where the individual still reigns—but a collective, nonetheless, where everyone brings their specialized best and prioritizes alignment. And if so, the question becomes how to understand and study such dynamics. This theme has yet to be studied in depth, and therefore, I address it in this dissertation under the term transversal collaboration. This entails an investigation of the leadership behavior, engagement, and perceptions that public leaders and employees exhibit and hold in order to build ties to and align with other organizations. Specifically, I focus on how public leaders can lead internally in order to build an organizational readiness for interorganizational collaboration, and in continuation, how public employees work to align and foster cohesion interorganizationally.

These factors are expected to compose the backbone of most shared tasks between public organizations in situations where they are not necessarily collaborating actively in the actual service delivery. If successful, public leaders and employees are expected to experience, for example, cohesiveness, timeliness, and less friction when contributing to shared tasks. This remains challenging, however. In a review, Candel (2017) shows that collaborative public service efforts often fail in terms of performance. At best, implementation is variable across sectors, and there might be symbolic political gains from appearing "holistic" and "responsive" (Candel, 2017; Candel & Biesbroek, 2016; Tosun & Lang, 2017). Nonetheless, fostering productive collaboration seems like the only feasible way forward if the public sector is to solve the most complex and interdependent challenges such as climate management (Ingold & Leifeld, 2016; Karimo et al., 2022), healthcare provision (Provan & Lemaire, 2012; Schot et al., 2020), and social service delivery (Gittell, 2002; White et al., 2016).

Existing research on interorganizational collaboration has mostly been preoccupied with the network mechanism. It has developed comprehensive frameworks for understanding collaboration in which public leaders are understood as drivers of collaborative efforts (Ansell & Gash, 2008; Emerson et al., 2012). Scholars have further focused on particular leadership understandings such as collective and collaborative leadership (Ansell & Gash, 2012;

Ospina, 2017), which shed light on how public leaders can navigate in relation to stakeholders and collaborators. Understanding the collaborative proclivities and behaviors of public employees, on the other hand, has received less attention. The literatures on boundary spanning behavior (van Meerkerk & Edelenbos, 2018) and collaborative competencies (Getha-Taylor, 2008) highlight, albeit mostly descriptively, that public employees should build a certain repertoire of skills to help them interact interorganizationally, and this constitutes an important assumption in this dissertation: Transversal collaboration across organizational jurisdictions necessitates certain behaviors, motivations, and abilities from both public leaders and employees. A central challenge is thus whether, when, and how these leaders and employees are able and willing to invest in transversal collaborative efforts.

In sum, public leaders and employees are important, yet understudied, in relation to transversal collaboration in public service delivery (O'Leary & Vij, 2012). Public organizations are hierarchical entities operating within a demarcated jurisdiction but nonetheless often have intersections where they become interdependent. We do not fully understand this phenomenon, specifically how public leaders and employees can operate within their own organization to secure interorganizational alignment and cohesion. This refers to contexts where public organizations are interdependent in their service delivery but do not integrate their services fully or co-work actively on a shared task. In this dissertation, I address this gap by studying how public leaders can attempt to influence their own employees and help them to contribute to collaborative public service efforts. Furthermore, I assess the employees' psychological dispositions and collaborative engagement to understand whether and when they engage.

1.1 Research Questions

The starting point for this dissertation is the presence of and need for transversal collaboration in public service delivery. In short, transversal collaboration encapsulates a relatively structured and static type of collaboration (compared to networked strategies), and it is mostly focused on securing alignment and cohesion in collaborative inputs and processes from functionally separated public organizations (compared to actively collaborating in the delivery of the service). In order to secure alignment in inputs and processes, public organizations, leaders, and employees should focus on setting a shared direction, securing relational and structural alignment, and ensuring commitment to the shared task, which includes aligning their activities, work processes, resources, responsibilities, rules, structures, and norms. For an elaborate discussion of transversal collaboration, see section 2.1.

The underlying questions framing this dissertation include how public leaders can support their employees in contributing to such transversal collaboration, how social and psychological factors function as contingencies to the effects of leadership, and how they combined translate into collaborative engagement among employees. To address these questions, and help shed light on collaborative value creation in the delivery of public services, the following research questions guide the dissertation:

What is transversal leadership? To what extent does transversal leadership influence collaborative engagement and interorganizational coordination? How does self-efficacy act as a mechanism to the influence of transversal leadership?

Answering the research questions is valuable for both empirical and theoretical reasons. It is important for public value creation, for individual citizens, and for society that public organizations are capable of and willing to promote and build a foundation for bridging organizational jurisdictions. Citizens encounter, for example, social services, hospitals, schools, employment services, and police officers—sometimes concurrently when they have multiple issues to manage—and these encounters are often important for citizens' overall well-being. Investigating transversal collaboration in public service delivery touches upon themes of responsibility, fairness, and accountability. It is, ultimately, a question of citizens trusting that public organizations are capable of providing the necessary help.

For public leaders and employees, answering the research questions is also important as it provides much-needed theoretical and empirical insights into the possibilities and pitfalls related to transversal collaboration. For both leaders and employees, it can provide a basis for addressing and contributing to tasks that are not solely organization-specific and to build a sustainable interorganizational infrastructure where tasks are solved with minimal redundancy. In order to address how transversal collaboration can be achieved, this dissertation provides novel and relevant knowledge about leadership, social and psychological mechanisms, and employees' collaborative engagement. Figure 1.1 depicts the content of the dissertation, including articles A-E and how they integrate, which is elaborated in Table 1.1.

Figure 1.1. Graphical overview of dissertation
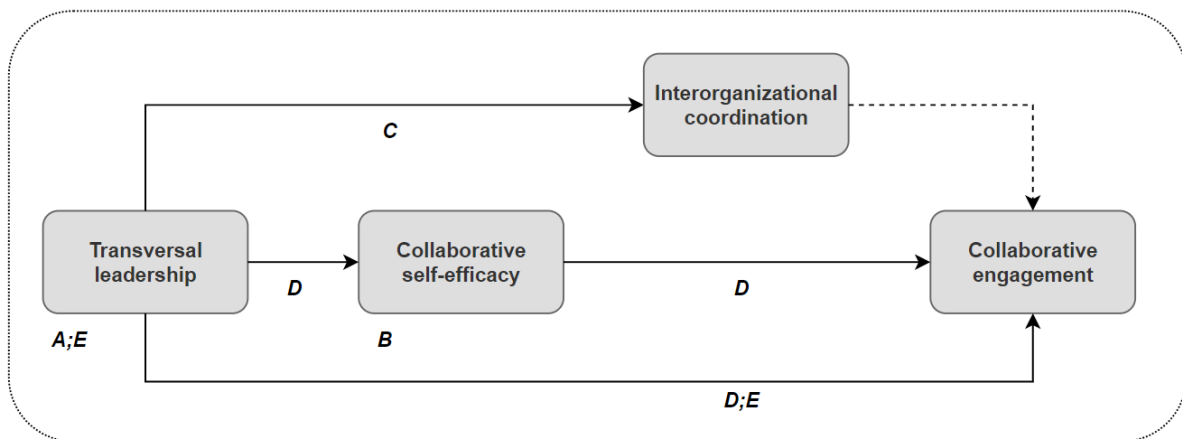
Starting from the left-hand side of the figure, transversal leadership constitutes the main leadership concept of the dissertation. Transversal leadership encapsulates leadership behavior seeking to direct, align, and commit one's own employees to shared tasks with actors outside their own managerial jurisdiction. The main outcome of interest is the employees' collaborative engagement capturing their orientation towards and behavioral contributions to transversal collaboration. The secondary outcome is assessments of interorganizational coordination. As a potential mechanism, I focus on collaborative self-efficacy.

1.2 Structure of the Dissertation and Contributions

The dissertation consists of this summary report and five research articles. The summary report summarizes the main ideas, approaches, and findings from the articles, which collectively speak to the research questions. The five articles are:

A. Grøn, Anders B. & Jacobsen, Christian B. (under review at *Public Management Review*). Understanding Transversal Leadership in Public Organizations: Conceptualization and Development of a Measurement Scale.

B. Grøn, Anders B. (under review at *Administration & Society*). Master of Boundaries: Conceptualization and Development of a Measurement Scale for Collaborative Self-efficacy.

C. Grøn, Anders B., Hvilsted, Line, Ingerslev, Karen, Jacobsen, Christian B., Bech, Mickael & Holm-Petersen, Christina (under review at *American Review of Public Administration*). Can Leadership Improve Interorganizational Collaboration? Field-experimental Evidence from a Team-based Leadership Training Intervention.

D. Grøn, Anders B. (under review at *Public Administration Review*). Bridge over Troubled Waters? Experimental Evidence of the Influence of Leadership on Employees' Collaborative Engagement.

E. van Luttervelt, Mads P., Grøn, Anders B. & Benthem, Mikkel S. (under review at *Journal of Public Administration Research and Theory*). Deviating from the Course: How Presentational Strategies and Leadership Investments affect Leader Credibility.

Article A ("Leadership" in short) is a conceptualization and measurement study. The article presents a theoretical framework for understanding transversal leadership and develops a measurement scale to capture transversal leadership behavior. The scale development is achieved using data from approximately 3000 employees and 500 frontline managers in a Danish healthcare context. The factor structure of a nine-item measurement scale is evaluated using explorative and confirmatory factor analyses, and the analyses show satisfactory results in terms of criterion-related, convergent, and discriminant validity.

   Article B ("Self-efficacy" in short) is also a conceptualization and measurement study. The article presents a theoretical framework for understanding collaborative self-efficacy and develops a measurement scale to capture how public employees assess their own capability in terms of taking initiative, building relations, navigating structures, and creating public value when collaborating interorganizationally. The article builds on survey data from approximately 250 junior doctors in a Danish healthcare context. By employing explorative and confirmatory factor analyses as well as validity and reliability tests, I show support for a 12-item measurement scale.

   Article C ("Training" in short) is a field experimental study of whether transversal leadership training influences assessments of interorganizational coordination (relational coordination and structural coordination mechanisms). The four-day training program focused on various aspects of transversal leadership and involved leaders from organizations in the Danish healthcare system who engage in leadership training collectively. Based on survey data from the participating leaders, their frontline managers, and their frontline employees, it is shown that training can improve assessments of interorganizational coordination among the participating leaders and frontline managers but not among employees. One implication of the findings is that it is indeed possible to train transversal leadership behavior and expect positive influences as well as (some degree of) organizational diffusion.

   Article D ("Behavior" in short) is a survey experimental study of the effects of transversal leadership on employees' collaborative engagement. The study builds on video vignettes to induce leadership behavior and a behavioral

centipede game where respondents express their engagement through reading, thinking about, and writing preparatory materials for an interorganizational working group. Utilizing data from approximately 500 occupational therapists, the article finds that clear transversal leadership behavior—including supporting a clear and shared direction, underlining the tools at hand, and promoting commitment—significantly strengthens employees' collaborative engagement. One implication of the findings is that transversal leadership is important for employees' contributions to collaborations.

Article E ("Commitment" in short) is a survey experimental study of the effects of a leader's communication and commitment on employees' assessments of leader credibility and their collaborative engagement. This article also builds on the data from approximately 500 occupational therapists and utilizes video vignettes. The study investigates the effects of different presentational strategies on leader credibility and collaborative engagement and show that it is harmful for credibility and engagement when a leader deviates from their stated intentions—especially when the leader has shown high initial commitment to a leadership initiative initially, indicated by clear transversal leadership, before terminating it. The findings underline the importance of sticking to your words when managing collaborations.

Table 1.1. Overview of articles: Themes, focus, status, and data

Theme	Where?	Focus	Status	Data
What is transversal leadership and how can we measure it?	**Article A ("Leadership"):** Understanding Transversal Leadership in Public Organizations: Conceptualization and Development of a Measurement Scale	Conceptualization and scale development for transversal leadership	Under review at *Public Management Review*	3000 employees and 500 middle managers in healthcare
	Article E ("Commitment"): Deviating from the Course: How Presentational Strategies and Leadership Investments affect Leader Credibility	Survey experimental evidence about the importance of leader commitment for followership	Under review at *Journal of Public Administration Research and Theory*	500 occupational therapists employed in municipalities
How does collaborative self-efficacy fit?	**Article B ("Self-efficacy"):** Master of Boundaries: Conceptualization and Development of a Measurement Scale for Collaborative Self-efficacy	Conceptualization and scale development for collaborative self-efficacy	Under review at *Administration & Society*	250 junior doctors
What are the effects of transversal leadership?	**Article C ("Training"):** Can Leadership improve Interorganizational Collaboration? Field-experimental Evidence from a Team-based Leadership Training Intervention	Field experimental evidence into the effects of leadership on collaborative engagement	Under review at *American Review of Public Administration*	3000 employees and 500 middle managers in healthcare
	Article D ("Behavior"): Bridge over Troubled Waters? Experimental Evidence of the Influence of Leadership on Employees' Collaborative Engagement	Survey experimental evidence into the effects of leadership on collaborative engagement	Under review at *Public Administration Review*	500 occupational therapists employed in municipalities

The summary report has four chapters besides the introduction. Chapter 2 presents the combined theoretical framework and main concepts in the articles. Focus is on transversal collaboration, transversal leadership, collaborative self-efficacy, collaborative engagement, and interorganizational coordination and how these concepts are argued to influence each other as indicated by the relationships in Figure 1.1. Chapter 3 presents the research settings, data sources, and designs utilized in the articles. The dissertation builds on quantitative studies and is situated in a healthcare context. Chapter 4 summarizes the main findings from the dissertation including the establishment of two measurement scales, the effect of transversal leadership on collaborative engagement and interorganizational coordination, and the influence of collaborative self-efficacy as a mechanism. Chapter 5 discusses the findings, presents avenues for future research, and provides suggestions for practitioners.

By addressing the research questions, this dissertation makes three overall contributions to public management and administration research. Theoretically, I develop and validate two novel concepts (transversal leadership and collaborative self-efficacy), which are available to the research community. These concepts make it possible to investigate and build cumulative knowledge on how public organizations can work internally to secure alignment and cohesion towards shared tasks, which constitutes a hitherto overlooked aspect of interorganizational collaboration. Further, I theorize on how transversal leadership and collaborative self-efficacy can be developed, expressed, and trained in order to influence employees' engagement. The second contribution consists of the empirical and causal insights into how transversal leadership influences collaborative engagement, collaborative self-efficacy, and interorganizational coordination. These insights support that transversal leadership can be an important lever to strengthen collaboration between public organizations, which constitutes a starting point for further research on this important topic. The final contribution is methodological as the articles apply innovative research designs and operationalizations. I develop and validate novel measurement scales for transversal leadership and collaborative self-efficacy, show that leadership can be trained and improved in a team-based leadership training program, utilize video vignettes to experimentally induce leadership behavior, and employ a behavioral centipede game to measure actual behavioral contributions from public employees.

Combined, these contributions also provide valuable insights for practitioners in public organizations. For public leaders, it is evident that transversal leadership can be trained and developed and that it has substantial effects on the employees' engagement, which supports the notion that leaders can work actively on and consider how they exert leadership in relation to transversal collaboration. For public employees, the dissertation provides a basis

for understanding and developing their contributions to transversal collaboration as well as specific insights into how leadership, self-efficacy, and inter-organizational coordination are important. By implication, public leaders and employees can engage in discussions within their organization about how to structure, implement, and improve shared work with collaborators. In the following, I present the theoretical framework for the dissertation.

Chapter 2.
Theoretical Framework

The first part of the theoretical framework is allocated to conceptualizing transversal collaboration in relation to public service delivery. The second part defines the main concepts of the dissertation. In the third part, I present the main theoretical arguments for the relationships in Figure 2.1. Here, I focus on how transversal leadership may influence employees' collaborative engagement and how self-efficacy can function as a mechanism linking the influence of transversal leadership. Finally, I focus on the organizational level, specifically assessments of interorganizational relational and structural coordination.

Figure 2.1. Theoretical model
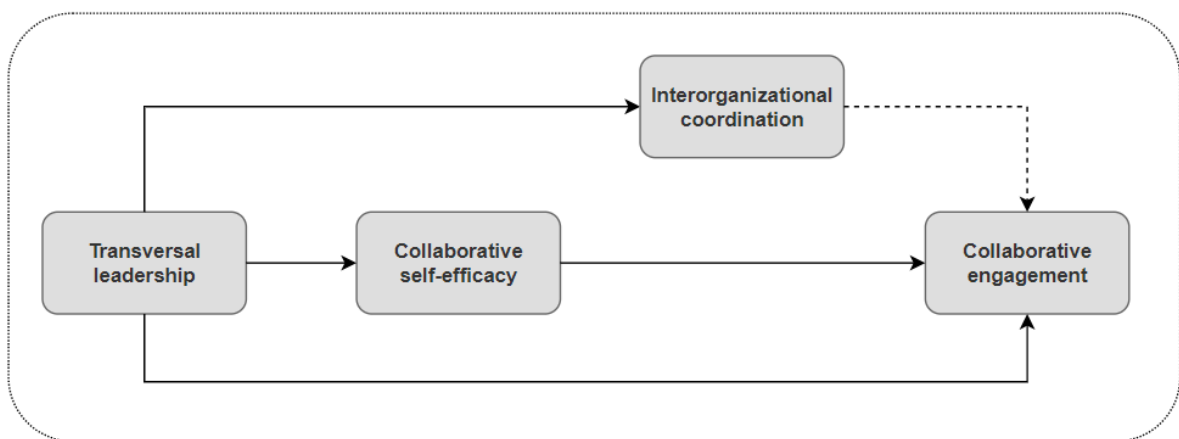
2.1 Conceptualizing Transversal Collaboration in Public Service Delivery

Public service delivery encapsulates processes where states, cities, and municipalities offer any type of service within their jurisdictions to address specific needs pertaining to the citizens and members of a community (McGregor, 1982). These services include things like healthcare, education, garbage collection, and other amenities, usually delivered by organizations that are accountable for their own organization-specific objectives (Bouckaert et al., 2010; Christensen & Lægreid, 2008; George et al., 2019).

However, as clarified in the introduction, it is sometimes necessary for public organizations to collaborate when, for example, employees are dependent on resources or inputs from employees in other public organizations to

solve a shared task. In an investigation of collaborative public service delivery, transversal collaboration becomes relevant. Transversal collaboration entails that two (or more) organizations are contributing to solving a shared task through mainly independent but aligned contributions. This type of collaboration is typically relatively structured and static and mainly focused on securing alignment in collaborative inputs and processes. This involves setting a shared direction, securing relational and structural alignment, and ensuring commitment to the shared task, which focuses on aligning activities, work processes, resources, responsibilities, rules, structures, and norms. To arrive at this understanding of transversal collaboration, a number of specifications are necessary, including what *transversal* means, what *collaboration* entails, and what characterizes the *intensity*, *scope*, and *dimensions* of transversal collaboration.

2.1.1 Clarifying What Transversal Means

Transversality is a mathematical concept used in geometry that describes a line cutting through two parallel lines (see Figure 2.2). The term is fitting to depict a specific type of interorganizational collaboration in public service delivery as it captures how two (or more) organizations are functioning individually (separate lines) within their jurisdictions, and how they are seeking to build a bridge (depicted by the transversal line, which secures parallelism) such that both organizations contribute to their shared task. In other words, the organizations are attempting to build a bridge between them, which maintains their functional separation as two individual lines but upholds parallelism, that is, the organizations are working in the same direction with a shared understanding of the plan ahead. Building a bridge while upholding parallelism is analogous to achieving alignment in individual efforts aimed at securing cohesion in the production of joint value. In section 2.1.3, I will return to what "building a bridge" entails in transversal collaboration as it speaks to the concept's dimensions, that is, what collaborat*ing* as a verb entails for organizations, leaders, and employees.

Figure 2.2. Illustration of transversality
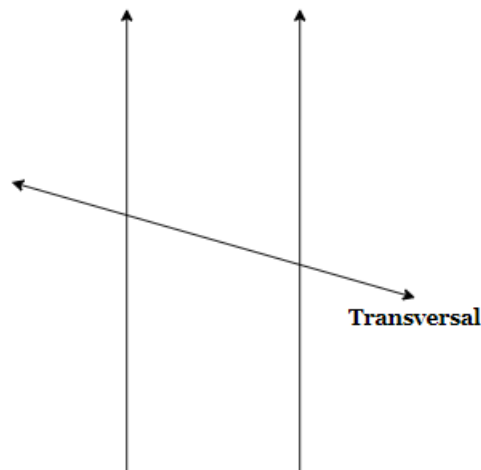
Highlighting the functional separation of the organizations is important as public organizations, more often than not, are not actively collaborating by coworking on a shared task simultaneously (if so, the lines would overlap and no longer be parallel). Instead, their collaboration consists of securing alignment and cohesiveness by contributing to their shared task from functionally and jurisdictionally separated organizations. Thus, shared tasks—and contributing to shared tasks—within a transversal collaboration framework typically resembles what O'Toole and Montjoy (1984) calls sequential interdependence, namely, that actions from one actor at one point will influence the operations of the subsequent actors in the provision of public services. If a transversal collaboration is well-functioning, interdependent organizations will experience reliable and timely contributions from their collaborators to the shared tasks. If not, the organizations will experience, for example, delays and breakdowns leading to suboptimal service delivery.

Consider, for example, a municipal health organization working with rehabilitation for ill and injured citizens. One of the main aims for the organization is to restore citizens' normal functioning as quickly and smoothly as possible, which oftentimes necessitates interaction with other public organizations such as employment services and hospitals. These organizations should, ideally, align their services such that different programs and measures—whether rehabilitative, employment-, and/or health-related—do not interfere with or counteract each other. For the leader and employee in the rehabilitation organization, this entails "building a bridge" in order to increase cohesion. Thus, *transversal* should be understood as a metaphor that encapsulates a specific type of interorganizational collaboration. In the next section, I clarify what *collaboration* entails.

2.1.2 Clarifying What Collaboration Entails

Collaboration is a concept with many connotations, definitions, and understandings of what it entails (Thomson et al., 2009). Broadly, collaboration embodies the act of working together to achieve a common goal (Rubin, 2009). Collaboration becomes relevant when organizations "have to solve problems that cannot be solved or easily solved by a single organization. Collaboration means to co-labor, to achieve common goals, while often working across boundaries and in multi-actor relationships" (O'Leary & Bingham, 2009, p. 3).

