Leadership for team learning

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A study on the relationship between leadership behavior and learning in multidisciplinary
public sector teams

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Date: 06-08-2021

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Chapter 1: Introduction

1.1 Introduction

While the public sector can be characterized by its traditional hierarchical structure, public organizations have increasingly started to opt for post-bureaucratic collaborative organizational structures (Ansell & Gash, 2008). Collaborative arrangements are assumed to be necessary to address many of the wicked societal problems public organizations have to deal with today (Bryson, Crosby, & Stone, 2006). By bringing together distinct actors and organizations, collaborative arrangements provide opportunities to pool organizational capacities such as resources, expertise, connections and knowledge to generate public value (Caldwell et al., 2017). A prime example of such collaborative organizational arrangements is the introduction of teams. Teams are defined as "a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more large social systems, and who manage their relationships across organizational boundaries."(Cohen & Bailey, 1997, p. 241). Compared to what individual employees can offer, teams are expected to provide more comprehensive solutions to complex problems. This is because the value of teamwork lies in the opportunity to bundle different expertise, experiences and viewpoints (Salas et al., 2009). This is especially true for multidisciplinary (inter-organizational) teams, as professionals with diverse expertise, knowledge and values are brought together in these teams (Van der Vegt & Bunderson, 2005).

Successful collaboration is not simply a matter of putting people with diverse and relevant knowledge together into the same room. For teams to be able to benefit from the broader range of knowledge and adequately solve complex problems, team members need to learn and integrate the different knowledge at hand. Indeed, scholars have argued that collective learning plays an important role in the endurance and success of collaborative arrangements (e.g., Ansell & Gash, 2008; Gerlak & Heikkila, 2011; Leach et al., 2013). Team learning has been identified as one of the most effective processes through which team members acquire, share, combine, and apply their knowledge resources (Argote et al., 2001; Matthieu et al., 2008; Schippers et al., 2008). Kozlowski and Ilgen (2006) characterize team learning as "a team-level property that captures the collective knowledge pool, potential synergies among team members, and unique individual contributions." (p. 86). It refers to the collective discourse activities carried out by the team members which enable the team to adapt and improve (Edmondson, 1999). Examples of such behaviors include sharing information, asking for help, reflective communication, and discussing errors. Learning allows for the creation of a shared

understanding that aligns collective action (Wong, 2004). Through learning, teams can improve their understanding of a specific situation, recognize a need for change, evaluate new possibilities, and detect unexpected consequences of previous actions (Edmondson 1999;2002).

Although team learning has been identified as a key factor in the functioning and effectiveness of teams, research has illustrated that learning is not self-evident (Edmondson 1999; Kayes, 2004). For example, teams may face the tendency to inadvertently spend time discussing common shared knowledge, rather than identifying and using the uniquely held information of its members (Gigone & Hastie, 1993). In addition, team members may be too accustomed to habitual routines or become overcommitted to their goals (Decuyper et al., 2010; Gersick & Hackman, 1990). Besides this, team members may be reluctant to engage in learning behaviors because it implies taking interpersonal risks. Team members might think they are seen as ignorant when asking questions or disruptive when seeking feedback from others (Edmondson, 2002). Given the importance of learning for the effective functioning of teams, it is thus crucial to create an understanding of what factors enhance team learning (Schippers et al., 2008).

Previous studies have found several drivers that enable learning in teams, such as team learning orientation (Ely & Thomas, 2001), team identity (Van der Vegt & Bunderson, 2005) and team cohesion (Van den Bossche & Gijselaers, 2006). However, leadership has often been recognized as the most critical factor that can stimulate team learning (Burke et al., 2006; Zaccaro et al., 2001). It has been argued that team leaders are responsible for the creation, maintenance and functioning of effective teams (Burke et al., 2006; Hackmann, 2002; Zaccaro et al., 2001). Consequently, they should be especially well-positioned to influence team processes such as learning.

1.2 Research objective and question

Leadership refers to "the process of influencing others to understand and agree what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (Yukl, 2010, p. 8). According to this definition, leadership is seen as a social influence process. The team leader plays an important role in shaping the team members' attitudes, behaviors and interactions. They can foster team interconnectivity and synergy. Zaccaro et al. (2001) argue that leaders influence the cognitive, motivational, affective and coordination processes within the team, which in turn influence the performance of the team. Based on this perspective, leadership thus constitutes a very relevant ingredient for team

learning.

Studies across a wide variety of settings have suggested the relationship between leadership and team learning. For example, Edmondson (2003) demonstrated that team leader coaching facilitates the process of speaking up in interdisciplinary action teams by mitigating power imbalances. Additionally, Srivastava et al. (2006) showed that empowering leadership encourages knowledge sharing by actively developing the self-management skills of the team members (e.g., by participative decision making). Furthermore, Schippers et al. (2008) found that transformational leadership is positively related to team reflexivity. They illustrated that through the combination of charismatic, intellectual and inspirational stimulation, transformational leaders create a shared vision, which in turn is related to increased reflection and communication about objectives, strategies, and processes within teams. Notwithstanding the evidence that leadership can stimulate team learning, additional studies are necessary that examine the link between leadership behavior and team learning. Indeed, Bunderson and Sutcliffe (2003) called for an increased understanding into how leaders influence the process of team learning. Likewise, Vera and Crossan (2004) stressed the need for more research on "the specific behaviors and mechanism through which leaders impact learning"(p. 222).

This study will tap into the call for more research on the relationship between specific leadership behaviors and team learning. It will focus on two traditional leadership styles, namely task-, and relations-oriented leadership. In contrast to external-oriented leadership which is directed at the external environment and change-oriented leadership which is mainly directed towards leading innovative improvements and adapting to external changes, these two leadership styles are deemed to be most relevant for team learning. These two behavioral styles "have proven to be among the most robust of leadership styles" (Fleishman, 1995, p. 51). In addition, they have been identified as functional in teams (Burke et al., 2006).

Specifically, this study will focus on the planning and supporting behavior of the formally assigned team supervisor. Yukl (2012) identified these two types of behaviors to be at the core of task- and relations-oriented leadership, and especially important for effective leadership. In addition, these behaviors are aimed at creating a frame of the tasks and building relationships, which are both said to be essential for learning to occur (Jehn & Rupert, 2008). Previous studies have mainly focused on how the empowering and developing (i.e., coaching) components of relations-oriented leadership relate to team learning (e.g., Edmondson 2003; Li & Zhang, 2016; Srivastava et al., 2006). Moreover, there is a lack of evidence on how specific task-oriented component behaviors relate to team learning. Finally, examining these two leadership behaviors simultaneously responds to a call to include different styles of leadership

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behaviors in team learning research (Koeslag-Kreunen et al., 2018).

The following research question will be examined: *What is the relationship between planning behavior and supporting behavior by the team supervisor and learning in multidisciplinary public sector teams?*

To test the relationship between planning and supporting behavior of the supervisor and team learning, survey data will be used that has been collected in a large research project on leadership behavior and teamwork in the setting of social welfare teams in the Netherlands. Social welfare teams, also known as neighbourhood teams, are teams wherein a wide range of professionals are collectively responsible for the social welfare services within a specific geographical district (Van Zijl et al., 2019). They can be considered a prime example of the 'post-bureaucratic' collaborative work forms that are starting to be more widely applied within public organizations. Social welfare teams consist of professionals from different disciplines and various public and non-profit organizations, such as nurses, youth workers and psychologists (Van Zijl et al., 2019). It has been argued that exposure to individuals with different expertise and knowledge is a key source for collective learning (Van der Vegt & Bunderson, 2005). Hence, social welfare teams are considered especially suitable for the purpose of this study.