To specify the concept of transversal collaboration, it is first important to note that the term collaboration shares conceptual space with a number of related terms (Selden et al. 2006). Research focused on interorganizational public service delivery describes the conceptual diversity as, for example, "collaboration," "service integration," "vertical integration," "community partnerships," "cooperation," and "coordination" and provide numerous strategies for making sense of this diversity (Whetten, 1981; Wood & Gray, 1991). Some attempts at classification occur inductively (Gans & Horton, 1975; Kagan, 1991) while other attempts start with social science theory (Martin et al., 1983; Mitchell & Shortell, 2000) or organizational theory (Oliver, 1990; Powell, 1990). Kagan and Neville (1993) along with other scholars (Agranoff & Pattakos, 1979; Martin et al., 1983) provides a typology to categorize the relationship between organizations in terms of its formalized intensity (see Figure 2.3), with most scholars agreeing that there is a continuum of relationships that bind organizations to each other (Austin, 2000; Mattessich & Monsey, 1992).

Figure 2.3. Continuum of intensity

Cooperation	Coordination	Collaboration	Service integration

Note: Adapted from Selden et al. (2006).

The terms—collaboration, coordination, collaboration, and service integration—are often used interchangeably, but to ensure conceptual clarity, it is fruitful to distinguish them from each other. Figure 2.3 shows one way to distinguish between them on a continuum that maps the level of formalized intensity characterizing a public service delivery context. At the lower end of the continuum is cooperation, which is supported by informal, sporadic, and personal relationships between management and employees from different organizations. At the other end is formalized service integration, in which two organizations actively work together to provide a new package of services to

their mutual service recipients. Between the two ends on the continuum are coordination, in which organizations try to calibrate their actions, and collaboration, in which organizations share existing resources, authority, and rewards. Collaboration, the particular focus in this dissertation, can occur through multiple mechanisms such as integrating staff, joint planning, or joint budgeting. In section 2.1.3, I will elaborate on how transversal collaboration relates to the other terms.

In relation to collaboration in public service delivery, the "act of working together" (Rubin, 2009) can be specified further in terms of its scope and intensity. The scope of collaboration in public service delivery captures three interrelated stages: input, process, and/or output (Emerson et al., 2012; O'Toole & Montjoy, 1984). *Input* refers to when public leaders and employees from different organizations provide their specialized inputs to a task before the service delivery process has begun. *Process* captures when the leader and employees work collaboratively in the construction of the service and in the alignment of each organization's continuous inputs to the service process. *Output* describes that the *actual* service provision is delivered by two (or more) organizations collectively. At each of the three stages, public organizations, leaders, and employees can be engaged collaboratively more or less intensely. I will return to intensity and scope as well as their role in transversal collaboration next.

2.1.3 Defining Transversal Collaboration: Intensity, Scope, and Dimensions

Transversal collaboration is defined as functionally and jurisdictionally separated organizations interacting and aligning their individual inputs and collaborative processes. This process of interacting and aligning can be more or less structured and intense, depending on the context, and involves setting a shared direction, securing relational and structural alignment, and ensuring commitment to the shared task, which includes aligning activities, work processes, resources, responsibilities, rules, structures, and norms.

Transversal collaboration stems from the hierarchical understanding of social coordination, as hierarchies remain an important feature in public service delivery (Bouckaert et al., 2010; Peters, 1998). This is not meant to diminish, for example, the importance of networked strategies but simply to acknowledge that i) a large body of research on network governance already exists, and ii) research on collaboration in the public sector often diminishes the presence and impact of hierarchies. In other words, there is a lot of valuable research on network-based approaches to collaboration, but less on how public organizations approach interorganizational collaboration within their

own managerial and organizational jurisdiction. It is further important to note that research on networked collaboration vis-à-vis transversal collaboration need not be in conflict; they provide different types of answers to different types of questions, whether empirical, theoretical, or practical.

Figure 2.4. Collaboration framework
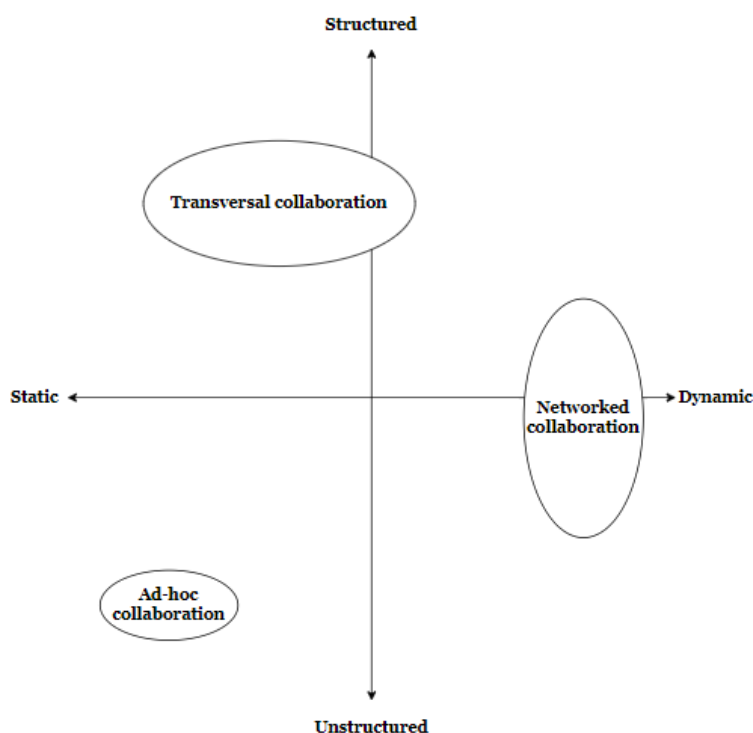
To further clarify the definition of transversal collaboration, Figure 2.4 shows how different understandings of collaboration deviate in terms of level of structure (how much focus there is on building structures to support collaborative processes) and intensity (how often public leaders and employees work closely and actively together with individuals from other public organizations). Transversal collaboration is situated in the upper half of the figure as it focuses on building and upholding structured interaction, and it is mostly placed on the left-hand side of the figure, indicating that it usually is more static than dynamic, that is, less intense.

To clarify the position on *structured/unstructured*, I lean on the literature on coordination because it provides a well-established framework for understanding how different elements and processes within collaborative efforts interact and align. By drawing on coordination theory, one can assess the degree of structure needed in a collaboration to optimize coordination mechanisms, minimize conflicts, and enhance overall performance. Coordination is a concept with several definitions and understandings (Molenveld et al., 2020), and basically, I refer to coordination as when decisions made in one organization

consider those made in others and attempt to avoid conflict (Peters, 2018); it focuses on the alignment of tasks and efforts of organizations (Bouckaert et al., 2010; Verkuil & Fountain, 2014). That is what Scharpf (1994) calls negative coordination. Positive coordination, on the other hand, requires that organizations go beyond avoiding conflicts and instead seek solutions that can benefit all organizations involved as well as the service recipients.

Negative coordination across organizational jurisdictions is the baseline for the type of collaborative public service delivery I investigate in this dissertation. Here leaders and employees interact with their collaborative partners and potentially share resources and rewards without collaborating actively on the task simultaneously. Sometimes, however, a more intense approach is needed when organizations work closely and actively to, for example, develop a shared direction or build collaborative resources such as relational forums or structural tools for sharing information. Transversal collaboration acknowledges this, which explains why it crosses onto the right-hand side of the figure. This acknowledgement, including the need to actively align work processes, resources, responsibilities, rules, structures, and norms, underlines why I coin the term transversal collaboration and not coordination.

For the last specification, I turn to the scope (input, process, and output) and dimensions of the transversal collaboration: What does "building a bridge" between two jurisdictionally separated entities entail? In terms of scope, transversal collaboration mostly focuses on input and process, meaning that it describes when public leaders and employees contribute with their functional inputs and resources to a shared task as well as the necessary processual interaction between organizations that helps to build and uphold the relations and structures to bridge them. This primary focus on inputs and processes helps to clarify the dimensions of transversal leadership, which capture the areas that organizations engaged in transversal collaboration, ideally, need to address. The dimensions are inspired by the direction, alignment, commitment-framework from Drath et al. (2008), who highlight setting a shared direction, securing sustainable relational and structural alignment, and ensuring commitment to the shared task. Specifically, the dimensions of transversal collaboration involve working towards achieving aligned activities and work processes, shared resources, and collective responsibility (Rubin, 2009) as well as formal and informal negotiation to help create shared rules, structures, and norms to accomplish a shared outcome (Thomson et al., 2009).

In sum, transversal collaboration in public service delivery captures a relatively structured and static type of collaboration (compared to networked strategies), and it is mostly focused on securing alignment in collaborative inputs and processes from functionally separated public organizations (compared to actively collaborating in the delivery of the service). In order to secure

alignment in inputs and processes, public organizations, leaders, and employees should focus on setting a shared direction, securing relational and structural alignment, and ensuring commitment to the shared task, which includes aligning their activities, work processes, resources, responsibilities, rules, structures, and norms. This understanding and definition of transversal collaboration clarifies the dissertation's explicit focus on individuals in relation to collaborative public service delivery.

2.2 Main Concepts

In the following, I conceptualize and define the main concepts of this dissertation, which shed light on the factors that might shape transversal collaboration.

2.2.1 Transversal Leadership

In this section, I present transversal leadership, which is the main independent variable of this dissertation. First, I outline the purpose of the concept, its field of applicability, and concrete leadership practices. Second, I clarify the structure of the concept. For an in-depth discussion and conceptualization of transversal leadership, see "Leadership" (Article A).

Leadership is about setting a direction and creating results via and with others to achieve organizational goals (Andersen et al., 2017). The focus on reaching goals and creating value is also at the core of transversal leadership, where the purpose is to enable public employees to work across organizational jurisdictions and contribute to transversal collaboration. This purpose demarcates the concept's field of applicability, which is a collaborative public service delivery context where public leaders need or want to attempt to engage their employees in interacting and aligning activities interorganizationally. Transversal leadership is especially pertinent when there is interdependency between public organizations, and when the service delivered in one organization depends on actions taken in another.

Additionally, Gary Yukl describes leadership as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (Yukl, 2013, p. 23). This understanding emphasizes a relational and a processual aspect of leadership, both of which are important to understand transversal leadership. Yukl further underlines that leadership is not only about influencing and facilitating the organization's current work "but also to ensure that it is prepared to meet future challenges" (p. 23). In this way, Yukl presents a holistic leadership approach in which there are lead-

ership actions prior to, during, and following a given activity. This idea of leadership practices is helpful to identify the concrete leadership practices of transversal leadership and the structure of the concept. Figure 2.5, taken from "Leadership" (Article A), clarifies the focus graphically.

Figure 2.5. Understanding transversal leadership
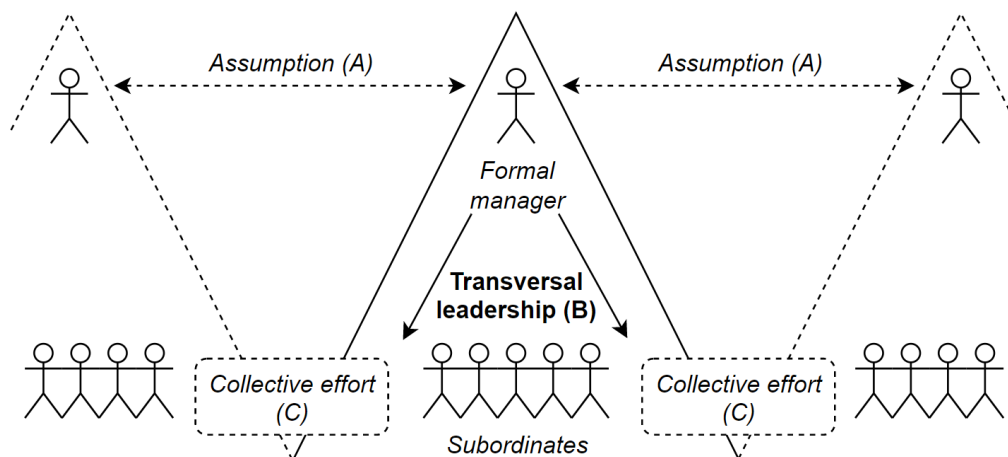
Transversal leadership captures leadership behavior aimed at promoting and sustaining employees' contributions to collaborative efforts across managerial jurisdictions, which builds on the direction, alignment, and commitment-framework (Drath et al., 2008). Specifically, transversal leadership is defined as leadership behavior seeking to direct, align, and commit their employees to shared tasks with actors outside their own managerial jurisdiction. Following Yukl, transversal leadership primarily consists of activities prior to and during collaborative efforts in public service delivery. Each step of the transversal leadership process aims to enable public employees to contribute to public service delivery across managerial jurisdictions and thus reflects the idea of leadership as a means to create collaborative value and reach specific goals. Based on this, there are three dimensions to transversal leadership, as discussed in "Leadership" (Article A).

1. **Direction**: Direction refers to promoting and sustaining the long-term goals and visions of the collective's shared work (Drath et al., 2008, p. 647), which includes ensuring clarity about shared strategies for goal achievement (Locke & Latham, 2002; Marrone, 2010) and internalizing the value of the direction. When a leader promotes and sustains a shared direction, it fosters an understanding of how the organization contributes to desirable collaborative outcomes, which relates to transformational leadership (Bass & Riggio, 2005; Jensen et al., 2019). Transformational leadership, however, is conceptualized in intraorganizational settings, which is different from transversal collaboration. Nonetheless, I expect

partly empirical overlap between the concepts, which I test in section 4.1. I show that transversal leadership and transformational leadership are relatively strongly but not fully correlated, which supports that transversal leadership is different from transformational leadership. This point is corroborated by the focus on alignment and commitment as well. In sum, shared direction is encouraged by the leader through support for the direction, clear communication about goals, and ensuring that the employees are working in accordance.

2. **Alignment**: Alignment involves leaders' attempts to align their jurisdiction with other jurisdictions and secure structured interaction through, as examples, planning, budgeting, and building mutual respect and trust (Drath et al., 2008, p. 647). It is demanding to align organizations due to the hierarchical structure of the public sector, which increases the likelihood of strategic games, unaligned decision paths, and disjoint reactions to unforeseen challenges (Bardach, 1998; Pressman & Wildavsky, 1984; Scharpf, 1994). To overcome such barriers, leaders need to prioritize structural and relational coordination such that relationships are embedded in formal structures (Gittell & Douglass, 2012; Scharpf, 1994, 1997) and attempt to develop shared mental models and knowledge structures (Ancona & Caldwell, 1992; Druskat & Wheeler, 2003; Edmondson & Harvey, 2017; Wang et al., 2014). In sum, leaders should aim to secure opportunities to coordinate crosscutting tasks as well as ensure clear guidelines and allocation of responsibility.

3. **Commitment**: Commitment reflects the willingness to spend time, energy, and resources on collaborative efforts (Drath et al., 2008, p. 647). Again, the hierarchical structure of the public sector means that leaders are responsible for adhering to local budgets and have their performance measured in terms of completion of organizational core tasks (Kettl, 2006; Nicholson-Crotty et al., 2017; Simon, 1997). This potentially lowers the credibility with which leaders can build lasting commitment to shared tasks (Jakobsen et al., 2022; Miller, 2005). Developing a robust framework for interorganizational reciprocity will function as a remedy to maximization of personal or organization-specific preferences and, hence, instead maximize focus on collaborative efforts (Gittell & Douglass, 2012). This is substantiated by the network leadership literature, which emphasizes that leaders should engage in external relations with vital collaborators (Carter & Dechurch, 2012; Cullen-Lester & Yammarino, 2016). In sum, when leaders engage in building commitment, they take ownership, underline the expected value, and stand by the shared work if issues or divergences arise.

This structure resembles a second-order concept, which has been empirically validated in "Leadership" (Article A). The three dimensions constitute an integrated cyclical process where the shared direction might be updated as time passes, which, in turn, can necessitate renewed relational and structural alignment practices as well as fostering (re)commitment among the employees. In this sense, transversal leadership is a tool to ensure the best possible platform for decision-making in collaborative service provision and that public organizations reach their goals and create shared value. In "Leadership" (Article A), I discuss the theoretical connection to other leadership concepts (including transformational leadership), and the general argument is that transversal leadership is both novel and needed because of its distinct focus on improving interorganizational collaboration through internally focused leadership behaviors aimed at the leader's own employees.

Additionally, I expect that and investigate whether transversal leadership can be trained in "Training" (Article C), which answers a call for collective leadership training (Eva et al., 2021; McCauley & Palus, 2021). Leadership training has generally shown positive results in terms of increasing organizational performance and minimizing the gap between how employees and leaders see leadership behavior (An et al., 2020; Avolio et al., 2009; Jacobsen et al., 2021). Whereas leadership training typically involves individual leaders, transversal leadership training encourages leaders to engage in training collectively including feedback sessions, discussions, and reflections regarding their collaboration as well as devising practical plans for securing engagement among employees (Holten et al., 2015).

2.2.2 Collaborative Engagement

The main outcome variable in the dissertation is collaborative engagement, which focuses on the employees' vigor and dedication to interorganizational collaboration. Employees' collaborative engagement is important for transversal collaboration because the presence of employees who feel pride, are willing to invest time and resources, and are able to push through when complexity and uncertainty are high ultimately will strengthen the probability that cohesion and alignment between organizations are upheld. I will unfold the dimensions (vigor and dedication) throughout this section, but first, it is important to establish that employee-level characteristics, perceptions, and behaviors matter for collaboration.

This is evident as it has been shown that public service motivation increases public employees' willingness to collaborate interorganizationally (Esteve et al., 2015), and that their perceptions of collaborative settings influence how they engage (Molenveld et al., 2020). Public employees show resistance

to hierarchical control and thrive with deliberation, incentives, and a collaboration-oriented culture (Molenveld et al., 2020). Similarly, the boundary spanning literature highlights employees who proactively scan the environment, employ activities to cross organizational jurisdictions, and mediate the information flow (van Meerkerk & Edelenbos, 2018). Employees should be able to develop and maintain external relationships (van Meerkerk & Edelenbos, 2014; Williams, 2012), coordinate activities across boundaries (Johnson & Chang, 2000; Tushman & Scanlan, 1981), facilitate knowledge exchange (Birkinshaw et al., 2017; Carlile, 2002), and show entrepreneurial qualities (van Meerkerk et al., 2017). So, it seems a fair assumption that public employees' characteristics, perceptions, and behaviors matter for interorganizational collaboration, and to capture their orientation and behavioral contributions to collaborative public service delivery, I focus on collaborative engagement. Collaborative engagement is important as organizations need energetic and dedicated employees: people who are engaged in their work (Bakker & Leiter, 2010).

Generally, collaborative engagement captures a positive, fulfilling, work-related state of mind (Schaufeli et al., 2002), and it is defined as being focused on participating in and contributing to interorganizational collaboration. It involves "harnessing organization members' selves to their work roles: in engagement, people employ and express themselves physically, cognitively, emotionally, and mentally" (Kahn, 1990; May et al., 2004). Collaborative engagement builds on insights from the work engagement literature which has a broader focus on work in general (Bakker et al., 2004), but it differs from work engagement as it relates specifically to situations of interorganizational collaboration.

Collaborative engagement is reflected through both vigor and dedication (Nielsen et al., 2019; Schaufeli & Bakker, 2004). Vigor is characterized by high levels of energy and mental resilience while collaborating, the willingness to invest effort in one's work, and persistence even in the face of difficulties; dedication describes being strongly involved in one's work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge when collaborating interorganizationally (Schaufeli et al., 2002). In sum, public employees' collaborative engagement captures both an orientation towards (sense of importance) and a behavior proclivity (levels of energy) regarding interorganizational collaboration. Higher collaborative engagement is thus expected to strengthen collaborative performance and ultimately lead to cohesion and alignment in public service delivery.

Generally, collaborative engagement is expected to be relatively stable due to specific job and functional characteristics (Macey & Schneider, 2008; Sieg-

ling et al., 2019). However, it is not a fixed state (Çankır et al., 2015): Engagement can fluctuate due to changes in job resources, such as social support from co-workers and superiors, feedback, coaching, task variety, and opportunities for development, and can be a result of personal resources, such as self-efficacy and personality traits (Bakker & Demerouti, 2008; Hakanen et al., 2008; Kallioniemi et al., 2018; Xanthopoulou et al., 2007). In sum, collaborative engagement is expected to be malleable, and it is worth investigating whether and how employees' collaborative engagement can be influenced by, for example, leadership and self-efficacy.

2.2.3 Collaborative Self-efficacy

Collaborative self-efficacy is defined as an individual's beliefs in their own capability to contribute to collaborative processes and ends and constitutes a potential mechanism through which transversal leadership can affect employees' engagement. Collaborative processes and ends include formal and informal interaction, shared rules, structures, norms, and building reciprocity. Collaborative self-efficacy is relevant for transversal collaboration as it captures a deep-seated psychological disposition that potentially explains why some public employees feel capable of contributing to securing alignment and cohesion across organizational jurisdictions. "Self-efficacy" (Article B) provides an in-depth conceptualization.

The conceptualization is based on Thomson et al.'s (2009) definition of interorganizational collaboration as "a process in which actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions" (Thomson et al., 2009, p. 25). Thus, a collaboration—and to collaborate for the individual—is processual and requires ongoing action. The action focuses on negotiating and navigating in relation to shared rules, norms, structures, and reciprocity through mutually beneficial interaction (Thomson et al., 2009).

In order to integrate the dimensions of interorganizational collaboration—taking initiative, building relations, managing structures, creating value—at the level of the individual, I use self-efficacy as framework (Bandura, 1997). Self-efficacy frames the contribution of the individual with regard to their belief in own capabilities to attain and contribute to each dimension. As such, each dimension of interorganizational collaboration necessitates active behavior and has noteworthy barriers to success, which makes self-efficacy relevant (Bandura, 2006). Think, as examples, of feeling capable of being a first mover,

sharing information in a precise and timely manner, building respectful relations, navigating structural differences across organizational jurisdictions, and contributing to the creation of shared value.

Table 2.1. Collaborative self-efficacy: Structure and definitions of dimensions

Concept	Dimensions	Definition of dimension	Supporting literature
Collaborative self-efficacy	Initiative	The belief in own capability to take initiative, engage actively, and act creatively when working together with others.	Getha-Taylor (2008), Seeman (1959), Tummers (2010)
	Relations	The belief in own capability to understand others' perspectives, engage in compromises, and build mutual respect.	Gittell and Douglass (2012), Lauritzen et al. (2021), Alborz et al. (2009)
	Structures	The belief in own capability to span organizational and structural boundaries (for example, geography, finances, and norms)	Seeman (1959), Pedretti & Bellomo (2013), Woodland & Mazur (2015)
	Value creation	The belief in own capability to produce value and solve complex tasks when working together with others.	Moore (2013), Tummers (2012), Kalekin-Fishman (2000)

Table 2.1 shows the structure of collaborative self-efficacy and defines the four dimensions. In the following, I explain what the dimensions entail stemming from Thomson et al.'s (2009, p. 25) definition: "a process in which actors *interact* through formal and informal *negotiation*, jointly creating *rules* and *structures* governing their *relationships* and ways to act or decide on the issues that brought them together; it is a process involving *shared norms* and *mutually beneficial interactions*" (emphasis added). The four dimensions relate to the terms that are emphasized in italics.

1. **Initiative:** Initiative relates to the need for *interaction* and *negotiation* from Thomson et al. (2009). Specifically, initiative captures the perceived capability to take initiative, engage actively, and act creatively when working together with others. These dimensions are highlighted by Getha-Taylor (2008), Seeman (1959), and Tummers (2010, 2012). The latter mentions taking initiative, feeling able to influence outcomes, and creative, analytical, and conceptual thinking as important competencies, all of which concern approaching complex issues through structured thinking.

2. **Relations:** Relations capture the need for *relationships* and *shared norms* in Thomson et al. (2009), specifically the degree to which the employee believes in their own capability to understand others' perspectives, engage in compromises, and build mutual respect. Gittell et al. (2013), Williams (2011), and Williams (2002) highlight relational competencies, such as showing empathy and engaging in compromises, as important. Lauritzen et al. (2021), Alborz et al. (2009), and McLaughlin et al. (2006) point to the importance of social support, recognition, and professional community when collaborating.

3. **Structures:** Structures relate to *rules* and *structures* in the definition from Thomson et al. (2009), specifically the degree to which the employee believes in their own capability to span and navigate organizational jurisdictions, which are likely to amplify differences in professional norms as well as geographical, legal, and economic frameworks (Pedretti & Bellomo, 2013; Woodland & Mazur, 2015). These abilities are highlighted by Fenwick Tara et al. (2014), Hattie (2009), and Getha-Taylor (2008), who specifically mentions organizational awareness, exerting flexibility, understanding formal structures and organizational politics. Again, the importance of powerlessness becomes apparent (Seeman, 1959; Tummers, 2012) as organizational jurisdictions may appear rigid and constraining to public employees.

4. **Value creation:** Value creation relates to *mutually beneficial interactions* from Thomson et al. (2009), specifically the degree to which the employee believes in their own capability to produce value and solve complex tasks when working together with others. When the goal is shared value creation, collective action problems, a well-known phenomenon in social systems (Ostrom, 1998), can hamper individual contributions (Moore, 2013). The work alienation literature (Kalekin-Fishman, 2000; Seeman, 1959; Tummers, 2012) highlights meaningfulness, "the ability to comprehend the relationship of ones contribution to a larger purpose" including the added value to socially relevant goals, as a remedy (Sarros et al., 2002, p. 304).

In essence, collaborative self-efficacy refers to an individual's belief in own capabilities to participate effectively in collaborative processes and contribute to achieving shared tasks. It is relevant because it can be nurtured by public leaders, particularly when the employee's role requires them to engage in boundary spanning activities and collaborate beyond their own organization. A strong belief in own capabilities to contribute heightens the sense of self-efficacy in taking initiative, building relationships, navigating organizational structures, adding value to and through collaborative efforts and predisposes

employees to engage more actively in transversal collaboration. In this context, the four dimensions are expected to be interrelated and form a cohesive framework constituting a first- and second-order reflexive model, which has been empirically validated in "Self-efficacy" (Article B).

2.2.4 Interorganizational Coordination

When investigating transversal collaboration in public service delivery, I focus on individual-level factors that may shape the way organizations collaborate. As a final concept, I am interested in interorganizational coordination, which stems from Gittell and Douglass' work on relational bureaucracy (Gittell & Douglass, 2012). Their focus is on relational coordination and structural coordination mechanisms. Public employees' assessments of interorganizational coordination are important for understanding transversal collaboration as they constitute a foundation for engaging actively; if an employee is feeling discontent with the quality of the relations and structural coordination mechanisms at their disposal, they are expected to be less likely to engage across organizational jurisdictions.

Relational coordination, as defined by Gittell (2002, 2006), encompasses the collaborative interaction between individuals across organizational boundaries. This collaboration relies on a mutually reinforcing process that involves effective communication (adequate, timely, accurate, and problem-solving) and relationship building (shared goals, shared knowledge, and mutual respect). The main objective is to integrate tasks and establish interdependency among actors. Relational coordination is particularly valuable in high-velocity and unpredictable environments (Gittell & Douglass, 2012, p. 718) where functional divisions can create inherent challenges (Christensen & Lægreid, 2008; Havens et al., 2010). Enhanced relational coordination can foster a collective understanding among employees, sustainable reciprocal interrelations, and mutual adjustments. Numerous studies have linked relational coordination with various positive outcomes, such as employee well-being, learning, innovation, and efficiency (Bolton et al., 2021; Carmeli & Gittell, 2009; Gittell, 2003; Gittell et al., 2000; Havens et al., 2018). These findings underscore the significance of relational coordination in promoting effective collaboration.

Next, structural coordination mechanisms are fundamental tools for collaboration across organizations (McGuire & Silvia, 2010; Simon, 1946). In the relational bureaucracy literature, structural factors are regarded as an important foundation for decreasing vis-à-vis improving the relational coordination and the efficiency of interorganizational collaboration (Bolton et al., 2021;

Gittell & Douglass, 2012). Structural factors include, for example, performance goals, budgetary restrictions, reward procedures, procedural frameworks, and information systems, all of which potentially influence whether employees can work effectively across boundaries (Gittell et al., 2013). In sum, the quality and assessments of both relational and structural coordination constitute the bedrock of interaction in transversal collaboration. Both types of coordination can be worked on actively, for example, by public leaders building the necessary relational and structural tools to collaborate (Bolton et al., 2021).

In "Training" (Article C), relational coordination and structural coordination mechanisms are treated as outcome measures as they shed light on importance features of transversal collaboration. If public employees perceive the interorganizational coordination (relational and/or structural) as relatively good, they are more likely to contribute because they assess that the collaborative setting is characterized by shared goals and effective communication, and that structural tools are readily available. In contrast, if they assess the interorganizational coordination as insufficient, they will likely feel less inclined to engage. Unfortunately, it has not been possible to test the effects of interorganizational coordination on collaborative engagement directly as indicated by the dotted line in Figure 2.1.

2.3 Main Relationships

To understand transversal collaboration in public service delivery, it is necessary to investigate the relationships among the relevant concepts presented in section 2.2. Therefore, I present the main arguments concerning the relationships I investigate in the dissertation. Please consult the respective articles for explicit hypotheses.

2.3.1 The Influence of Transversal Leadership on Collaborative Engagement

Generally, I expect that transversal leadership will strengthen employees' collaborative engagement, which I test in "Behavior" and "Commitment" (Articles D and E). Transversal leadership involves leadership behavior seeking to direct, align, and commit one's own employees to shared tasks with actors outside their own managerial jurisdiction. It can be understood on a continuum varying from high to low, and I expect that high transversal leadership influences employees' collaborative engagement positively compared to low.

High transversal leadership involves several key elements, including supporting a clear vision for shared work, building structural coordination mechanisms, fostering trusting relationships between employees and their collaborators, and encouraging individual responsibility and commitment (Drath et al., 2008). On the other hand, low transversal leadership is characterized by a lack of a shared direction, inadequate support for the shared task, limited focus on building necessary structural and relational resources, and minimal commitment to the initiative (Gittell & Douglass, 2012). When leaders exhibit high transversal leadership, it signals to employees the importance of collaboration and sets clear goals for the endeavor (Jensen et al., 2019). Additionally, high transversal leadership will likely foster psychological safety and trust among team members (Edmondson, 1999), which in turn reduces complexity and transaction costs (Chiles & McMackin, 1995; Ostrom, 1998). Consequently, employees are expected to develop a stronger dedication and enthusiasm towards the shared task (Ansell & Gash, 2008; Wright et al., 2012), which strengthen their orientation and behavioral contributions to transversal collaboration.

2.3.2 Collaborative Self-efficacy as a Potential Mechanism

Next, I explore the role of collaborative self-efficacy as a potential mechanism linking the impact of transversal leadership to collaborative engagement, a topic I investigate in "Behavior" (Article D). I anticipate that collaborative self-efficacy will positively mediate the relationship between transversal leadership and collaborative engagement.

Specifically, when leaders exhibit high transversal leadership, they emphasize the integral role of individual employees in the collaborative initiative and provide support to make a positive difference. This emphasis is likely to boost employees' collaborative self-efficacy, as they are verbally persuaded that they have the capability to contribute effectively to collaborative processes and goals (Bandura, 1997). Additionally, the provision of relational and structural coordination mechanisms strengthens employees' belief in their personal ability to contribute to collaborations (Gittell, 2006; Tummers, 2012).

However, it is essential to note that collaborative self-efficacy might not fully mediate the relationship between transversal leadership and collaborative engagement. I am testing how verbal persuasion influences collaborative engagement, but self-efficacy also develops through mastery and vicarious experiences (Bandura, 1997). This suggests that public employees might require actual collaborative experiences or observe trusted peers engaging in collabo-

rations to increase their self-efficacy. Nonetheless, higher levels of collaborative self-efficacy are expected to reinforce collaborative engagement among employees as they feel more competent to contribute (Ancarani et al., 2021; Jacobsen & Andersen, 2017). Feeling capable and competent in collaborative efforts enhances their dedication and enthusiasm towards collaborative tasks, which helps increase motivation (Deci & Ryan, 2000), engagement (Song et al., 2018), and ultimately their contributions to collaborations.

2.3.3 The Influence of Transversal Leadership on Interorganizational Coordination

Finally, I am interested in whether transversal leadership can affect interorganizational coordination. Generally, I expect that transversal leadership will strengthen the assessments of both relational and structural coordination between two collaborating organizations, which I investigate empirically in "Training" (Article C).

Relational coordination is generally associated with sustainable and reciprocal interaction as well as mutual adjustments as leaders and employees feel obliged to contribute to shared goals (Gittell, 2006; Gittell et al., 2013). I anticipate that higher transversal leadership will improve relational coordination, because high transversal leadership means that leaders are better able to assess, promote, and sustain the significance and content of the shared direction and goals. This improves leaders' ability to analyze challenges and interdependencies, which creates a holistic, psychologically safe, and credible outset for engaging employees and envisioning boundary spanner roles (Bolton et al., 2021). Transversal leadership is expected to enhance leaders' abilities to initiate and reinforce structured and timely interaction, which support interpersonal relations and collective action. According to Ostrom (1998), the foundation for collective action is built through repetition and relies on three dimensions: trust, reciprocity, and reputation. Increasing interaction facilitates psychological contracts, psychological safety, and a sense of obligation to contribute (Ring & Van de Ven, 1994).

Similarly, transversal leadership fosters knowledge about barriers to coordinated efforts as well as competencies to organize structural coordination mechanisms, such as joint performance measures, cross-role meetings, conflict resolution protocols, common professional guidelines, and boundary spanning job designs (Gittell & Douglass, 2012; Gittell & Weiss, 2004). These mechanisms are essential for transversal collaboration as they influence employees' motivation to contribute (Edmondson & Harvey, 2017, 2018; Molenveld et al., 2020) and help develop interdependence, trust, and reciprocity

(Axelrod, 1984; Ostrom, 1998). Interorganizational interaction is similarly influenced by the collaborative design, and successful interaction requires routine-based transfer of resources into transversal collaboration (Gittell & Weiss, 2004, p. 149). Structural coordination mechanisms facilitate such routinization, enhance interactions, and increase effectiveness (Gittell 2002) even in the absence of traditional coordination mechanisms (Gray & Wood, 1991; Huxham & Vangen, 2005; O'Toole, 1997). By implementing structural coordination mechanisms, trust, interdependence, goodwill, reciprocity, and accommodation can be promoted (Innes & Booher, 1999; Powell, 1990), which will strengthen the basis for transversal collaboration.

Chapter 3.
Settings, Data, and Designs

This dissertation consists of two single-authored and three co-authored articles as described in Chapter 1. In this chapter, I present the settings, research designs, and data collections for the five articles as well as some of the most central methodological choices I have made in order to answer the research questions: What is transversal leadership? To what extent does transversal leadership influence collaborative engagement and interorganizational coordination? How does self-efficacy act as a mechanism to the influence of transversal leadership?

The research questions are descriptive, explanatory, and focused on testing theoretical relationships, which requires both theorization and research designs that provide causal evidence about the concepts and their relationships. I therefore use quantitative research designs to generate reliable insights about the dimensionality of the concepts and to show how it may be possible to strengthen transversal collaboration through specific and actionable behaviors from leaders and employees.

Table 3.1. Data and designs

	Design	**Data**	**Main variables**
Article A (Leadership)	Quantitative scale development	3000 employees and 500 middle managers in healthcare	Transversal leadership
Article B (Self-efficacy)	Quantitative scale development	250 junior doctors	Collaborative self-efficacy
Article C (Training)	Quantitative field experiment (and interviews)	3000 employees and 500 middle managers in healthcare	Transversal leadership Interorg. coordination
Article D (Behavior)	Quantitative survey experiment	500 occupational therapists employed in municipalities	Transversal leadership Collaborative engagement
Article E (Commitment)	Quantitative survey experiment	500 occupational therapists employed in municipalities	Transversal leadership Collaborative engagement

Table 3.1 gives an overview of the data and design for each article, all situated in a healthcare context. The table clarifies that I have used a variety of methods including survey experiments and field experiments, and that I primarily rely

on quantitative research methods combined with interviews in "Training" (Article C). Detailed information concerning the methodological procedures can be found in each article.

3.1 Research Settings

I have collected survey data in three surveys with public leaders, frontline managers, and frontline employees in the Danish healthcare sector. The three data collections constitute the foundation for developing and validating the measurement scales for transversal leadership (Article A), collaborative self-efficacy (Article B), and for conducting the three experimental studies in the dissertation (Articles C, D, and E).

To validate the measurement scales and evaluate the theorized relationships experimentally, I had a number of criteria for the case selection. I needed public organizations with a relatively fixed set of core tasks, an intuitive need to collaborate across organizational and managerial jurisdictions (within one overall organization or broader), and, preferably, a group of employees with relatively strong professional norms. I expect transversal leadership and collaborative engagement to be most relevant in organizations like this because of the intuitive need for shared direction, alignment, and commitment to overcome barriers stemming from a focus on core tasks and adherence to one's own norms and approaches.

I was able to meet these criteria by investigating the Danish healthcare sector, specifically doctors, nurses, and occupational therapists, who all work with treatment and rehabilitation from physical illnesses and psychosocial challenges and generally interact with several other public organizations to secure and improve continuity of care. Due to demographic and social developments, it is evident that more and more citizens will experience multimorbidity (Plana-Ripoll et al., 2019; Schiøtz et al., 2017) and, by implication, ask for cohesion in their treatment. Already, approximately 40 percent of patients experience at least two concurrent illnesses, and around 10 percent receive services from both hospital and local municipality (Sundhedsstyrelsen, 2021). This undergirds that the healthcare sector is a suitable setting for studying transversal collaboration.

For the reasons mentioned above, the healthcare sector constitutes a critical and exemplary case to study transversal collaboration. In other words, the healthcare sector is expected to yield useful insights that are generally applicable to organizations with similar characteristics: a relatively fixed set of core tasks, clearly delimited accountability, and relatively strong professional norms. However, focusing solely on the healthcare sector limits the intuitive generalizability of the findings. On the positive side, the findings are likely to

be relevant and applicable within the healthcare context broadly. Healthcare settings share common features such as complex interorganizational relationships, high reliance on collaboration, and the importance of effective leadership. However, the healthcare sector is diverse and encompasses various specialties, organizational structures, and cultural differences. Consequently, the findings from one healthcare setting may not fully apply to other contexts within or beyond the healthcare sector, leading to potential challenges in generalizing beyond the specific context. To enhance generalizability, future research is needed to conduct studies across multiple contexts and encompass a broader range of variables to improve our understanding of the complexities of transversal collaboration, transversal leadership, collaborative self-efficacy, and collaborative engagement.

3.1.1 Data Collections

Below, I describe the process of collecting the three surveys mentioned in Table 3.1. I refer to each article for more in-depth descriptions of the collection procedures. The **first data collection** pertained to the field experiment conducted in 2019, which provided data for "Leadership" and "Training" (Articles A and C). The field experiment involved a leadership training program with 122 leaders from hospitals and municipal health services. Data was collected before the training program started (2019) and three months after the last training session (2020). For "Leadership" (Article A), I use the baseline data to construe and validate the measurement scale, and for "Training" (Article C), I compare the pre- and post-training responses across the groups of respondents (participating leaders, frontline managers, and frontline employees) in order to assess the effects of attending leadership training.

Data was collected in collaboration with the Central Denmark Region. The region's five hospitals employ between 1,500 and 10,000 employees, and specialized departments operate with a significant level of interdependence. The 122 participating leaders were selected from 68 organizational units, which were organized in pairs, forming 34 interorganizational management teams, each consisting of one or two leaders from each unit. Participants were recruited through the hospitals, who were asked to recruit leaders on a voluntary basis. They were informed that participants would be randomly assigned to either a training group or a control group. In total, 122 participating leaders (response rate around 95% in both surveys), 590 frontline managers, and 3,579 frontline employees (response rate around 40% in both surveys) answered the surveys. The balance table (Table 3.2) shows a satisfactory randomization.

Table 3.2. Balance table

	Participating leaders		Frontline managers		Frontline employees	
	Control	*Treatment*	*Control*	*Treatment*	*Control*	*Treatment*
Relational coordination	0.74 (0.18)	0.70 (0.21)	0.71 (0.22)	0.69 (0.23)	0.69 (0.23)	0.68 (0.21)
Structural coordination	0.52 (0.20)	0.47 (0.17)	0.41 (0.23)	0.36* (0.21)	0.37 (0.26)	0.35 (0.23)
Collaborative quality	0.71 (0.21)	0.68 (0.21)	0.63 (0.24)	0.64 (0.21)	0.64 (0.22)	0.64 (0.22)
Gender (female = 1)	0.71 (0.46)	0.61 (0.49)	0.70 (0.46)	0.64 (0.48)	0.88 (0.33)	0.87 (0.34)
Age	56.04 (7.13)	58.27 (6.03)	51.70 (8.53)	53.14 (8.57)	47.63 (10.75)	47.52 (10.91)
Seniority	5.87 (4.46)	6.76 (6.51)	6.39 (6.48)	7.39 (7.07)	9.71 (0.25)	9.77 (8.81)
Sector (1=municipal)	0.12 (0.33)	0.16 (0.37)	0.05 (0.22)	0.12* (0.38)	0.16 (0.36)	0.13 (0.33)
Size of organization	152.9 (52.50)	142.8 (61.16)	-	-	-	-
Team type (1 = hospital/municipal)	0.38 (0.49)	0.35 (0.49)	-	-	-	-
Shifts (night)	-	-	-	-	0.25 (0.43)	0.26 (0.49)
Employment terms (part-time = 1)	-	-	-	-	0.47 (0.50)	0.39** (0.49)

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. T-test between control and treatment group. Data stems from the 2019-baseline data collection. Standard deviations in parentheses.

The **second data collection** aimed to develop the measurement scale for collaborative self-efficacy in "Self-efficacy" (Article B). After a series of tests and revisions, the final survey was distributed via email in October 2021 in collaboration with the Danish Association of Junior Hospital Doctors (Yngre Læger in Danish), a union representing junior doctors in the Danish healthcare sector who are currently studying or have completed their medical education but have not yet taken on administrative responsibilities.

As part of a broader data collection, this part of the survey was only sent to a subset of the association's members. Specifically, the sample consisted of doctors who (as a minimum) had already chosen their specialty, which they can do after completing their one-year post-studies clinical basis education. This allows them to work in introductory positions across departments and wards to clarify their preferences before committing to a specialty position. In other words, the doctors from the article's sample have had finished their medical studies at least one year prior to participating in the survey.

Choosing a sample of doctors who have already chosen their specialty in-creases the likelihood that respondents feel connected to their department and view collaboration with "others" as meaningful. An introductory question was posed to the respondents regarding how frequently they collaborate with in-dividuals from other organizations. Those who reported collaborating less than once a month were excluded from the collaborative self-efficacy items. Before answering the items, respondents were presented with an introductory text to clarify the collaborative context and specify "others," namely "employ-ees from other departments or organizations." After a second reminder, 575 members had completed the survey.

The **third data collection** involved the two survey-experimental studies "Behavior" and "Commitment" (Articles D and E) focusing on the effects of transversal leadership and presentational strategies on employees' collabora-tive engagement and assessments' of leader credibility. The experiments were conducted in collaboration with a Danish labor union for occupational thera-pists (Ergoterapeutforeningen in Danish). The survey was distributed via email to the 5,012 municipally employed members of the union in October 2022. The article obtained a representative sample of Danish municipally em-ployed occupational therapists consisting of 555 respondents (11 percent re-sponse rate).

Conducting the analyses on a population-based sample of occupational therapists compared to students or online survey providers offered substantial advantages. This approach allowed me to observe how actual public employ-ees react and behave in response to leadership behavior and ensured a realistic scenario that aligns with the nature of occupational therapy in the public sec-tor. The randomized experiment consisted of two primary groups: the low

transversal leadership group (n = 276) and the high transversal leadership group (n = 279). The balance table (Table 3.3) indicates that the random allocation of respondents generally worked as intended, although significant differences were observed on one dimension, gender. To address this issue, control variables were included in the final analyses to account for confounding factors.

Table 3.3. Balance table

	Low transversal leadership	High transversal leadership
Public Service Motivation	3.62 (.047)	3.63 (.039)
Occupational self-efficacy	3.86 (.044)	3.94 (.035)
Job satisfaction	7.56 (.080)	7.72 (.069)
Age (mean)	45.62 (.561)	45.05 (.543)
Gender (1 = female)	.908 (.017)	.964** (.010)
Tenure in position (years)	8.38 (.381)	7.90 (.365)
Administration (1 = healthcare and/or eldercare)	.819 (.053)	.788 (.068)
Number of observations	276	279

Note: Standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

3.2 Testing the Arguments: Analytical Approaches and Designs

I am using quantitative approaches to validate the measurement scales (Articles A and B) and estimate the relationships in the theoretical model in Articles C, D, and E (see Figure 2.1).

3.2.1 Measurement Articles

For both conceptualization and measurement articles (A and C), I employ explorative and confirmatory factor analyses to establish the scales' dimensionality as well as correlation-based analyses to assess their validity and reliability. The psychometric properties were tested similar to Jensen et al. (2019) and Tangsgaard (2022) and according to guidelines in Anderson and Gerbing (1988) and Worthington and Whittaker (2006).

The process in both articles began with exploratory factor analysis to identify the best fit for the models and uncover their underlying dimensions. At this stage, data reduction was not the goal (DeCoster, 1998); rather, the focus was on exploring and examining the concept's dimensionality (Acock, 2012;

DeVellis, 2017). The full list of items was included in both articles, and principal component factoring was used without specifying the expected number of factors beforehand. Subsequently, confirmatory factor analysis was conducted to assess whether the theorized structure of the concepts held.

To avoid bias and unreliable results, the confirmatory factor analysis should not be estimated on the same data as the exploratory factor analysis (DeVellis, 2017; Hinkin, 1998). Data-splitting was employed to mitigate this issue. Although data-splitting reduces sample sizes and statistical power, it enhances the reliability of the measurement (DeVellis, 2017; Podsakoff et al., 2012). Hence, a random subset of the data was used for calibration (exploratory factor analysis) with a sample size of n = 1785 (employees)/292 (frontline managers) in "Leadership" (Article A) and n = 274 (junior doctors) in "Self-efficacy" (Article C). The other half of the data was used for model validation (confirmatory factor analysis) with a sample of n = 1794/298 in "Leadership" and n = 266 in "Self-efficacy".

Next, I assessed the reliability and validity of the measures. Reliability refers to the internal consistency of the scale, while validity relates to how well the scale reflects the latent variable (Adcock & Collier, 2001; Carmines & Zeller, 1979; DeVellis, 2017). The scales' reliability was examined using Cronbach's alpha, means, standard deviations, and correlations between concepts' dimensions (Lee & Van Ryzin, 2019; Tangsgaard, 2022; Tummers & Knies, 2016). To assess measurement validity, Adcock and Collier (2001) and DeVellis (2017) recommend examining the theoretical and statistical relationships of the scale with other variables. Specifically, the study assessed convergent validity, which examines the scale's correlation with logically similar constructs, criterion validity, which focuses on whether the scale predicts changes in relevant variables, and discriminant validity, which determines whether the scale correlates with theoretically unrelated constructs.

To test the internal validity among the dimensions of the concepts, I compare the average variance extracted (AVE) for each dimension with its squared correlation with the other dimensions of the concepts (Kline, 2015). AVE represents the variance captured by the construct relative to the variance due to measurement error (Fornell & Larcker, 1981). AVE should be equal to or greater than 0.5 for convergent validity, and it should be equal to or greater than the squared correlations for discriminant validity.

3.2.2 Field-experimental Article

In the "Training" study (Article C), a difference-in-difference analytical strategy was applied to estimate the effects of attending a 10-month transversal leadership training program with leaders from hospital units and municipal

healthcare organizations. The program consisted of four full training days, each lasting around eight hours, during which the leaders were trained with their interorganizational team members. The teams were deliberately put together to reflect natural interfaces between organizational units; for example, leaders from orthopedic surgery and back surgery trained together as they naturally share a pool of patients.

The training material for the four days was developed by the researchers and drew from various literatures including the direction, alignment, commitment-framework (Drath et al., 2008), relational coordination and relational leadership theory (Gittell, 2006; Gittell & Douglass, 2012), and goal-oriented leadership (Jacobsen et al., 2022). The training days covered different aspects of transversal leadership: the first day focused on shared direction (emphasizing goals and visions), the second on coordination (structural and relational), the third on coordination/commitment (involvement and communication), and the fourth on commitment (motivation and credibility).

To address common challenges in leadership training related to transferring insights from training to the workplace, the training program incorporated action learning, experiential learning, and leadership support (Holten et al., 2015; Jacobsen et al., 2022). Each training day provided leaders with knowledge on a specific topic, opportunities for group discussion and reflection, and time to plan leadership actions. The training days were spaced two to three months apart to allow leaders to implement the insights. Additionally, an organizational consultant from the region assisted each interorganizational team in recapping learning points, promoting reflection, and sustaining the shared efforts.

As outcome measures, we measured the assessments of relational coordination and structural coordination mechanisms among participating leaders, their frontline managers, and frontline employees both before and after the treatment group received transversal leadership training. See figure 3.1, taken from "Training" (Article C), for an overview of the research setting. Relational coordination was measured using nine items based on Gittell (2009), and structural coordination mechanisms were measured using nine items based on Gittell and Weiss (2004) and Argote (1982). The items focused on aspects such as mutual meetings, shared information systems, and shared clinical guidelines.

Figure 3.1. Overview of the research setting
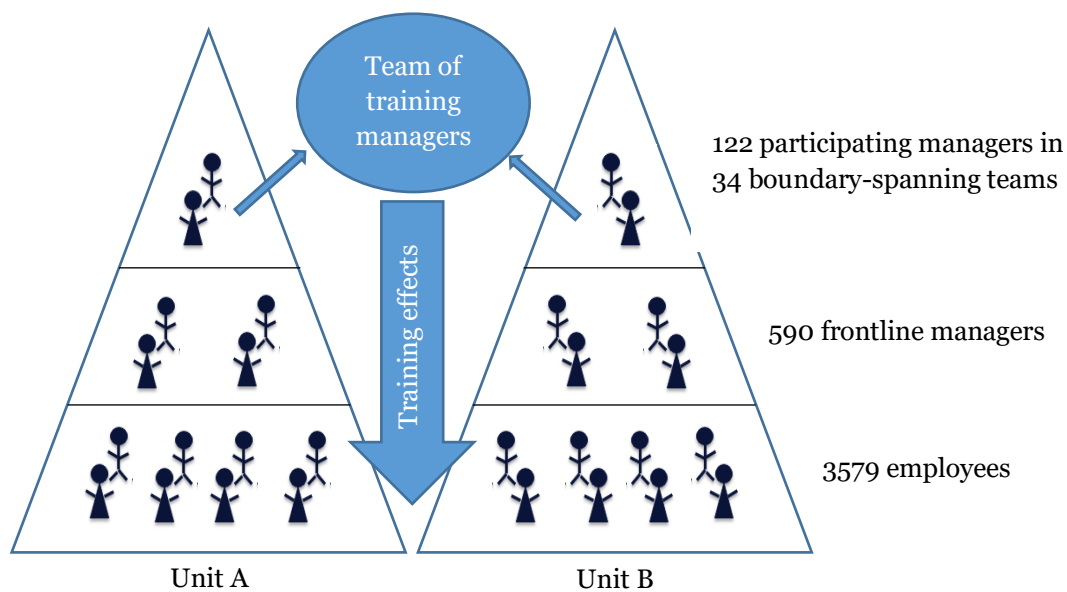
To model the effects of leadership training, the difference-in-difference approach was employed to compare trends in outcomes pre- and post-training for the intervention and control group, respectively. This approach is optimal as it allows control for time-invariant unobservable characteristics. It was prioritized to investigate assessments of relational and structural coordination among participating leaders, frontline managers, and employees as dependent variables for two reasons. First, it is important to identify the effects of training at different levels, as behavior change is likely to be more evident the closer one is to the training (Jacobsen & Andersen, 2015). Hence, it is necessary to assess whether potential effects of leadership training can influence frontline managers and employees as their perceptions and behaviors ultimately compose transversal collaboration. Second, this strategy helps to limit potential common source bias from solely relying on the leaders who participated in the training.

In addition to the quantitative data, 32 interviews with 13 leaders from three interorganizational teams in the intervention group, a sample of their frontline managers, and their hospital directors were conducted after the training program had ended. The purpose of these interviews was to gain deeper insight into learning points, barriers, and facilitators related to the effects of leadership training. The interviewees were selected randomly to ensure representation across geographical areas, medical specialties, and the regional-municipal interface. The insights gathered from these interviews are discussed in sections 4.1 and 4.2.

3.2.3 Survey-experimental Articles

For the "Behavior" and "Commitment" studies (Articles D and E), a scenario-based research design including survey experiments with video vignettes and a behavioral centipede game was employed. The scenario revolves around a national political majority focusing on improving rehabilitation of citizens if they are ill and unable to work. In response, the respondent's frontline manager, Anne (portrayed by an actress), decides that the respondent should be a part of a two-person working group with a regionally employed nurse focusing on late effects of COVID-19. The working group is scheduled to start with five meetings.

Figure 3.2, taken from "Commitment," shows the survey flow used in both studies. In "Behavior" (Article D), I estimate the effects of transversal leadership (step 2, video vignette) on collaborative engagement (step 3, the five meetings). "Commitment" (Article E) focuses on the effects of presentational strategies (step 4, video vignette) on leader credibility and collaborative engagement (step 5). In the following, I describe each step in more detail, and clarify how both articles illuminate important aspects of transversal collaboration.

After reading an introduction to the scenario (step 1 in the survey flow), the respondents are randomly shown one of two videos as experimental variation (step 2). In one video, Anne demonstrates high transversal leadership; she emphasizes that the collaboration has a clear vision in helping vulnerable citizens, and that the respondent is integral to its success. Furthermore, she stresses that structural coordination mechanisms are taken care of, that the respondent and the nurse will have an opportunity to build a trusting relationship, and that Anne herself is committed. In the other video, Anne shows low transversal leadership. She emphasizes that rehabilitation is expensive for the public sector, that resources and support for the working group are scarce, and that the respondent and nurse are expected to self-manage their collaboration. Both videos last approximately one and a half minutes and contain a similar number of words. The actress was instructed to use the same tone and body language in both videos to eliminate potential effects driven by variation in, for example, charisma.

Figure 3.2. Survey flow

STEP 1:
Introduction

STEP 2 (video vignette):
Manager investment in
leadership initiative

STEP 3:
Employee investment
through contributions

STEP 4 (video vignette):
Presentational strategies
to explain termination

STEP 5:
Outcome measures

Written introduction to scenario

High investment in initiative

Low investment in initiative

Collaborative centipede game

Keeping it low

Taking responsibility

Taking responsibility and providing an argument

Blaming the principal

Borrowing the principal's reasoning

Leader credibility + Collaborative engagement

Table 3.4. Overview of meetings

	Topic of material	Coworkers	Nurse
Meeting 1	Typical physical challenges	No pressure	No pressure
Meeting 2	Typical psychological and psychosocial challenges	You sense from your colleagues that you are missed in your daily work	No pressure
Meeting 3	How to work therapeutically with potential cognitive and behavioral challenges	You sense from your colleagues that you are missed in your daily work	The nurse has begun to doubt whether she has time to prepare
Meeting 4	How to use, among other things, ADL-I and COPM to map citizens' functional ability and everyday life	You clearly sense from your colleagues that you are missed in your daily work	The nurse has begun to doubt whether she has time to prepare
Meeting 5	How to involve citizens, how to use new technologies, and how to devise health-promoting measures	You clearly sense from your colleagues that you are missed in your daily work	The nurse strongly doubts whether she has time to prepare

After watching the video, the respondents go through the five meetings in a pseudo two-player collaborative centipede game (step 3) similar to Weißmüller and Vogel (2021). Before each meeting, the respondent and nurse are asked to prioritize between "preparing material for their shared meeting" or "their usual core tasks." See Table 3.4 for the topic of the meetings as well as the increasing pressure from coworkers and collaborator, meant to strengthen the incentive to defect (McKelvey & Palfrey, 1992). It is emphasized that both the respondent and the nurse are completely free to decide; if either chooses "usual core tasks" for one of the meetings, the other part's preparation will be wasted, and the collaboration will terminate. In reality, there is no nurse deciding whether they will "prepare materials for the meeting" (therefore, "pseudo two-player"). Instead, the survey is programmed always to signal that the nurse wishes to prepare materials for the meeting and, hence, continue. The employee's collaborative engagement is captured by the three outcome measures: i) the number of meetings for which the respondent decides to "prepare material" ranging from 0 (choosing "usual core tasks" for the first meeting) to 5 (choosing "preparing material for the meeting" for all five meetings), ii) the average time spent preparing materials for the meetings, and iii) whether the respondent wrote what they would prepare. In combination, these measures capture the respondent's orientation towards and behavioral contributions to the working group.

Next, in "Commitment" (Article E), steps 4 and 5 in the survey flow are in focus. When the employees have completed the meetings in step 3 (0 to 5 dependent on their choices), they are told that Anne will return to clarify the future for the working group. To capture Anne's return, the respondents are randomly shown one of five videos in which the common theme is the termination of the leadership initiative (step 4).

The five videos offer different explanations for the termination and generally capture different presentational strategies that a public leader can resort to when it is not possible to follow up on stated intentions. In the control group, Anne keeps a low profile by simply stating that the collaboration ends and proceeds to describe how the respondent has been a part of the collaboration (a strategy called "keeping a low profile"). The next two videos show Anne taking responsibility for the decision by stating that it is her decision ("taking responsibility") and making an argument as to why she decided to terminate the collaboration ("taking responsibility and providing an argument"). The two final videos focus on blaming the local politicians for the decision while expressing opposition ("blaming the principal") and borrowing and supporting an argument from the local politicians concerning the termination ("borrowing the principal's reasoning"). All videos lasted around 20 seconds, contained around 40 words, and the actress behaved similarly in terms of tone, charisma, and body language. After watching the video (step 5), Anne's leader credibility as well as the respondent's collaborative engagement are measured in two single-item measures.

In both articles, regression analysis is used to model the effects of transversal leadership and presentational strategies on collaborative engagement and leader credibility. To clarify, the main independent variable in "Commitment" (Article E) is presentational strategies, not transversal leadership. However, the article still provides two important insights into leadership regarding transversal collaboration. First, transversal leadership is explicitly modelled as an interaction term in the analyses (although it is called leader investment in the article), which yields important insights into how initial transversal leadership can influence employees after the cancellation of a collaborative initiative. Second, the insights into how presentational strategies influence leader credibility are generally valuable for understanding transversal leadership as they shed light on the importance of leaders' commitment to shared tasks, and specifically how potentially damaging it can be to deviate.

3.3 Research Criteria: Strengths and Weaknesses

Every methodological choice has consequences for conclusions and takeaways. This means that each article has some strengths and weaknesses that

must be accounted for. However, when I combine different methodological approaches, balancing different research criteria across the dissertation as a whole is a main aim.

In the measurement articles (A and B), reliability and validity are important. In terms of validity, construct, content, face, and criterion are in focus. For both articles, face validity is assured by considering established typologies and related concepts. Further, a series of pilot tests and iterative updates means that the final list of items are curated to fit the intended theoretical constructs as closely as possible. When developing and validating measurement scales, it is important to strike a balance between theoretical and empirical judgments (Wieland et al., 2017). The reliability and measurement validity are further evaluated empirically in order to show the scales' usefulness (see section 4.1 and 4.3.1).

For the empirical studies (Articles C, D, and E), internal, external, and ecological validity are all important. There will typically exist a trade-off between them, however. As noted by Wright and Grant (2010), the choice of research design usually entails a trade-off among (1) the ability to make causal statements, (2) the ability to generalize those statements to other settings, and (3) the ability of a broader audience to apply them directly. The field experiment (Article C) mainly focuses on ecological and external validity as the intervention is as close to reality as possible. It also focuses partly on internal validity due to the experimental setup, but it was not possible to assess the actual effects of leadership training on leadership behavior as it would entail observing the leader's actions in-between training sessions, meaning that I only have intention-to-treat estimates. Contrary, in the survey experimental articles, internal validity is at the front at the expense of, especially, ecological validity due to the scenario-based design, which is not necessarily consistent with real-life collaboration. Ecological validity was prioritized in codeveloping the scenario-based approach together with an occupational therapists' union in an attempt to mitigate the potential deficiencies.

By combining the approaches and insights from the articles, it is possible to draw causal, reliable, and valid (internal, ecological, and external) conclusions about transversal leadership, collaborative engagement, collaborative self-efficacy, and interorganizational coordination in relation to transversal collaboration. Future research is needed to dig deeper into the relationships I investigate, supplement with additional important variables, broaden the context to other sectors and organizations, and employ, for example, more qualitative approaches in order to assess the relevant mechanisms in depth.

Chapter 4.
Main Findings

After the overview of theory and methods in the previous chapters, I present the main findings of the dissertation in this chapter. I use the research questions to guide the presentation: What is transversal leadership? To what extent does transversal leadership influence collaborative engagement and interorganizational coordination? How does self-efficacy act as a mechanism to the influence of transversal leadership? The research questions structure the chapter in three overall sections.

In section 4.1, I focus on the question "what is transversal leadership?" Based on the conceptualization in section 2.2.1, I present the analyses used to develop and validate the measurement scale in "Leadership" (Article A). Next, I provide qualitative insights from "Training" (Article C) about the leaders' experiences from attending the leadership training. Finally, I use insights about the effects of transversal leadership on leader credibility from "Commitment" (Article E) to bring nuance to the process of sustaining transversal leadership over time. In section 4.2, I present the analyses clarifying to what extent transversal leadership influences employees' assessments of interorganizational coordination. Again, I draw on the qualitative material in order to understand how leadership training can affect coordination. In section 4.3, I present the analyses capturing the effects of transversal leadership on collaborative engagement, assess whether collaborative self-efficacy acts as a mechanism linking the influence of leadership to collaborative engagement, and look into the interaction effects between transversal leadership and presentational strategies on collaborative engagement when terminating a collaborative leadership initiative. In section 4.4, I summarize the main findings and address the research questions.

4.1 Measuring, Fostering, and Sustaining Transversal Leadership

Transversal leadership is defined as leadership behavior seeking to direct, align, and commit the leader's employees towards shared tasks with actors outside their own managerial jurisdiction. Based on the definition, I expect a first- and second-order reflexive measurement model with three dimensions (direction, alignment, and commitment), where each dimension is captured by three items, respectively, and collectively capture transversal leadership as the latent construct. Table 4.1 shows the items and their distribution. See

"Leadership" (Article A) for a detailed description of the process of developing items.

Table 4.2 shows the exploratory factor analyses for both frontline managers and frontline employees. For both groups, only one factor with an eigenvalue greater than 1 was extracted following the criterion from Kaiser (1960). All nine items showed high loadings (> .75) on this factor. The theoretical expectation was that the items would load on three distinct factors representing the theoretical dimensions of transversal leadership (direction, alignment, and commitment). However, it is not necessarily surprising that the items loaded on the same factor since the dimensions are interconnected and should be seen as a cohesive entity, meaning that transversal leadership is manifested when a leader engages in all three activities simultaneously. The factor analysis did not warrant the exclusion of any items; hence, I include all nine items in subsequent analyses.

Next, I performed confirmatory factor analyses (see Figure 4.1) to assess how well the measurement scale for transversal leadership fits the expected model. Empirically, the exploratory factor analysis lends support to a one-dimensional model, but theoretically, I expect a better model fit for the three-dimensional model. When the model is investigated as three-dimensional, the first- and second-order reflexive theoretical understanding becomes apparent. Here, I examined how well the three items load on their expected leadership dimension and how well the three leadership dimensions load on the latent transversal leadership construct. Figure 4.1 shows that the nine items load as expected on their respective dimensions and that the three dimensions of transversal leadership behaviour are reflected to a high degree from the second-order transversal leadership construct with loadings above .90.

Table 4.1. Item distribution for transversal leadership

	Item number and wording	Frontline managers			Frontline employees		
		Obs.	Mean (SD)	Min-max	Obs.	Mean (SD)	Min-max
Direction	1 When the job involves other wards/units, my leader ensures that we are working in line with the shared goals	546	3.76 (.036)	1-5	3,293	3.56 (.015)	1-5
	2 My leader clearly communicates that our ward/unit has to collaborate with other wards/units in order to succeed	546	4.06 (.036)	1-5	3,295	3.89 (.016)	1-5
	3 When our job spans across wards/units, my leader supports that the direction is aligned with our collaborators	543	3.76 (.036)	1-5	3,286	3.59 (.016)	1-5
Alignment	4 My leader makes sure that we have the necessary opportunities for coordinating across wards/units	543	3.57 (.039)	1-5	3,284	3.49 (.016)	1-5
	5 My leader contributes to us having clear guidelines for the collaboration across wards/units	534	3.61 (.038)	1-5	3,219	3.57 (.016)	1-5
	6 My leader helps us to coordinate responsibility of cross-cutting tasks with other wards/units	534	3.64 (.039)	1-5	3,215	3.56 (.016)	1-5
Commitment	7 No matter how difficult it is, my leader stands by our collaboration with other wards/units	534	3.85 (.038)	1-5	3,203	3.68 (.016)	1-5
	8 My leader takes ownership of the shared core task when we work across wards/units	534	3.93 (.039)	1-5	3,194	3.67 (.016)	1-5
	9 My leader explicitly expresses the great value of us collaborating with colleagues from other wards/units	533	4.06 (.035)	1-5	3,199	3.79 (.016)	1-5

Table 4.2. Exploratory factor analyses: Transversal leadership measurement scale

	Item number and wording	Frontline managers			Frontline employees		
		Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Direction 1	When the job involves other wards/units, my leader ensures that we are working in line with the shared goals	.8265	-.2077	-.0805	.7933	-.0945	-.1370
2	My leader clearly communicates that our ward/unit has to collaborate with other wards/units in order to succeed	.8223	.2076	-.1483	.7962	.1557	-.1753
3	When our job spans across wards/units, my leader supports that the direction is aligned with our collaborators	.8769	-.0511	-.1602	.8509	-.0737	-.1439
Alignment 4	My leader makes sure that we have the necessary opportunities for coordinating across wards/units	.7955	-.1578	-.0882	.8448	-.1090	-.0703
5	My leader contributes to us having clear guidelines for the collaboration across wards/units	.8058	-.1767	.0341	.8387	-.1046	.1385
6	My leader helps us to coordinate responsibility of cross-cutting tasks with other wards/units	.8341	-.1166	.1973	.8336	-.0804	.1784
Commitment 7	No matter how difficult it is, my leader stands by our collaboration with other wards/units	.8509	.0257	.1782	.7824	.1803	.1336
8	My leader takes ownership of the shared core task when we work across wards/units	.8490	.1772	.0503	.8148	.1945	.1023
9	My leader explicitly expresses the great value of us collaborating with colleagues from other wards/units	.7633	.3386	.0221	.7599	.3103	-.0145

Note: Factor loadings extracted using PFA, oblimin rotation. Only coefficients of > .40 are highlighted in bold. The order of the items is randomized. Responses are measured on Likert-scales ("Not at all," "A little," "To some degree," "Often," "Mostly"). N = 1,785 employees, 292 frontline managers.

Figure 4.1. Confirmatory factor analyses: Transversal leadership measurement scale

Frontline managers

Employees
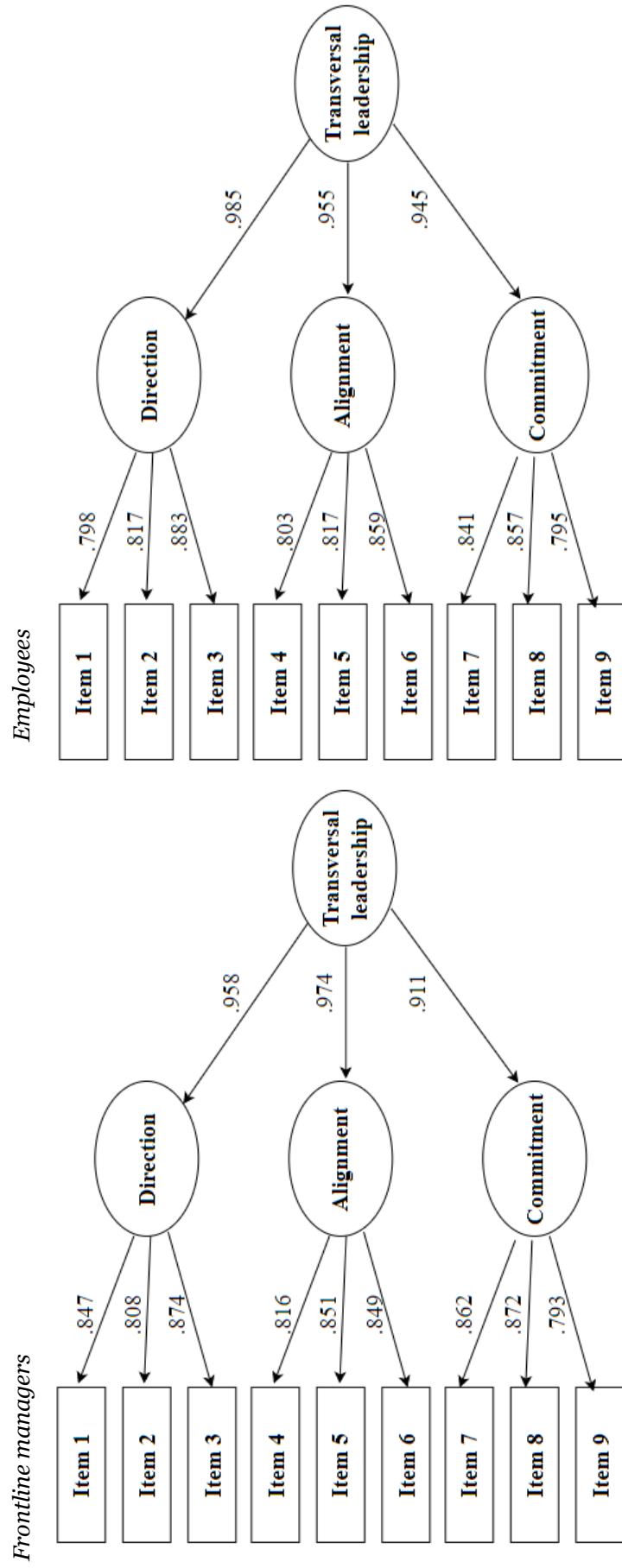
Note: Factor loadings extracted using SEM. Sartorri-Bentler adjusted standard errors.

I also ran the one-dimensional factor analyses to compare with the three-dimensional, and Table 4.3 reports the fit statistics (RMSEA, CFI, TFL, and SRMR) for both. The model fits are generally satisfactory (Acock, 2013; Hu & Bentler, 1999) apart from RMSEA in both one-dimensional models, and they are generally best for the three-dimensional models among both frontline managers and frontline employees.

Table 4.3. Fit statistics from confirmatory factor analyses

	Middle managers		Employees	
	One dimension	Three dimensions	One dimension	Three dimensions
RMSEA	.092	.071	.097	.065
CFI	.956	.977	.942	.976
TLI	.941	.965	.922	.965
SRMR	.039	.031	.039	.027
Df	27	24	27	24
N	298	298	1,794	1,794

Note: Fit statistics based on SEM-models. Sartorri-Bentler adjusted standard errors.

The high factor loadings for most items and the better model fit in the three-dimensional model underline that the three leadership behaviours—promoting and sustaining a shared direction, securing alignment, and promoting commitment—can be understood as somewhat distinct as theoretically expected. Generally, though, the consistency in factor loadings between the one- and three-dimensional models implies that the three dimensions also can be understood as integral to the latent notion of transversal leadership. Next, I assess the reliability and validity of the three-dimensional measurement scale.

Table 4.4. Reliability and correlations for transversal leadership

	Cronbach's alpha	M (SD)	(1)	(2)	(3)	(4)	(5)
(1)	.946	3.31 (.753)					
(2)	.876	3.30 (.799)	.934***				
(3)	.886	3.30 (.826)	.937***	.824***			
(4)	.871	3.22 (.803)	.920***	.781***	.792***		
(5)	.937	3.50 (.936)	.719***	.675***	.691***	.643***	
(6)	.852	3.39 (.975)	.308***	.284***	.286***	.290***	.252***

Note: ***$p<0.001$. M = mean, SD = standard deviation, (1) = transversal leadership, (2) = direction, (3) = alignment, (4) = commitment, (5) = transformational leadership, (6) = distributed leadership.

Table 4.5. Validity for transversal leadership

	Social capital	Job satisfaction	Burnout
Transversal leadership	.4411***	.4894***	-.2983***
Direction	.3983***	.4417***	-.2661***
Alignment	.4358***	.4824***	-.2943***
Commitment	.4048***	.4513***	-.2774***
Transformational leadership	.3318***	.4543***	-.2646***
Distributed leadership	.1511***	.1941***	-.1064***

Note: ***p<0.001.

Tables 4.4 and 4.5 show that the three-dimensional measurement scale is both reliable and valid. In terms of reliability, Cronbach's alpha is larger than the .7 threshold for both the combined measure of transversal leadership and for each of the three dimensions. The correlations between the dimensions are relatively strong, which underpins that transversal leadership entails behavior on all three dimensions simultaneously. In terms of validity, the scale shows convergent validity by correlating relatively strongly with transformational leadership (.719) and less strongly with distributed leadership (.308). It shows criterion validity as it correlates positively with bridging social capital and job satisfaction, and negatively with burnout. Lastly, it shows discriminant validity by not correlating with presumably unrelated variables such as number of years since the employees were fully trained, number of years at the same workplace, and whether the employee works part-time or full-time.

However, the test of internal validity (convergent and discriminant) among the three dimensions of transversal leadership found in "Leadership" (Article A) challenges the three-dimensional understanding. The test consists of comparing the average variance extracted (AVE) for each dimension and their squared correlations with each other (Fornell & Larcker, 1981; Kline, 2015). Convergent validity is found, as the AVE-scores for each dimension are larger than .5. However, there are issues with discriminant validity because the squared correlations between the dimensions are all larger than the AVE. This means that the three dimensions are more alike than different, which does not correspond to the theoretical expectations about three distinct dimensions. In sum, transversal leadership should be understood as a one-dimensional construct, which is corroborated by the strong similarities between the one- and three-dimensional confirmatory factor analyses found in "Leadership" (Article A).

Fostering and sustaining transversal leadership

Having developed and validated the scale to measure transversal leadership, I now assess how transversal leadership can be fostered and sustained. This part builds on the interviews in "Training" (Article C) and the analyses of leader credibility in "Commitment" (Article E), which highlight potentially important boundary conditions for practicing transversal leadership, namely the importance of leadership development and commitment in relation to collaborative initiatives.

In terms of leadership development through participation in the training program, one participating leader highlighted the value of sharing workspace and setting clear and shared goals: "We have a common task, a shared budget responsibility […] If a patient slips away, it doesn't matter whether it's from neurosurgery or orthopedic surgery, we each still pay a percentage [to the private hospital], so we have a clear common interest in getting things accomplished." In the same team of leaders, it was further underlined that they experienced challenges with capacity for patients in one unit, and that the training program proved "a welcome opportunity [to realize] that the other unit had available resources that we could utilize, that we can actually help each other." Similarly, a participating leader from a different team mentioned the importance of having a shared direction and allowing each other to lead across units: "The concept of leading across departments, understanding each other's prerequisites, and not closing ourselves off in our own department, it's actually really important that we lead across. One day we talked a lot about … setting a course and direction, and how to do it with a group of employees, and … create legitimacy, but also understanding, I often still use that."

The training program also accentuated that there are many barriers to efficient collaboration: "We already know that, but it becomes very visible when suddenly faced with a very specific task, where we say, now we have to do this, so we can show afterwards what we've achieved. So, you can say, it [the training] confirms how difficult this actually is, and, in such complex organizations like this, how difficult it is to make changes in real life." In terms of overcoming barriers, another leader emphasized the importance of sharing knowledge and insights: "What was most interesting was actually hearing a bit about the other teams that were there. It was, I mean, the teaching was also really good, but the way you get a little leadership inspiration from how the others work, and it was both the 'oh my god, I should never talk to anyone like they talked to each other'." In combination, the interviews with the participating leaders underline that the training highlighted the importance of having a shared space to discuss, specifying a shared direction, agreeing on shared goals, overcoming barriers to efficient collaboration, and ensuring knowledge exchange.

These takeaways provide valuable insights about developing and sustaining transversal leadership.

Leader credibility is another factor that, expectedly, can influence whether public leaders are able to sustain transversal leadership over time. The findings from "Commitment" (Article E) reveal that exerting high transversal leadership has a positive effect on public employees' perceptions of their leader's credibility. This is important because leader credibility plays a crucial role in effective leadership (Gabris, 2004; Kouzes & Posner, 2011; Yukl, 2013) as it influences employees' responsiveness to leadership (Dull, 2009; Gabris & Ihrke, 2000; Jakobsen et al., 2022, p. 1). When public leaders are perceived as credible by their employees, it fosters trust in their words, intentions, and actions (Grant & Sumanth, 2009) and thereby support for their messages and future initiatives (Men, 2012). Thus, public leaders seeking to bolster their credibility, especially in the context of collaborative initiatives, should prioritize vocal and explicit support.

However, it was also generally clear that terminating leadership initiatives is costly for public leaders in terms of their credibility, especially when they showed high transversal leadership at first. Hence, investing more strongly in an initiative can be interpreted as raising the stakes, which, by default, comes with certain risks. These risks materialize in the form of significantly lower credibility assessments when the initiative is terminated after a high initial investment. It is especially costly for public leaders to "take responsibility" and "provide arguments" for the termination after a higher initial investment, which generally means that if a public leader resorts to presentational strategies that explicitly point the blame for the decision at the leader herself, then employees penalize the leader more in terms of leader credibility. In comparison, "blaming the principal" (local politicians) and not supporting their decision does not have the same negative effect.

Thus, the overall takeaway from "Commitment" (Article E) in terms of understanding transversal leadership in relation to transversal collaboration is that temporal dynamics are important, meaning that what public leaders promise today and do tomorrow will influence how their employees assess them in two days and, expectedly, how the employees react to collaborative initiatives in the future. Specifically, these insights speak to the importance of public leaders' commitment to collaborative initiatives if they are to sustain a credible foundation for practicing transversal leadership now and in the future.

4.2 The Influence of Transversal Leadership on Interorganizational Coordination

The next question concerns how transversal leadership influences interorganizational coordination. In "Training" (Article C), it was assessed whether attending a training program aimed at increasing transversal leadership affects assessments of interorganizational coordination (relational coordination and structural coordination mechanisms). Overall, attending transversal leadership training is expected to result in more positive assessments of relational coordination and structural coordination mechanisms, which was tested among the participating leaders, their frontline managers, and their frontline employees.

Figure 4.2. Difference-in-difference analysis: Relational coordination
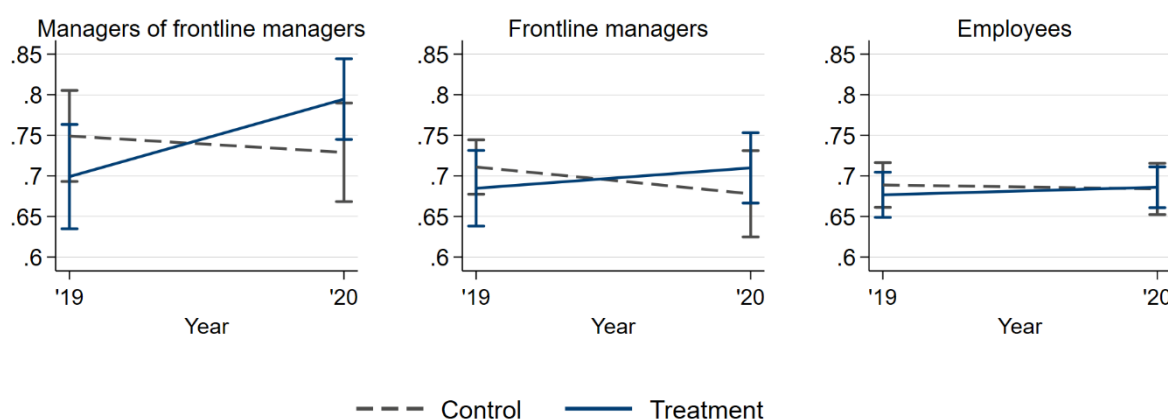
Figure 4.2 shows the difference-in-difference analyses graphically for relational coordination across the three groups. It shows positive and significant effects among the participating leaders and their frontline managers but no effects among the frontline employees. For the participating leaders, the effect size (.118) indicates that they assess the relational coordination with their collaborator as improved by 11.8 percentage points compared to the leaders in the control group. For the frontline managers, the same difference is 6.5 percentage points. Both effects underscore that transversal leadership training constitutes an efficient tool to improve relational coordination, which has been shown to increase collaborative performance (Bolton et al., 2021). The lack of an effect among the frontline employees indicates that it is difficult to ensure diffusion of training effects vertically in public organizations. This finding is consistent with similar studies of vertical dispersion of leadership (Yammarino, 1994; Yang et al., 2010).

Figure 4.3. Difference-in-difference analysis: Structural coordination mechanisms
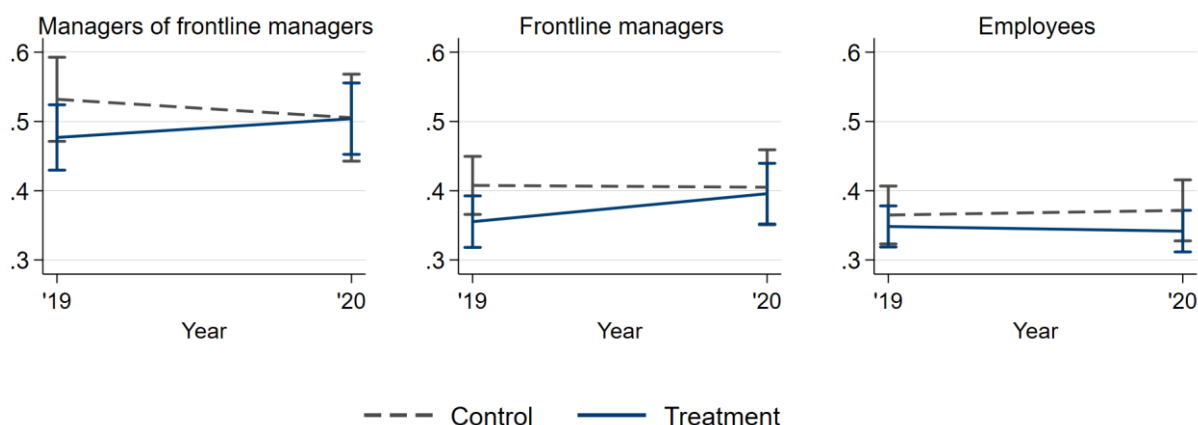
Next, Figure 4.3 shows whether the leadership training improves the assessments of the structural coordination mechanisms across the three groups. There is a weak significant effect (p-value < .10) for the frontline managers, but no effects for participating leaders and frontline employees. The effect size for the frontline managers is .055, which indicates a 5.5 percentage points improvement compared to the control group. Analyses of the separate structural coordination mechanisms found in "Training" show that the effects are particularly prevalent for "shared daily work activites" and "shared procedure descriptions". Thus, it seems that the training program was particularly succesful in terms of establishing and/or clarifying the existence of useful structural coordination mechanisms (work activities and procedure descriptions) focused on aligning and securing cohesion in the collaborative processes. Given the healthcare setting of the article, the stronger effect for and focus on work activities and procedure descriptions seems plausible as most transversal collaboration among hospital units involves the units' ability to manage and align patient flows and treatments.

A potential reason why the participating leaders do not assess the coordination mechanisms to be improved is that they already assessed them as being prevalent and well-functioning before the training program started. Attending the training program has, in this case, given them tools to clarify this to the frontline leaders. The lack of an effect among the frontline employees again indicates that it may be difficult to ensure diffusion of training effects across hierarchical layers.

Besides interorganizational coordination, it was also estimated whether attending transversal leadership training influences the assessment of the collaboration's overall quality. Here, it showed positive and significant effects (14 percentage points) among the participating leaders, but no effects for frontline leaders or employees. Overall, the analyses of attending transversal

leadership training show significant and positive effects on relational coordination (for the participating leaders and their fronline managers), on structural coordination mechanisms (for frontline managers), and on the collaborative quality (for participating leaders). For frontline employees, there are no signicficant effects. In combination, the results indicate that transversal leadership trainging can be a fruitful tool to strengthen transversal collaboration across organizations and organizational units but that the strength of the effects decreases as hierarchical diffusion increases. For the employees to experience improvement in transversal collaboration, a stronger treatment or more time might be necessary.

Experiences from attending the training program

To gain a deeper understanding of when and how attending transversal leadership training influences interorganizational coordination, I draw on the interviews from "Training". One participating leader emphasized that the programme helped to build a collaborative culture across the units: "In the past, it was a bit more like we closed ourselves off, we protected what we had, we didn't share. Now there's a completely different culture among all of us that we don't care so much about that. We see the patient group more as a shared task than we did before." Building a collaborative culture was further supported by actively searching out information about and experiencing the collaborator's daily operations: "I have visited the emergency department just to understand […] and I became MUCH wiser that day. A one-day visit. It's one of those things … 'Why on earth haven't you done this before?' And being curious about someone else's work. And now I know why it goes wrong." A medical director from a hospital stresses a similar point: "Instead of writing back and forth between the chief physicians, and then finally the chief physician from the emergency department having to go down and 'sell it to their staff', they have managed in several instances to say, 'well, this is what we stand for together', and then they have gone down together and presented it at a medical meeting or a morning conference."

Attending the training and working with the tools inbetween training sessions also provided a steppingstone to innovate the structural coordination mechanisms. A participating leader clarifies: "We have initiated a collaboration with the spinal center in the municipality, which we otherwise might not have done, because suddenly we saw some data about the way patients were moving, it turned out to be completely different from what we thought, and that made us realize that we could gain something by doing things differently." Another theme was letting employees visit other units, which highlights the importance of cross-boundary functions and sharing

knowlegde: "We've had some of their staff over with us and some of ours over with them. And we actually plan to continue with that." Similarly for new employees: "All newly hired doctors come for a visit to the RT: All new hires in the emergency department come to us for half a day … So we have seen them face to face, and they see how we work, and then they have a better understanding of why we ask clarifying and critical questions." When the employees visit other departments, they get a different perspective on the dialogue, processes, and an understanding of why in-depth discussions are sometimes necessary. The interviews hightlight how trust and respect grew from attending the leadership training, and that actively working to improve the structural coordination mechanisms can improve collaboration for both leaders and employees.

Attending the training was, however, not a success for all participating leaders. One team eventually decided to withdraw from the program, which was the result after several issues proved too hard to change. One of the leaders said: "It is difficult to change anything in this group. To be honest, it's a group of men in their prime just running a mildly dysfunctional marriage for 25 years. […] So we don't change anything over there. We don't do that, and neither do they themselves," and followed up with: "There is nothing over there where I think 'let me get to the plate'. We feel good. And we feel that if people, doctors, want to create a stronger collaboration, then it is because they want a piece of the cake, of our good cake." The other leader said: "We let the patients manage our activity, they mean more the other way around, that the patients are almost there for the staff," and followed up with: "They are the ones who set the agenda. […] We are very much in favor of the fact that we are here for the sake of the patients. That is our core task, and indeed it should be everyone's core task here at the hospital." Collectively, these insights highlight how cultural differences as well as a lack of respect for other's professional aptitude, lack of shared resources, and lack of agreeing on a shared direction can undermine transversal collaboration. This further underlines that team-based transversal leadership training is not a panacea that always works as intended.

4.3 The Influence of Transversal Leadership on Collaborative Engagement

In the previous two sections, I established the measurement scale for transversal leadership, assessed how transversal leadership can be trained collectively, and argued that temporal dynamics regarding leader credibility are important for public leaders' ability to exhibit and sustain transversal leadership. Further, I showed that attending transversal leadership training can

strengthen the participating leaders' and their frontline managers' assessments of interorganizational coordination. To get closer to understanding the employees' contributions, I now present the main results from the analyses on the effect of transversal leadership on collaborative engagement.

First, I lay out the direct effects of transversal leadership from "Behavior" (Article D). In section 4.3.1, I assess the mediation analyses focusing on collaborative self-efficacy as a potential mechanism linking the influence of transversal leadership to collaborative engagement. Here, I also present the development and validation of the measurement scale for collaborative self-efficacy. In section 4.3.2, I delve into the interaction analyses from "Commitment" (Article E) in order to assess how employees' collaborative engagement is influenced by a combination of transversal leadership and different presentational strategies, when a public leader terminates a collaborative leadership initiative.

In Table 4.6, I evaluate the direct effects of transversal leadership from "Behavior" (Article D) and observe that high transversal leadership significantly influences collaborative engagement compared to low transversal leadership. On average, the respondents who were exposed to the high transversal leadership vignette continued for .709 meetings longer, which indicates a 22 percent increase compared to low transversal leadership (model 1). Similarly, they spent on average 18.47 seconds more preparing for the meetings (model 2). Compared to the low transversal leadership group, this equals an increase of around 35 percent in time spent. Finally, for writing in the textboxes (model 3), we see a marginally significant positive coefficient at the ten percent level (p-value = .063) suggesting that transversal leadership may have some potential in strengthening employees' behavioral contributions, although not as strongly as for attending meetings and allocating time.

In total, these results underscore a substantial impact of transversal leadership in terms of increasing employees' engagement towards transversal collaboration. The writing measure is a more conservative test of collaborative engagement as it captures something closer to *actual* behavior, and therefore it might be less influenced by experimental treatments, hence explaining the absence of stronger positive effects in this model.

Table 4.6. Direct effects of transversal leadership on collaborative engagement

	Model 1: Number of prepared meetings				Model 2: Average time spent per meeting				Model 3: Writing what to prepare			
	B	P	SE	95% CI	B	SE	P	95% CI	B	P	SE	95% CI
Transversal leadership (1 = high)	.709***	.000	.161	.393–1.02	18.47**	6.59	.005	5.52–31.41	.362†	.063	.194	-.019–.742
Controls												
Public Service Motivation	.122	.323	.122	-.120–.363	18.79***	5.04	.000	8.88–28.69	.585***	.000	.148	.294–.876
Occupational Self-efficacy	.415**	.002	.136	.148–.682	-3.68	5.58	.509	-14.64–7.27	.139	.394	.164	-.182–.462
Job satisfaction	-.082	.218	.066	-.211–.048	9.37**	.271	.001	4.05–14.70	.258**	.001	.079	.102–.415
Gender (1 = female)	.437	.181	.326	-.204–1.08	35.49**	13.37	.008	9.22–61.76	.894*	.023	.393	.121–1.67
Age	.024*	.013	.010	.005–.042	.550	.390	.159	-0.21–1.31	.027*	.020	.011	.004–.049
Tenure in position	-.029*	.037	.014	-.055–.002	.054	.559	.923	-1.04–1.15	.029†	.084	.016	-.003–.061
Administration (1 = health/eldercare)	.130	.200	.516	-.263–.523	9.52	8.21	.247	-6.62–25.66	.242	.317	.241	-.233–.717
Constant	.401	.624	.817	-1.20–2.01	-139.6**	33.59	.001	-205.6–-73.6	-5.74**	.001	.987	-7.68–-3.80
Observations	462				462				462			
Adj. R-squared	.1833				.1845				.2004			

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$.

4.3.1 Collaborative Self-efficacy as a Potential Mechanism

The next question concerns collaborative self-efficacy as a potential mechanism linking the influence of transversal leadership to collaborative engagement. Again, "Behavior" (Article D) is the starting point. However, before evaluating the mediation hypothesis, it is necessary to establish the measurement scale for collaborative self-efficacy. See "Self-efficacy" (Article B) for more information about the development and validation of the scale.

Collaborative self-efficacy is defined as an individual's beliefs in own capability to contribute to collaborative processes and ends. Collaborative processes and ends include both formal and informal interaction, shared rules, structures, norms, and building reciprocity. Table 4.7 displays the content and the distribution of the 12 items used to capture the concept's four dimensions: taking initiative, building relations, managing structures, creating value. To establish the measurement scale, exploratory factor analyses (EFA) were conducted as shown in Table 4.8. The results reveal reasonable loadings and four factors with eigenvalues above the 1.0 criterion, so all 12 items were retained for subsequent analyses. This is slightly below the four-six items per dimension recommended by Hinkin (1998), but I prioritized the practical aspect of future survey lengths (Vogel & Werkmeister, 2021) and made sure that the inclusion of items in the CFA was a result of both statistical criteria and substantive judgement based on the theoretical framework (Wieland et al., 2017).

Next, confirmatory factor analysis (CFA) is used to assess whether the first- and second-order reflexive measurement model holds. Figure 4.4 illustrates significant factor loadings for all items and first-order dimensions with coefficients ranging from .583 to .896. Further, the CFA-model fit indices found in "Self-efficacy" (RMSEA =. 052, CFI = .926, TLI = .913, SMRM = .08) indicate an acceptable fit (Acock, 2013; Hu & Bentler, 1999), which supports the four-dimensional and two-level understanding of collaborative self-efficacy. Skewness in item distributions led to the use of Sartorra-Bentler correction for standard errors to address concerns from a non-standard distribution (Hu & Bentler, 1999).

Table 4.7. Item distribution for collaborative self-efficacy

|	Item number and wording: Introductory sentence: "When I am collaborating with others…"	Obs.	Mean (SD)	Min-max
Initiative	1 … it is difficult for me to take initiative to solve shared tasks	575	3.98 (.79)	1-5
	2 … it is easy for me to engage actively in shared tasks	575	4.10 (.76)	1-5
	3 … it is easy for me to come up with creative solutions	575	3.72 (.83)	1-5
Relations	4 … it is easy for me to see things from their perspective	571	3.99 (.76)	1-5
	5 … it is difficult for me to compromise if I think I am right	569	3.11 (.95)	1-5
	6 … it is difficult for me to build respectful relations	570	4.20 (.85)	1-5
Structures	7 … it is easy for me to overcome challenges related to us coming from different [placeholder 1] (for example, in relation to professional priorities and norms)	561	3.61 (.81)	1-5
	8 … it is difficult for me to contribute to boundary crossing functions (for example, shared workings groups)	562	3.70 (.79)	1-5
	9 … it is difficult for me to handle challenges related to differences in formal structures (for example, in relation to geography, economy, and law)	559	3.44 (.88)	1-5
Value creation	10 … I can solve complex working tasks better than on my own	554	4.26 (.87)	1-5
	11 … I can offer the best possible service for the [placeholder 2]	557	4.44 (.65)	2-5
	12 … I can increase the efficiency in my daily work	556	4.34 (.73)	1-5

Note: The same introductory sentence—"When I am collaborating with others …"—is used for all items. In the introductory text, it is made clear that "others" include individuals outside one's own organizational unit (i.e., other organizational units or organizations). Placeholder 1 captures organizational level, and placeholder 2 captures the service recipients (here, patients).

Table 4.8. Exploratory factor analysis: Collaborative self-efficacy measurement scale

Item number and wording: Introductory sentence: "When I am collaborating with others…"	Factor 1	Factor 2	Factor 3	Factor 4
Initiative				
1 …it is difficult for me to take initiative to solving shared tasks	-.0055534	**.7214867**	.0733327	.1240484
2 …it is easy for me to engage actively in shared tasks	.1890789	**.694132**	.0082947	.0115362
3 …it is easy for me to come up with creative solutions	-.0960027	**.7919592**	.0017439	-.1145906
Relations				
4 …it is easy for me to see things from their perspective	-.0199827	.1813704	.0747271	**.6918717**
5 …it is difficult for me to compromise if I think I am right	-.0181	-.1303693	-.0167588	**.8127841**
6 …it is difficult for me to build respectful relations	.0736235	.2858314	-.0369613	**.797453**
Structures				
7 …it is easy for me to overcome challenges related to us coming from different [placeholder 1] (for example, in relation to professional priorities and norms)	.0577653	-.1738898	**.7399249**	.0412087
8 …it is difficult for me to contribute to boundary crossing functions (for example, shared workings groups)	.0533782	.198769	**.7889278**	.0413585
9 …it is difficult for me to handle challenges related to differences in formal structures (for example, in relation to geography, economy, and law)	-.0551491	.02981	**.8245636**	-.0554398
Value creation				
10 …I can solve complex working tasks better than on my own	**.7857465**	-.0338516	.0408409	.0508311
11 …I can offer the best possible service for the [placeholder 2]	**.8332737**	.0747575	-.0225713	.0212755
12 …I can increase the efficiency in my daily work	**.8965163**	-.038127	.0014304	-.0640612

Note: Oblimin rotation. Cronbach's alpha is 0.76. Bold loadings represent factor loadings > .40. n = 274. All items are scaled 1-5, and negative items (1, 5, 6, 8, 9) are reversed.

Figure 4.4. Confirmatory factor analysis: Collaborative self-efficacy measurement scale
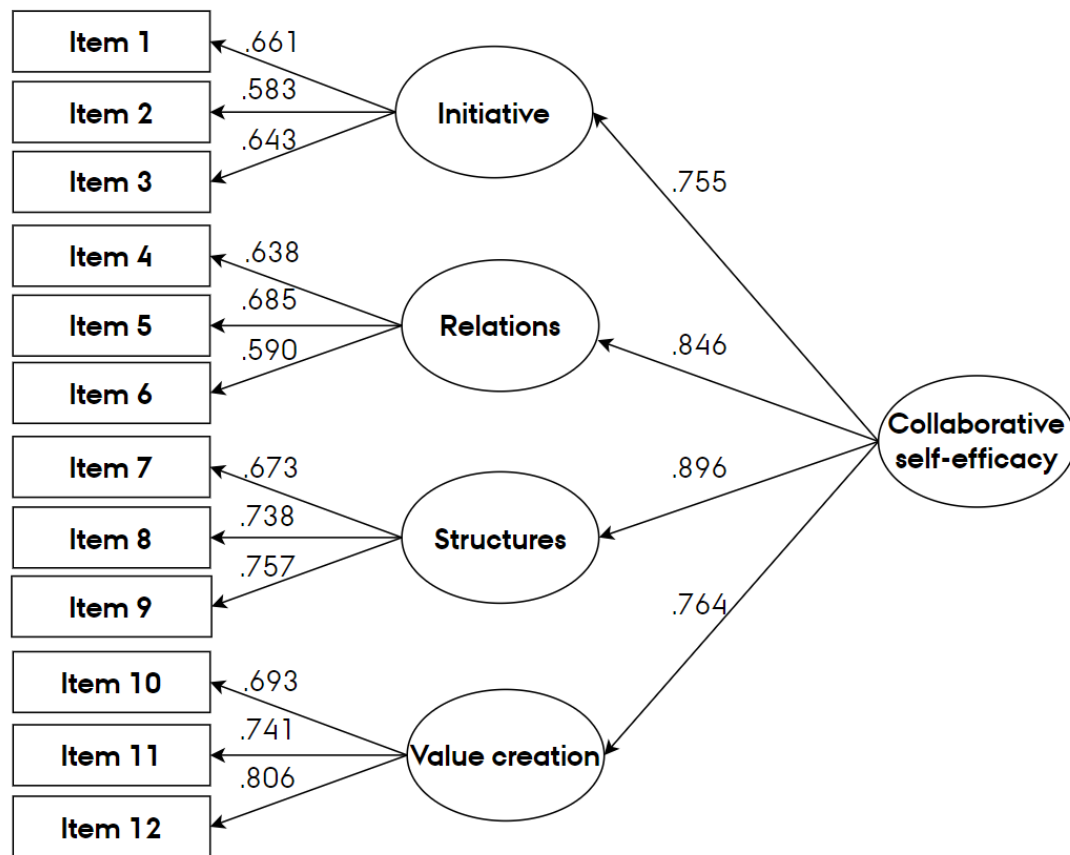
Note: Standardized coefficients with Sartorra-Bentler corrected standard errors. All coefficients are significant at a 0.001 level. n = 266.

Table 4.9. Reliability and correlations for collaborative self-efficacy

		Cronbach's alpha	Mean (SD)	1	2	3
	Collaborative self-efficacy	.7350	3.90 (.040)			
1	Initiative	.7462	3.96 (.604)			
2	Relations	.6909	3.76 (.577)	.3121***		
3	Structures	.6820	3.59 (.610)	.3671***	.2481***	
4	Value creation	.7925	4.33 (.636)	.2417***	.2106***	.2445***

Note: 1-5 scale, ***p < 0.01, **p < 0.05, *p < 0.1.

In sum, the CFA provides support for the four-dimensional and two-level understanding of collaborative self-efficacy. Next, it is relevant to assess the scale's reliability and measurement validity. In terms of internal reliability

(Cronbach's alpha), Table 4.9 shows that all four dimensions perform adequately with levels around the .7 threshold. The dimensions show averages between 3.59 and 4.33 on a scale from 1-5 and are all somewhat left-skewed. Further, all four dimensions are significantly correlated, which is as expected due to the reflexive nature of the concept. The measurement scale shows measurement validity as well (see "Self-efficacy" for analyses). Convergent validity is established by finding the expected correlation with PSM, agreeableness, and extraversion. Criterion-related validity is established by seeing the expected correlation with perceived inclusion in distributed leadership, psychological safety, and collaborative intentions. Discriminant validity is found by finding no relation to age, feelings of occupational security, and preferences for work-life balance.

Generally, the collaborative self-efficacy scale demonstrates reliability as well as convergent, criterion, and discriminant validity, but it is also necessary to evaluate the internal validity among the four dimensions in order to ensure its usefulness. This is again construed by comparing the average variance extracted (AVE) for each dimension and their squared correlation with each other (Fornell & Larcker, 1981; Kline, 2015). Convergence is plausible as the 12 items and four dimensions reflect the same latent theoretical construct, but discriminant validity is similarly required to demonstrate that each dimension is distinct and provides value to the scale. I find support for both convergent and discriminant validity, except the *structure* dimension, which is not fully separable from *initiative*. However, this is a conservative test (Fornell & Larcker, 1981), and because the values are somewhat similar in size, this is not considered an immediate concern. Based on these results, it is possible to apply the 12-item scale to understand collaborative self-efficacy in both the mediation analysis from "Behavior" (Article D) and in future research in general.

After having established and validated the measurement scale for collaborative self-efficacy, I assess how it influences collaborative engagement including as a potential mechanism linking transversal leadership to engagement. First, however, in "Self-efficacy" (Article B), it shows that collaborative self-efficacy correlates significantly with collaborative intentions, which is measured through a vignette in which respondents are asked to choose between solving an organizational task (updating clinical guidelines) and joining a cross-departmental working group. This result, albeit only correlation-based, yields support for the expectation that collaborative self-efficacy potentially is important for understanding collaborative engagement. In order to evaluate the mediation hypothesis regarding collaborative self-efficacy potentially linking the effects of transversal leadership behavior to collaborative engagement, I turn to "Behavior." Here, I use parallel mediation (Emsley & Liu, 2013), which be considered a specific case within the structural equation modeling

framework. In parallel mediation, the independent variable can exert influence on the outcome variable both directly and indirectly without the mediation variable being the sole mediator of the relationship. This suggests that the independent variable may have both direct effects on the outcome and indirect effects through the mediation variable. Table 4.10 depicts the parallel mediation analyses and shows insignificant natural indirect effects across all three models (number of meetings, amount of time, and actually writing) indicating that transversal leadership does not influence the outcome measures through collaborative self-efficacy.

The null finding can potentially be attributed to several factors, and it is interesting for both theoretical and practice-related reasons. Theoretically, external interventions based on video vignettes including verbal persuasion alone may have limited influence on employees' self-efficacy. It is therefore relevant to investigate further how collaborative self-efficacy is malleable over time. Besides verbal persuasion, self-efficacy is generally shaped through mastery experiences, that is successful experiences, and vicarious experiences, that is seeing trusted peers succeed with the task (Bandura, 1995, 2010). Hence, employees may have to experience collaborating personally in order for their collaborative self-efficacy to develop. I cannot know this for sure, of course, but verbal persuasion is certainly not enough. On a similar note, the video-based treatment may simply not be strong enough as an instrument to increase self-assessed capabilities significantly. This is evidenced by a robustness analysis from "Behavior" using instrumental variable regression, which shows insignificant first-stage results and a low F-statistic (4.13). Hence, the video vignette can be considered a weak and relatively low intensity instrument compared to, for example, actual experiences with collaboration (Pedersen, 2015; Stock & Watson, 2014).

For practitioners, the results are also interesting. They provide guidance about how it is not—and, by implication, how it may be—possible to work with collaborative self-efficacy in relation to, for example, employee development and personnel management. First, developing collaborative self-efficacy among employees requires more than verbal persuasion. Second, it may be worth considering placing the "right individuals in the right positions;" if a certain position requires relatively more engagement in transversal collaboration, it can be an option to consider the employees' collaborative self-efficacy when deciding whom to assign this role.

Table 4.10. Collaborative self-efficacy as a mechanism to the effects of transversal leadership

	Model 1: Number of prepared meetings				Model 2: Average time spent per meeting				Model 3: Writing what to prepare			
	B	P	SE	95% CI	B	P	SE	95% CI	B	P	SE	95% CI
Controlled direct effect	.720***	.000	.160	.407–1.03	19.26**	.003	6.51	6.50–32.02	.385*	.044	.191	.010–.760
Natural indirect effect	-.011	.489	.016	-.043–.021	-.792	.472	1.10	-2.95–1.37	-.023	.472	.032	-.087–.040
Total effect	.709***	.000	.161	.393–1.02	18.47**	.005	6.59	5.52–31.41	.362†	.063	.194	-.019–.742
Controls	yes				yes				yes			
Observations	462				462				462			

Note: *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1. Controls include public service motivation, occupational self-efficacy, job satisfaction, gender, age, tenure in position, and administration.

4.3.2 Transversal Leadership and Presentational Strategies

In this section, I continue the focus on contextual factors that may condition if, when, and how transversal leadership works as intended. Specifically, I focus on a context where a public leader terminates a collaborative initiative and assess whether initial transversal leadership (before termination) influences employees' collaborative engagement in combination with different presentational strategies explaining *why* the initiative is terminated. These insights are important because public leaders, implicitly or explicitly, make investments in their initiatives when they exert leadership behavior; it signals commitment and may increase the cost of deviating from the initiative (Jakobsen et al., 2022). Just as leader credibility (section 4.1), utilizing presentational strategies highlights a potentially important factor that many public leaders will have to consider when managing transversal collaboration. Put simply, a leader's initial intentions cannot always be sustained over time, and if (or when) they cannot, the leader can choose different strategies to explain this decision to their employees.

Generally, I expect that higher initial transversal leadership will influence collaborative engagement negatively when the leader terminates a collaborative initiative further down the line. Investing in the leadership initiative initially through high transversal leadership clearly signals organizational priority, which may make it more difficult for the leader after termination to convince employees to contribute to similar future initiatives. To investigate the influence of terminating the collaborative leadership initiative, we conducted separate analyses of the effects of presentational strategies on collaborative engagement for both transversal leadership groups (high and low) as well as interaction analyses to examine whether there are significant differences in the effects of high and low transversal leadership across the different presentational strategies.

The results of the analyses of presentational strategies for both groups of transversal leadership are shown in Table 4.11. It is evident that "taking responsibility" and "blaming the principal" strengthens collaborative engagement in a situation with initial low transversal leadership, and "borrowing the principal's argument" has a positive and significant effect when the leader initially showed high transversal leadership. In other words, accepting all blame or explicitly denying any involvement makes employees more forgiving and willing to engage in collaborations when the leader initially did not emphasize the importance of collaborating (low transversal leadership). If the leader shows high transversal leadership, it is important for the employees that the justification for the termination emanates from individuals higher up in the

political-administrative hierarchy. Next, I evaluate the interaction hypothesis and assess whether there are significant differences between the two groups of transversal leadership. The results of these analyses are presented in Figure 4.5, and they reveal no significant results in relation to transversal leadership and presentational strategies ("borrowing the principal's reasoning" is positive at a 10-percent level). In sum, this means that transversal leadership plays a role as a way to invest more or less strongly in a leadership initiative, which afterwards affects how different presentational strategies influence engagement.

Table 4.11. Direct effects of presentational strategies on collaborative engagement across transversal leadership

	Model 1: Low transversal leadership				Model 2: High transversal leadership			
	B	P	SE	95% CI	B	P	SE	95% CI
Presentational strategies								
Taking responsibility	19.83**	.003	6.642	6.733–32.93	3.406	.521	5.299	-7.034–13.86
Taking responsibility and providing argument	7.420	.282	6.879	-6.144–20.98	-9.083[†]	.090	5.328	-19.58–1.413
Blaming the principal	18.40**	.008	6.898	4.801–32.00	7.358	.162	5.242	-2.969–17.69
Borrowing the principal's reasoning	3.457	.577	6.183	-8.735–15.64	11.68*	.039	5.628	.5976–22.77
Constant	6.622	.744	20.25	-33.32–46.56	36.22	.045	17.94	.8595–71.58
Controls	yes				yes			
Observations	217				230			
Adj. R-squared	.1115				.0908			

Note: Standard errors in parentheses. *** p < 0.001, ** p < 0.01, * p < 0.05, † p < 0.1. Controls include leader credibility pre-manipulation, employees' investment, public service motivation, occupational self-efficacy, job satisfaction, gender, age, education level, and tenure in position.

Figure 4.5. Interaction effects of presentational strategies and transversal leadership on collaborative engagement
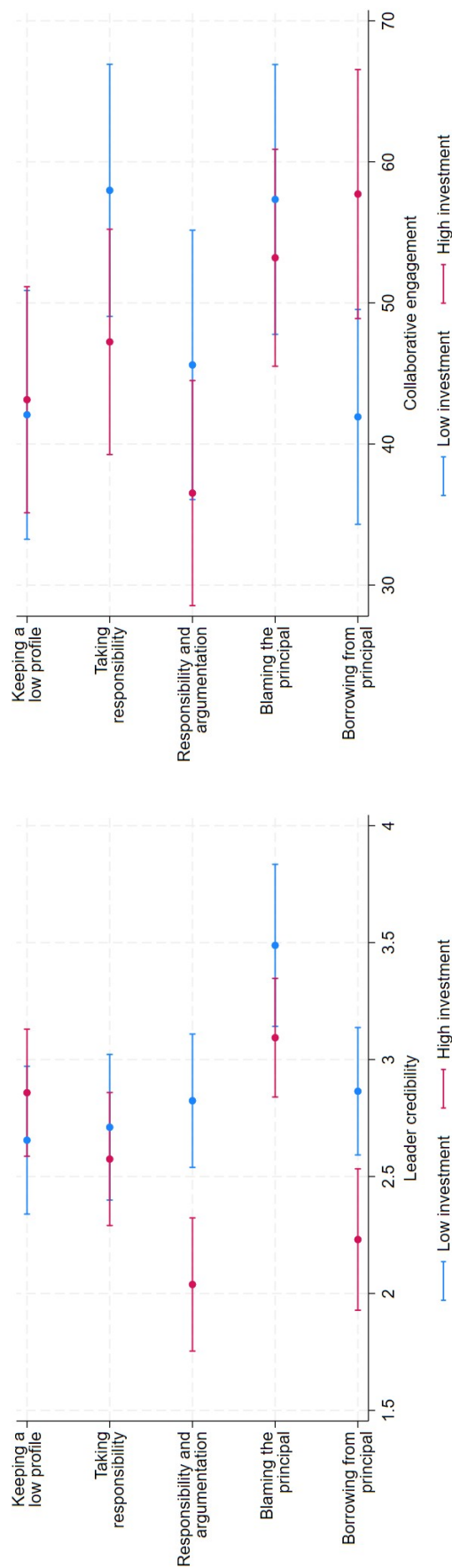
Note: Dots represent means. Brackets indicate 95% confidence intervals.

4.4. Addressing the Research Questions

The research questions for this dissertation are: What is transversal leadership? To what extent does transversal leadership influence collaborative engagement and interorganizational coordination? How does self-efficacy act as a mechanism to the influence of transversal leadership? The starting point for the research questions is the overarching focus on transversal collaboration in public service delivery, capturing when functionally and jurisdictionally separated organizations interact and align their individual inputs and collaborative processes. This process of interacting and aligning can be more or less structured and intense, depending on the context, and involves setting a shared direction, securing relational and structural alignment, and ensuring commitment to the shared task, which includes aligning activities, work processes, resources, responsibilities, rules, structures, and norms.

So, what is transversal leadership? Transversal leadership seeks to direct, align, and commit a leader's employees to shared tasks with actors outside their own managerial jurisdiction. I find support for a nine-item measurement scale, which shows reasonable fit measures, reliability, and measurement validity. As contextual factors, it is fruitful to focus on leader training where participants highlight the training's positive influence regarding clarifying a shared direction, establishing shared tasks and goals, overcoming barriers to collaboration, and ensuring knowledge exchange. Moreover, a leader's credibility is affected negatively if they terminate collaborative leadership initiatives, and even more so when the leader has exerted high transversal leadership initially. Leader credibility is expected to be important for future leadership, and the result reminds leaders to consider whether it is possible to follow through on leadership initiatives before stating one's intentions.

Next, to what extent does transversal leadership influence interorganizational coordination and collaborative engagement? In a field experiment, I show that transversal leadership training influences participating leaders' assessments of relational coordination and overall collaborative quality as well as their frontline managers' assessments of relational coordination and structural coordination mechanisms. The participating leaders indicated that they successfully established trust and respect and worked to improve the structural coordination mechanisms for leaders, managers, as well as employees. Likewise, transversal leadership shows positive signs in terms of influencing collaborative engagement. Employees who are experiencing high transversal leadership show more vigor and dedication to a collaborative initiative. They prioritize the shared task higher, spend more time on it, and are (close to sig-

nificantly) more likely to contribute behaviorally. When a collaborative initiative is terminated, high transversal leadership works as a lever to strengthen the signaling around the shared task and thereby increase the cost of deviating. In order to mitigate these costs, it is particularly effective for a public leader to borrow the reasoning for termination from their own principal and thereby deflect blame. If their initial investment was relatively smaller, taking responsibility or blaming their principal are efficient strategies to strengthen collaborative engagement.

Finally, the analyses do not support collaborative self-efficacy as a mechanism linking the influence of transversal leadership to collaborative engagement. Overall, the measurement scale for collaborative self-efficacy shows satisfactory loadings, fit, reliability, and validity, but it seems to be a relatively stable construct that is not influenced solely by single-standing verbal persuasion-based interventions. Nonetheless, despite its intuitive robustness, collaborative self-efficacy may still be malleable (through other means than communication alone) and useful as a personnel management tool. Future research is invited to investigate the scope and dynamics of collaborative self-efficacy.

Chapter 5.
Discussion, Contributions, and Perspectives

Individuals are often overlooked in research on interorganizational collaboration in the public sector. According to O'Leary et al. (2012, p. 70), "most of the literature on collaboration in the public sector focuses on organizations, with the role of the individual in collaborations receiving limited attention." Or as Frederickson puts it: "It [is] always in the form of managers and officials. Effective collaboration is deeply dependent upon the skills of officials and managers. Organizations may appear to collaborate, but in fact it is individuals representing organizations who collaborate" (2007, p. 16). So, despite growing attention to the role and importance of individuals in public organizations, and particularly leaders (Amsler & O'Leary, 2017), they remain underemphasized as there is more focus on the dimensions of process and institution in the context of interorganizational collaboration.

The dissertation addresses this gap by exploring the concept of transversal collaboration, a specific and previously understudied type of interorganizational collaboration that focuses on whether and how public leaders and employees can work internally in order to contribute to shared work across managerial jurisdictions. Embedded within the findings of the dissertation are various aspects, which benefit from being discussed further. In the next section, I discuss the theoretical, empirical, and methodological contributions of the dissertation. Afterwards, I discuss its strengths and limitations with focus on theory development, research designs, and addressing critical perspectives. Finally, I discuss the implications for future research and practitioners.

5.1 Theoretical, Empirical, and Methodological Contributions

The five research articles and the dissertation as a whole make a number of theoretical, empirical, and methodological contributions to public management and administration research, based on the direction, alignment, commitment framework combined with insights from, for instance, the literatures on interorganizational collaboration, relational and structural coordination, self-efficacy, and work engagement, and by applying methods to maximize the probability of causal claims. Table 5.1 highlights the main contributions, which I discuss below in relation to the three research questions.

Table 5.1. Main contributions from dissertation

	Theoretical contributions	Empirical contributions	Methodological contributions
1	Conceptualization of transversal leadership and collaborative self-efficacy	The causal effects of transversal leadership on assessments of interorganizational coordination	Development of measurement scales for transversal leadership and collaborative self-efficacy
2	Development of a framework for collaborative transversal leadership training	The causal effects of transversal leadership on collaborative engagement	Use of video vignettes and transversal leadership training to alter transversal leadership experimentally
3	Assessment of how leader credibility is influenced by transversal leadership	Collaborative self-efficacy as a potential mechanism linking the effects of transversal leadership to engagement	Use of a collaborative centipede game to capture collaborative engagement behaviorally

Question 1: What is transversal leadership?

Regarding the first question, I make three contributions in "Leadership" (Article A), "Training" (Article C), and "Commitment" (Article E). First, I conceptualized transversal leadership, a novel leadership understanding defined as leadership seeking to direct, align, and commit a leader's employees to shared tasks with actors outside their own managerial jurisdiction. This conceptualization makes it possible to theorize, investigate, and build cumulative knowledge on how public leaders can work internally to engage their employees externally. The conceptualization complements other collaboration-based leadership understandings with focus on stakeholders, networks, and processes (Ospina, 2017; Uhl-Bien, 2011) by focusing explicitly on the leader's behavior in relation to own employees. Similarly, the behavioral focus of the conceptualization is essential to avoid confounding transversal leadership and its potential effects in empirical analyses (Jensen et al., 2019; van Knippenberg & Sitkin, 2013).

Second, I developed a nine-item measurement scale for transversal leadership, which is readily available to the research community. The scale shows reliability and measurement validity and provides an analytical basis for scholars to investigate leadership in relation to interorganizational collaboration.

Third, in "Training," I theorized how transversal leadership can be developed through team-based leadership training, which captures an innovative approach to leadership training compared to previous research, which mainly focuses on individual leaders training leadership. Additionally, in "Commitment," I showed that terminating a collaborative initiative influences leader

credibility negatively, particularly when employees experience high transversal leadership initially. Leader credibility is understood to be important for leadership as employees are more responsive if they evaluate their leader's credibility positively (Dull, 2009), and hence, the negative effect of terminating initiatives speaks to temporal dynamics related to transversal leadership (Oberfield, 2014).

Question 2: To what extent does transversal leadership influence collaborative engagement and interorganizational coordination?

In relation to the second research question, I make three contributions in "Training" (Article C), "Behavior" (Article D), and "Commitment" (Article E). First, in "Training," I demonstrated that participating in the team-based leadership training program had a positive effect on relational coordination, structural coordination mechanisms, and collaborative quality among the participating leaders and their frontline managers. This supports the expectation that it is possible to train leadership collaboratively and that the effects of training can permeate hierarchical layers to some extent, which future research can benefit from when designing training programs (Eva et al., 2021). Our understanding of the vertical dispersion stemming from horizontal leadership training is, however, still in its infancy and calls for more research.

Second, in "Behavior," I showed that employees who experience high transversal leadership show increased engagement in collaborative initiatives compared to employees who experience low transversal leadership. The increased engagement was evident in the employees' vigor and dedication as they continued longer, spent more time, and (close to significantly) contributed more behaviorally to the initiative. These causal effects underline that leadership matters for transversal collaboration, which future research can use as the backbone for developing research questions and designs. Generally, causal insights are rare in research on interorganizational collaboration where studies mostly build on case studies on collaborative processes (Karlsson et al., 2020; Kortleven et al., 2019; Pratt et al., 2018). Additionally, the differences in effect sizes across number of meetings, time spent, and actually writing highlight that scholars need to be mindful when choosing outcome measures; the more actual behavior is necessary, the harder it is to manipulate.

Third, in "Commitment," I showed that it is possible for public leaders to strengthen collaborative engagement using specific presentational strategies after terminating a collaborative initiative. This is true for "taking responsibility" and "blaming the principal" if the leader has shown low transversal leadership initially, and for "borrowing the principal's argument" when the leader

showed high transversal leadership. These results provide a basis for further theorizing and empirical analyses of the use of presentational strategies when terminating collaborative leadership initiatives.

Question 3: Does self-efficacy act as a mechanism to the influence of transversal leadership?

Finally, in relation to the third research question, I make three contributions in "Self-efficacy" (Article B) and "Behavior" (Article D). From "Self-efficacy," the first contribution captures the conceptualization of collaborative self-efficacy, which stems from bridging different understandings of interorganizational collaboration and self-efficacy as a psychological mechanism. The conceptualization pins out relevant dimensions (taking initiative, building relations, navigating structures, and creating collective value) from the literature on interorganizational collaboration and amalgamates them at the level of the individual framed as actionable behaviors. Having a concept that captures public employees' belief in their own capabilities to contribute makes it possible for future research to develop hypotheses around causes and consequences at the individual level in relation to interorganizational and transversal collaboration.

Second, and relatedly, I developed a 12-item measurement scale for collaborative self-efficacy, which is readily available to the research community. The scale showed reliability and measurement validity, which provides an analytical outset for scholars to investigate why and when public employees are (feeling capable of) contributing to interorganizational collaboration as well as its effects on employee behavior.

Third, in "Behavior," I evaluated the potentially mediating role of collaborative self-efficacy in an innovative survey experiment. In this context, collaborative self-efficacy did not appear to be a mechanism linking the impact of transversal leadership to collaborative engagement among employees. At first glance, this null finding can indicate that collaborative self-efficacy is a relatively stable psychological disposition, which at least is not influenced by verbal persuasion alone. Scholars are invited to explore the dynamics and malleability of collaborative self-efficacy further.

Overview of main contributions

To sum up, the PhD dissertation makes theoretical, empirical, and methodological contributions to research on public administration and management. In terms of theoretical contributions, I develop a framework to study transversal collaboration focusing on how public organizations, leaders, and employees can work internally to build and nurture their external collaboration.

I develop and validate two novel concepts (transversal leadership and collaborative self-efficacy). I theorize how transversal leadership can be trained and assess how transversal leadership relates to leader credibility when a collaborative leadership initiative is terminated, which highlights a potentially important condition for exerting transversal leadership over time. In terms of empirical contributions, I provide causal insights into how transversal leadership influences collaborative engagement, collaborative self-efficacy, and interorganizational coordination. These insights support that transversal leadership can be an important lever to strengthen transversal collaboration between public organizations, which provides a starting point for further research into this topic. Finally, in terms of methodological contributions, I base the articles on rigorous and innovative research designs and operationalizations. Specifically, I develop novel measurement scales for transversal leadership and collaborative self-efficacy, show that leadership can be trained in a team-based leadership training program, utilize video vignettes to experimentally induce leadership behavior, and employ a behavioral centipede game to measure actual contributions from public employees. I invite scholars to build upon these contributions, and to this end, I present specific ideas for future research in section 5.3.

5.2 Strengths and Limitations

Like most research, this dissertation has both strengths and limitations, which should inform the reading of the findings and contributions. In this section, I evaluate the most central of them. In terms of strengths, I focus mostly on the research designs undergirding the dissertation. In terms of limitations, I discuss design-related limitations and critical perspectives concerning the guiding assumptions for understanding transversal collaboration and the main concepts of the dissertation.

5.2.1 Design-related Strengths and Limitations

Given the novelty of the theoretical framework for transversal collaboration, particularly transversal leadership and collaborative self-efficacy as new constructs, as well as the causal nature of the research questions, I used scale development, field experimental, and survey experimental designs, which maximized the possibility of validating measurement scales and making causal claims to investigate the theoretical expectations.

Strengths

Three particular strengths stand out. The first is found in the combined conceptualizations and operationalizations of transversal leadership and collaborative self-efficacy in "Leadership" and "Self-efficacy," respectively. Here, it was prioritized to strike a balance between theoretical and empirical judgments (Wieland et al., 2017) in the process of going from a theoretical concept to one that is testable on practitioners and, hence, consider how theoretical concepts translate into real-world settings. To secure accordance between theory and measurement scales as well as ecological and scientific rigor, items for both transversal leadership and collaborative self-efficacy were developed from the theoretical conceptualization and from discussions with both practitioners and survey methodology experts. Since "transversal," "collaboration," and "collaborative" are abstract concepts, it was important to make them concrete in order to make them useful. Moreover, it was necessary to consider and assess the measurement scales' reliability and measurement validity (including face, construct, criterion, and discriminant). For both constructs, face validity was assured by considering and securing separation from established typologies and related concepts. After a series of pilot tests and iterative updates, the final list of items was curated to fit the intended theoretical constructs as closely as possible. The reliability and measurement validity were shown in both articles, which clarify the scales' usefulness (see sections 4.1 and 4.3.1).

The second and third strength are connected, and both relate to the fact that most public administration and management studies of interorganizational collaboration rely on designs that do not allow for causal identification. The second strength is, therefore, the empirical studies' ("Training," "Behavior," and "Commitment") combined ability to draw causal conclusions due to their experimental designs and focus on internal validity, while collectively balancing external and ecological validity as much as possible. As such, there is typically a trade-off between internal, external, and ecological validity (Wright & Grant, 2010), but it has been a priority to employ different experimental designs that supplement each other in terms of maximizing the overall validity.

The third strength complements the second one by emphasizing the relative merits of each design. The field experiment ("Training") leans more towards ecological and external validity as the intervention aims to closely resemble real-world conditions and focus on the participating leaders' real-life work. While there was also some attention to internal validity due to the experimental setup, I must note that I can only estimate intention-to-treat effects of leadership training, as I have no control over how the leaders *actually*

engage between and after training sessions. In contrast, in the survey experimental articles ("Behavior" and "Commitment"), internal validity is given relatively higher priority by holding contextual and confounding factors constant. This comes at the expense of ecological validity in particular due to the scenario-based design, which may not perfectly mirror real-life collaboration. Nonetheless, ecological validity was still a consideration here, as evidenced by the co-development of the scenario with the occupational therapists' union.

Limitations

The dissertation is obviously not without limitations, and below I emphasize three related to the research designs. The first pertains to the external validity and generalizability of the findings. While it has been possible to validate the measurement scales for transversal leadership and collaborative self-efficacy as well as causally examine the effects of transversal leadership across different organizations and professionals, the analyses in the articles making up the dissertation were exclusively conducted in service-providing healthcare organizations in Denmark. This does not necessarily imply that the findings lack relevance elsewhere, given that the essential characteristics of the organizations (for example, focus on service provision, relatively clear core tasks, and professionalized staff) align with those of many public organizations. One example is specialized social service departments, which often work collaboratively with, for example, healthcare organizations when they support vulnerable citizens experiencing multiple issues. Another example is public schools, which have to collaborate with several municipal administrations in their work to improve integration of children with different challenges. Nevertheless, as I return to in section 5.3.1, it will be useful to explore transversal collaboration and transversal leadership in alternative contexts, including organizations that offer services beyond healthcare, work with service regulation and not provision, and with even more or less professionalized employees than those studied here.

One additional limitation of the dissertation is that it relies mostly on subjective performance measures. While public leaders, frontline managers, and frontline employees have significant importance in influencing how transversal collaboration functions, their assessments of, for example, interorganizational coordination in "Training" may be susceptible to measurement errors. Factors such as social desirability and leniency bias (Crowne & Marlowe, 1964; Schriesheim et al., 1979) can potentially affect their evaluations. However, by employing experimental designs and a collaborative centipede game in "Behavior," I have attempted to minimize the potential influence of this limitation.

Finally, it is appropriate to consider whether transversal collaboration is exclusively relevant within the public sector. Although the dissertation only examines transversal collaboration, transversal leadership, and collaborative self-efficacy in the public sector, it is reasonable to assume that it has relevance in private organizations as well, as many private organizations are structured in independent but interacting units and rely on collaboration with other actors, such as suppliers and consumers, in their value chain. However, public organizations often have multiple and vague goals, whereas private organizations prioritize profit maximization (Boye et al., 2022; Boyne, 2002; Farnham & Horton, 1996). Although this distinction may oversimplify the differences between public and private organizations (Chandler, 1991), it underscores the importance of considering how transversal collaboration may manifest itself differently based on organizational goals, values, and structures.

In sum, by combining the approaches and insights from the articles, it is possible to prioritize both reliability and validity in the operationalizations and causal conclusions about transversal leadership, collaborative engagement, collaborative self-efficacy, and interorganizational coordination. Future research is needed to dig deeper into the relationships I investigate, supplement with additional variables, broaden the context to other sectors and organizations, and employ, for example, qualitative approaches in order to assess relevant mechanisms in depth. I return to ideas for future research in section 5.3.1. First, though, I present and address two critical perspectives concerning the understanding of transversal collaboration presented throughout the dissertation.

5.2.2 Critical Perspectives: Stuck in the 1960s but Forgetting The Beatles?

The understanding of transversal collaboration put forth in the dissertation rests on two ontological and theoretical assumptions: the significance of the hierarchical mechanism to social coordination in relation to public sector work (Bouckaert et al., 2010), and the expectation that collaborating organizations, by default, perceive alignment of their activities as important and, subsequently, prioritize it.

"Stuck in the 1960s?"

Regarding the assumption about the significance of the hierarchical mechanism for social coordination, I argue that hierarchies constitute a continuously important feature in public service delivery; the starting point is still the "silo" (Scott, 2020). However, the context of interorganizational collaboration can be argued to have changed—or, at least, be in the process of changing. Among

the causes are developments in public sector governance regimes where New Public Governance and Public Value Management have risen to prominence (Torfing et al., 2020) as well as changes in the public values guiding the way the public sector works (Bryson et al., 2014; Fukumoto & Bozeman, 2019; Goodsell, 2006).

These changes involve increased focus on social orientation, mutual dependence, and multipartner governance (Emerson et al., 2012). They entail improving input and output legitimacy of public services through cross-boundary collaboration between public, nonprofit, and private actors in networks and partnerships (Ansell & Gash, 2008), and prioritizing trust-based management to increase public service motivation, room for employee discretion, and dialogue with users, citizens, and stakeholders in order to mobilize local resources (Torfing et al., 2020). The basic assumption in the new governance research is that the hierarchical model corresponds well with old-fashioned values such as efficiency, rule compliance, and transparency. However, it is less effective in increasingly complex, fragmented, and multi-layered societies. Nowadays, values such as fairness, dependability, and integrity are at the forefront, and especially network approaches are argued to complement these well.

So, the question remains: Is the hierarchical mechanism too narrow and/or old-fashioned? Am I "stuck in the 1960s"? There is definitely merit to the perspective that relatively complex public issues at times can require relatively complex collaboration. Yet, the emphasis on transversal collaboration and securing alignment and cohesion remains valuable due to its omnipresence in relation to public service delivery within public sectors that often are divided into specialized "silos" (Scott & Gong, 2021). Additionally, the hierarchical and networked coordination mechanisms need not be in conflict; they offer different answers to different questions. Studying transversal collaboration reveals how independent yet aligned contributions from public organizations can address shared tasks. It centers on relatively structured and static collaboration and the organizations' ability to develop a shared direction, secure relational and structural alignment, and ensure commitment to the shared task. On the other hand, research on the network mechanism proves beneficial for in-depth insights into collaborative processes, particularly in partnerships spanning various levels and sectors. Recognizing their distinctions only enriches our understanding of both approaches.

"Forgetting the Beatles?"

The fact that hierarchies remain central to the functioning of the public sector, and specifically in public service delivery, highlights the second ontological

and theoretical assumption that benefits from discussion, namely that collaborating organizations are expected to perceive alignment of their activities as central and, subsequently, prioritize it. One could ask: Is it fairer to expect conflict? Classic public administration research has highlighted several obstacles and barriers to securing well-functioning interorganizational collaboration stemming from the age-old tradeoff between specialization and coordination.

Specialization and demarcated responsibility in organizations equal knowledge, which equals power (Wildavsky, 1964), all of which potentially make public organizations prioritize maximization of own resources, autonomy, and preferences (Dunleavy, 1991; Niskanen, 1971; Wilson, 1989). This is increased by the historical reliance on New Public Management principles, where organizational core tasks become the focal point (Hood, 1991). Together, these literatures point to a conflict-ridden foundation for public organizations to collaborate, causing them to "mind their own shop" (Perri 6 et al., 1999). Additionally, misaligned incentive structures, a multitude of political principals, veto points, and lengthy implementation chains can impede their room for maneuver and hinder cohesion in service delivery (Pressman & Wildavsky, 1984; Scharpf, 1994). In addition to structural barriers, the fact that individuals are coming from different social settings can increase tensions. Social identity (Ashforth & Mael, 1989) and similarity-attraction processes (Byrne, 1971), for example, categorizing others and using cues to determine shared or differing attributes, give rise to in-group or out-group perceptions. A stronger bias toward one's in-group may cause leaders and employees to perceive collaboration as less valuable. Some of these barriers were highlighted in the interview material from "Training," which elucidated how cultural differences, a lack of respect for others' professional aptitude, a lack of shared resources, and a lack of agreement on a shared direction can hinder transversal collaboration.

So, the question remains: How meaningful is it to expect that collaborating organizations, by default, perceive alignment of their activities as important and, subsequently, prioritize it? Is it more likely that organizations, given the importance of hierarchies, will be in conflict? Have I "forgotten The Beatles" (that is, Wildavsky, Niskanen, and Wilson to name a few) in the conceptualization of transversal collaboration? I will provide two answers to these questions. First, it is not necessary to relinquish specialization at the expense of coordination; on the contrary, specialized inputs from demarcated organizations is central in the understanding of transversal collaboration. Nor are turf battles and loss of autonomy (Wilson, 1989) expected to be immediate concerns as the organizations, by default, are understood as jurisdictionally sep-

arated and responsible for their own shop. Instead, the argument in the dissertation is that since organizations often have natural interfaces where they rely on inputs from other organizations to solve shared tasks, they will be inclined to perceive alignment and cohesion in collaborative inputs and processes as central. Broadly put, it lowers friction—also within each organization—and thus corresponds to the argument that one solution to collective action problems is individual incentives (Brennan et al., 2021; Ostrom, 1998).

Second, and in contrast, parts of the critical perspective are definitely relevant to incorporate in order to assess transversal collaboration further, such as barriers stemming from social identity and related to implementation of collaborative initiatives. However, for the dissertation's empirical work specifically, I have controlled the context experimentally to cope with the influence from structural or relational barriers and strengthen the reliability of the findings. Additionally, in the conceptualization and operationalization of both transversal leadership and collaborative self-efficacy, I explicitly addressed the fact that public leaders and employees might experience challenges while collaborating. This is evident in the items, for example in terms of securing structural and relation alignment (in "Leadership") and navigating organizational structures (in "Self-efficacy"). Also, in "Training," a main purpose of the training program was to provide the participating leaders' a shared room to discuss potential challenges and barriers as well as a way to overcome them, and in the measurement of collaborative engagement in "Behavior," the choice of collaborating was exactly phrased as a tradeoff between the collective ("prepare materials") and the home organization ("usual core tasks"). Nonetheless, it is definitely worthwhile for future research to investigate the barriers and challenges—whether structural or relational—that might deter public organizations from building the "readiness" for collaboration that transversal collaboration revolves around.

To summarize, given the comical headline of this section, it is definitely worth discussing whether the reliance on the hierarchical mechanism to social coordination throughout the dissertation resembles being "stuck in the 1960s" (that is, not engaging with the latest developments regarding interorganizational governance and collaboration). And, simultaneously, whether the lack of focus on inherently conflict-ridden aspects of interorganizational collaboration, such as turf battles and implementation barriers, makes it seem like I have "forgotten The Beatles" (that is, key characteristics of interorganizational collaboration and coordination). However, as stated throughout the section, I would argue that it is not so simple. Succinctly put, hierarchies are still ubiquitous, and utility—for the individual organization and for the system broadly—is best secured when hierarchies align.

5.3 Implications for Research and Practitioners

In this last section, I address the steppingstones that the dissertation lays out for future research based on its findings, limitations, critical perspectives, and related streams of literature that can expand our understanding of transversal collaboration. After the discussion of future research, I discuss the dissertation's implications for practitioners in the public sector.

5.3.1 Future Research

In the dissertation, I have presented a framework for understanding transversal collaboration and showed that transversal leadership can be an important lever to strengthen such collaboration. The dissertation thereby fills important gaps in the literature on interorganizational collaboration and consequently raises new questions and provides a foundation for future research. Generally, the dissertation has examined whether and how public leaders can exercise transversal leadership in relation to their frontline employees and has focused mainly on mechanisms and outcome measures at the employee level.

Additional settings: Testing the scope

Based on the findings and the discussion of generalizability in section 5.2.1, it is worthwhile investigating transversal leadership, collaborative self-efficacy, and collaborative engagement in more depth. This includes research in organizations that are not service providing and in sectors outside public healthcare. Generally, I expect that transversal leadership, collaborative self-efficacy, and collaborative engagement will be relevant in most public organizations, where some degree of alignment with other organizations is necessary to secure cohesion around shared tasks, but further research is necessary to assess this expectation.

One meaningful setting for future research could be job centers and employment administrations, which often work collaboratively with and rely on inputs from, for example, private employers, health organizations, and internally across departments. Also, they focus on service regulation rather than service provision and have less professionalized employees than, for example, hospitals (Hasenfeld, 1972), making them an interesting setting.

Likewise, it is key to assess how malleable the main constructs in the dissertation are and what, potentially, alters them positively. In "Training," I show that transversal leadership training positively influences interorganizational coordination, which provides a starting point for understanding how transversal collaboration can be improved. The positive effect was not present

for the frontline employees, however, and in "Behavior," I show that it is difficult to alter their collaborative self-efficacy as a potential mechanism.

Role of the employees: Assessing the depth

Nonetheless, frontline employees remain important to transversal collaboration (Molenveld et al., 2020), and based on the findings, it is key to broaden the research in order to understand when and how they play an active role. Echoing the insight that training can be fruitful, future research may look into whether designing training programs for employees (or organizations as a whole) aimed at strengthening their collaborative self-efficacy, assessment of interorganizational coordination, and collaborative engagement can have positive effects.

Additionally, it is fruitful for future research to incorporate insights from the boundary spanning literature, which highlights employees who proactively scan the environment, employ activities to cross organizational jurisdictions, and mediate the information flow (van Meerkerk & Edelenbos, 2018). As such, boundary spanning capabilities can provide nuance to the understanding of transversal collaboration, both as a cause of employee behavior and as a valuable outcome measure. In the dissertation, I mostly focused on collaborative engagement as outcome measure, and generally, future research is needed to broaden the types of outcome measures at the employee/service-provision level. This can include designing studies to investigate objective outcome measures that, potentially, are closer to the citizens.

Redirecting attention downwards in the hierarchy also aligns with the growing emphasis on distributed and collective leadership, which illustrates how employees can be active participants in leadership processes (Orazi et al., 2013; Ospina, 2017; Vogel & Masal, 2015). It is relevant for future research to consider distributed transversal leadership as a concept because public employees often will be able to influence the shared direction, alignment, and commitment to shared goals with actors outside their own managerial jurisdiction. They can help address challenges from cross-organizational working environments, which may be one factor that limits leaders' ability to influence their employees as seen in "Training." However, implementing distributed transversal leadership might be complex. For instance, if employees assume leadership responsibilities without the necessary competencies or intentions to do so in line with the shared direction (Jakobsen et al., 2021). It is central to explore the factors that motivate, hinder, or enhance distributed transversal leadership, as well as to examine how frontline managers and employees can exert influence further up the organizational hierarchy in order to shape the conditions for transversal collaboration.

Complementary designs: Seizing the details

Studying transversal collaboration and transversal leadership with designs that supplement the dissertation's causal findings will also be valuable. This includes research into the processual aspect of transversal collaboration, including how transversal leadership plays out within organizations and how contextual factors can facilitate or impede collaboration. A starting point can be qualitative studies building on interviews to obtain detailed descriptions of how transversal collaboration and transversal leadership are perceived and exerted. The interviews in "Training" support that such accounts can provide nuance, but more rigor is necessary in future research in order to systematize reliable takeaways.

It is likewise worthwhile to consider observational studies of transversal collaboration and transversal leadership as they may involve taken-for-granted norms and behaviors that leaders and employees are not fully conscious of (Gilad, 2019). Thus, future research can benefit from ethnographic fieldwork and shadowing to study transversal collaboration closer to practice. This makes it possible to shed light on, for example, how leader credibility and other personal and interpersonal characteristics influence whether leaders are able to sustain transversal leadership. In "Commitment," I showed that it is costly for leader credibility to invest highly in a collaborative initiative that later is terminated. By delving deeper into such interpersonal mechanisms and other boundary conditions to transversal leadership (such as team climate and organizational culture), future research can uncover "hidden aspects" of transversal collaboration that are otherwise hard to capture.

Structural and relational context: Broadening the horizon

Furthermore, it is valuable for future research to include additional theoretical perspectives in order to gain a deeper understanding of the broader structural and relational context surrounding transversal collaboration and transversal leadership. This can include focusing on the potentially conflict-inducing aspects of interorganizational collaboration presented in section 5.2.2 as well as consulting literature on social dynamics and coordination.

A starting point to shed light on the structural context is the acknowledgement that integrating and aligning politically decided organizational goals and the need for transversal collaboration often takes place at more hierarchical levels in the public sector and does not, necessarily, involve frontline employees at first. It is therefore useful to study the role of politics and how the character of political goals influences the conditions under which leaders can exercise transversal leadership. Similarly, future research can investigate how "the shadow of the hierarchy" (Scharpf, 1994), turf wars (Wilson, 1989), and

implementation barriers such as veto points and implementation chains (Pressman & Wildavsky, 1984) influence transversal collaboration and transversal leadership.

Besides focusing on how structural characteristics might influence transversal collaboration, future research can also benefit from investigating social dynamics within and between organizations in order to understand when and how public leaders and employees engage interorganizationally. Here, it can be fruitful to consider social identity and social capital as additional theoretical perspectives to shed more light on transversal collaboration. Differences in social identities and diversity, in general, are associated with greater creativity, but it may also reduce social cohesion, generate conflict, and delay decisions (Andersen & Moynihan, 2016), which potentially influences implementation of shared initiatives.

Relatedly, social capital describes how social dynamics and resources made available through social relations influence individual behavior (Kadushin, 2012). Social capital can be construed in both a structuralist and a connectionist manner (Borgatti & Foster, 2003; Nahapiet & Ghoshal, 1998). Structuralist studies view social capital as an asset that accrues to individuals who have structurally advantageous positions in a network. These positions may be based on centrality (Baldwin et al., 1997) or one's ability to build bridges between disconnected others (Burt, 1992, 2005). The connectionist view of social capital concerns network composition in terms of the resources one is granted through one's connections. Resources that are available through a network are relational resources, such as knowledge, skills, and support, that flow between actors (Daly & Finnigan, 2011). Thus, connectionist studies focus on the individual's capacity to access and utilize resources within their network rather than emphasize structural position.

To gain a deeper understanding of both leaders' and employees' social identities and social capital in relation to transversal collaboration, social network analysis can uncover relations between employees within and across organizations. Being a central individual in an organization brings about certain resources that can be important for the individual's behavior both inwards towards colleagues and outwards towards collaborators. Future research can investigate, for example, the characteristics of transversal networks and how the resources to which leaders and employees have access within their organization influence their interorganizational engagement. By studying social dynamics within and across organizations, it is possible to bridge the hierarchical and social mechanism to coordination, which generally constitutes an important avenue for future research. A meaningful area to study will be climate management due to its reliance on partnerships and the intricate

tradeoff between prioritizing work within one's own organizational demarcation and subsuming benefits towards a collective good or, rather, a collective action problem.

5.3.2 Implications for Practitioners

Having discussed avenues for further research, one last question remains: How is this dissertation relevant to practitioners? As I proceed to answer this question, I urge anyone reading the suggestions to i) keep their own context in mind and ii) consider the limitations of the dissertation, some of which are discussed above.

Four suggestions for practitioners stand out. First, I show that transversal leadership matters as it has substantial effects on employees' collaborative engagement. I hope that this positive effect will motivate public organizations and leaders to reflect on their conditions for exerting transversal leadership so that the employees perceive the intended leadership. In addition, leaders can use the transversal leadership framework to think about whether all three behavioral elements (direction, alignment, and commitment) are part of their own leadership conduct and whether they should be. A general takeaway from the dissertation is that leaders who wish to get across with transversal leadership can benefit from considering how they exert leadership and communicate in relation to transversal collaboration; this entails clarifying a shared direction, securing alignment, and fostering commitment among the leader's own employees to goals shared with actors outside their own managerial jurisdiction.

Relatedly, and leading to the second suggestion, I show that transversal leadership can be developed through team-based leadership training. Specifically, attending training has the potential to improve relational coordination and structural coordination mechanisms. Assessments of interorganizational coordination are important for understanding transversal collaboration as they constitute a foundation for engaging actively; if, for example, an employee is unhappy with the quality of relations and structural coordination mechanisms at their disposal, they are expected to be less likely to engage across organizational jurisdictions. Hence, leaders can benefit from considering training—or, more generally, prioritizing developing their transversal leadership behavior—in order to improve the overall coordination undergirding their collaboration with other organizations. The evidence that attending transversal leadership training influences relational coordination and structural coordination mechanisms positively is furthermore good news for decisionmakers and top bureaucrats who work to implement governance models

that emphasize collaboration, social orientation, and mutual dependence across organizational boundaries.

Third, the framework for understanding and assessing collaborative self-efficacy provides a basis for considering and developing a potentially important psychological disposition among frontline employees that is expected to influence their contributions to transversal collaboration. The findings show that collaborative self-efficacy is difficult to change in the short run through leadership, but it remains important to consider how employees can develop their orientation towards interorganizational collaboration. Similarly, public leaders can use the framework as a tool to consider their personnel management as certain tasks and functions require active collaborative behavior from employees to a larger extent than others. Thus, it sheds light on the potential in assigning the most suitable individuals to appropriate roles.

Finally, the theme of the dissertation—transversal collaboration—constitutes a welcome complementary perspective to, for example, more networked collaboration, and I hope that public leaders, employees, and decisionmakers alike can use the framework of transversal collaboration to think systematically about how they can influence and improve collaboration between organizations. Do they work actively with their shared direction, alignment, and commitment? Do they consider how employees' collaborative self-efficacy and collaborative engagement are fostered and sustained? And do they invest appropriately in securing well-functioning interorganizational coordination with their collaborators? If leaders, employees, and decisionmakers find the elements relevant in their own context, I hope the empirical illustrations provided in the dissertation can inspire their thinking about how they can improve transversal collaboration in different ways and foster discussions within their organization about how to structure, implement, and improve their shared work.

In sum, it is my ambition that this dissertation can provide interesting insights and open new perspectives about transversal collaboration in public service delivery that both scholars and practitioners alike will find inspiring. As individuals—whether as scholars, leaders, employees, or citizens—we tend to become masters of our trades. Only through collaboration can we collectively become a "jack of all trades;" a collective where the individual still reigns—but a collective, nonetheless, where everyone brings their best and fundamentally respects one another. It is possibly true that this collectively makes us "a master of none," but if so, it is also possibly true that this oftentimes will be better than "a master of one."

English Summary

Interorganizational collaboration plays a crucial role in achieving alignment and cohesion within public service delivery. However, it faces significant challenges due to the functional and jurisdictional separation between organizations, characterized by distinct organizational core tasks, professional norms, diverse cultures, and intricate governance structures. These challenges often manifest as conflicts over resource allocation and are compounded by the ambiguity surrounding leadership roles and decision-making processes.

This dissertation explores transversal collaboration as an avenue for enhancing the alignment and cohesion around shared tasks in public service delivery. Transversal collaboration is characterized by a structured and static foundation for collaborating and focuses on securing alignment and cohesion across organizational demarcations through developing and sustaining a shared direction, relational and structural alignment, and commitment to shared tasks. Further, it develops a comprehensive theoretical framework to unravel transversal collaboration. This framework encompasses elements such as transversal leadership, collaborative self-efficacy, collaborative engagement, and interorganizational coordination and theorizes on their relationship. The empirical investigations within this dissertation are situated in the Danish healthcare sector and encompass a diverse range of stakeholders, including medical directors, physicians, nurses, and occupational therapists.

The dissertation introduces novel concepts, beginning with the conceptualization of transversal leadership and collaborative self-efficacy. It further pioneers the development and validation of measurement scales to assess these constructs, targeting both frontline managers and employees. The ambition of transversal leadership is to direct, align, and commit their employees to shared tasks with actors outside their own managerial jurisdiction. Collaborative self-efficacy focuses on individuals' beliefs in their capability to contribute to collaborative processes and ends and constitutes a potential mechanism through which transversal leadership can affect employees. Collaborative processes and ends include formal and informal interaction, shared rules, structures, norms, and building reciprocity.

Empirically, the dissertation examines the interplay between transversal leadership and interorganizational coordination, using a team-based leadership training program as a focal point. It shows a positive impact on relational coordination, structural coordination mechanisms, and collaborative quality among participating leaders and their frontline managers, albeit not among

their employees. This illustrates that it is possible to develop and train leadership collaboratively and that the effects of training can permeate hierarchical layers.

The dissertation also assesses the relationship between transversal leadership and collaborative engagement, as well as collaborative self-efficacy as a potential mechanism linking the effect of transversal leadership to collaborative engagement. It demonstrates that employees who experience high transversal leadership show increased engagement in collaborative initiatives compared to employees who experience low transversal leadership. The increased engagement is evident in the employees' vigor and dedication as they continue longer, spend more time, and contribute more behaviorally to the initiative. These causal effects underline that leadership matters for transversal collaboration, although the effect is not found to be caused by an increase in collaborative self-efficacy.

The main contributions of the dissertation are the introduction of a framework for studying transversal collaboration, the development and validation of measurement scales for transversal leadership and collaborative self-efficacy, and the exploration of team-based leadership training as a means to improve transversal leadership. The dissertation further provides causal insights into how transversal leadership affects collaborative engagement, collaborative self-efficacy, and interorganizational coordination, highlighting its significance for strengthening collaboration between public organizations. It does so by employing innovative research designs and measurement tools, enhancing our understanding of organizational and leadership dynamics in collaborative public service delivery.

Dansk resumé

Interorganisatorisk samarbejde spiller en afgørende rolle i at opnå samhørighed og sammenhæng i leveringen af offentlige services. Samarbejder står dog over for betydelige udfordringer på grund af den funktionelle og jurisdiktionsmæssige adskillelse af organisationer, der medfører forskellige kerneopgaver, faglige normer, kulturer og komplekse styringsstrukturer. Disse udfordringer manifesterer sig ofte som konflikter om ressourceallokering og forværres af uklarhed omkring ledelsesroller og beslutningsprocesser.

Denne afhandling udforsker tværgående samarbejde som en vej til at forbedre samhørighed omkring fælles opgaver i relation til leveringen af offentlig services. Tværgående samarbejde karakteriseres af et struktureret og statisk grundlag og fokuserer på organisationers evne til at sikre sammenhæng og samhørighed på tværs af organisatoriske skel ved at udvikle og opretholde en fælles retning, relationel og strukturel afstemning samt engagement i fælles opgaver. Derudover udvikler afhandlingen en omfattende teoretisk ramme til at belyse kompleksiteten af tværgående samarbejde. Denne ramme omfatter elementer som tværgående ledelse, tiltro til egne samarbejdsevner, samarbejdsengagement og interorganisatorisk koordination og teoretiserer om deres forhold til hinanden. De empiriske undersøgelser i denne afhandling er gennemført inden for den danske sundhedssektor og omfatter en bred vifte af aktører, herunder medicinske direktører, læger, sygeplejersker og ergoterapeuter.

Afhandlingen introducerer nye begreber, begyndende med konceptualiseringen af tværgående ledelse og tiltro til egne samarbejdsevner. Den omfatter også udviklingen og valideringen af skalaer til at måle begge begreber. Ambitionen i tværgående ledelse er at sikre en fælles vision, afstemme og forpligte medarbejdere til fælles opgaver med aktører uden for deres eget ledelsesmæssige kompetenceområde. Tiltro til egne samarbejdsevne fokuserer på individets tro på deres evne til at bidrage til samarbejdsprocesser og -mål og udgør en potentiel mekanisme, gennem hvilken tværgående ledelse kan påvirke medarbejdernes engagement og adfærd. Samarbejdsprocesser og -mål omfatter formel og uformel interaktion, fælles regler, strukturer, normer og opbygning af gensidighed.

Empirisk undersøger afhandlingen samspillet mellem tværgående ledelse og interorganisatorisk koordination ved hjælp af et teambaseret ledelsestræningsprogram. Den viser en positiv effekt på relationel koordination, strukturelle koordineringsmekanismer og samarbejdskvalitet blandt deltagende le-

dere og deres frontlinjeledere, men ikke blandt deres medarbejdere. Dette illustrerer, at det er muligt at udvikle og træne ledelse i fællesskab, og at træningseffekterne kan trænge igennem hierarkiske lag til en vis grad.

Afhandlingen undersøger også forholdet mellem tværgående ledelse og samarbejdsengagement samt tiltro til egne samarbejdsevner som en potentiel mekanisme, der forbinder effekten af tværgående ledelse til samarbejdsengagement. Den viser, at medarbejdere, der oplever høj tværgående ledelse, viser øget engagement i samarbejdsinitiativer sammenlignet med medarbejdere, der oplever lav tværgående ledelse. Det øgede engagement er tydeligt i medarbejdernes iver og engagement, da de fortsætter længere, bruger mere tid og bidrager (tæt på signifikant) mere adfærdsmæssigt til initiativet. Disse årsagssammenhænge understreger, at ledelse har betydning for tværgående samarbejde, selvom effekten ikke er fundet at skyldes en stigning i medarbejdernes tiltro til egne samarbejdsevner.

Afhandlingens hovedbidrag er introduktionen af en ramme til at undersøge tværgående samarbejde, udviklingen og valideringen af måleskalaer for tværgående ledelse og tiltro til egne samarbejdsevner samt udforskningen af teambaseret ledelsestræning som et middel til at forbedre tværgående ledelse. Afhandlingen giver yderligere kausale indsigter omkring, hvordan tværgående ledelse påvirker samarbejdsengagement, samarbejdsevne og interorganisatorisk koordination, hvilket understreger betydningen af ledelse for at styrke samarbejdet mellem offentlige organisationer. Dette gøres ved hjælp af innovative forskningsdesigns og måleværktøjer, hvilket forbedrer vores forståelse af organisatoriske og ledelsesmæssige dynamikker inden for samarbejde om leveringen af offentlige services.

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