1.3 Scientific relevance

By answering the research question, this study contributes to the existing public administration literature in three ways. First, by researching the team learning process, this study contributes to the current literature on teamwork in the field of public administration. In recent years, public organizations have increasingly started to introduce new organizational arrangements, shifting away from traditional bureaucratic structures (Groeneveld & Kuipers, 2014). The introduction of teams can be seen as a response to the increased complexity and dynamism of the work environment that public organizations face (Van der Voet & Steijn, 2020). Despite the increasing relevance of teams, studies on the incidence of teamwork in public organizations remain relatively scarce (e.g., Groeneveld and Kuipers, 2014; Van der Hoek, Groeneveld & Kuipers, 2016; Van der Voet and Steijn, 2020; Van Zijl et al., 2019; Van Zijl et al., 2020;Vashdi, 2013). This study responds to a recent call for more research into team process variables (Van der Voet & Steijn, 2020). Understanding team processes, and the relationship between leadership and team processes, is especially relevant for public organizations (Rainey, 2014). By studying the team learning process, this study provides a broader understanding of the internal and external collaboration in multidisciplinary teams. This teamwork concept is

relevant, as it is an important cognitive team process through which teams develop, renew and sustain performance results, and adapt to changes in the environment (Bell et al., 2012).

Second, by conceptualizing learning as a process, this study offers an alternative approach to studying learning in the public sector. Most previous work on team learning in the public sector has documented actual changes in collective knowledge or routines as a measure of learning (Foldy & Buckley, 2009; Richards & Duxbury, 2015). While conceptualizing team learning as an outcome does represent the most direct form of learning in teams, it can rarely be assessed directly and instead is typically inferred from changes in team performance (Kozlowski & Ilgen, 2006). Studying the learning process mechanisms that drive these outcome manifestations -changes in knowledge and behaviors - may therefore be considered a more valuable approach (Kozlowski & Bell, 2020).

Third, by studying the effects of leadership behavior on team learning, this study informs literature on public leadership. Leadership studies in public administration have been mostly focused on dyads and the leader-member exchange relationship, and do not provide a sufficient understanding of the relationship between leadership and team processes (Ospina, 2016; Tummers & Knies, 2013). Moreover, public management scholars have mostly focused on how broadly defined leadership styles affect team learning (Hassan & Jiang, 2021). By focusing on specific leadership behaviors, this study provides more concrete insights into what types of leadership behaviors public managers or leaders can use to increase the learning ability of their teams.

1.4 Practical relevance

This study is also of practical relevance for the social policy domain. The recent changes in the Dutch social welfare system not only reflect a change in responsibilities, but also a change in processes, methods, roles and culture (De Vries & Wolbink, 2018). Professionals in the social welfare teams have been assigned a new task that demands a different way of working: away from a supply-oriented approach and towards a demand-driven and tailor-made approach in collaboration with clients (Van Goor & Naber, 2016). These changes require transformative learning, which denotes "the re-examination of a deeply rooted meaning in such a way that old and familiar knowledge is reconstructed, the frame of reference is changed, and all kinds of explicit conceptions are subjected to critical self-examination." (De Waal, 2014, p. 88). Kooiman et al.(2015) argue that transformative learning can take place by exploring and experimenting. They state that it is important that professionals in the social welfare teams reflect on their actions (Kooiman et al., 2015). Through collective reflection, professionals

create new insights, and these can be used to create new experiences. Professionals should also test new work methods and engage in active cross-boundary dialogue (Kooiman et al., 2015). Through boundary crossing, team members can acquire feedback or advice on the direction the team is heading in. Such feedback may help the teams to become more efficient or effective. Similar to Kooiman et al. (2015), Transitiecommissie Sociaal Domein (2015) states that professionals in the social welfare teams must learn through reflection, from success and failure, and from what is (un) changeable and (im) possible. This is in line with Van Goor and Naber (2016) who state that the best learning experiences occur when both successes and failures are discussed. All in all, a joint process of searching, reflecting, experimenting and debating is thus needed in order to successfully transform (Kooiman, 2018).

1.5 Roadmap [Thesis Structure]

This thesis is divided into five chapters to allow for ease of reading. Succeeding this introductory chapter, chapter two will provide an overview of the relevant literature on the topic, state hypotheses, and set the conceptual framework. Chapter three will outline the research design and method of data collection. This includes the operationalization of the study variables, case selection, and a reflection on the validity and reliability of the study. In chapter four, the results of the data will be described and analysed. In concluding the thesis, chapter 5 will begin with a discussion and summary of the research findings. This chapter will also explore the theoretical and practical implications of the study, together with its limitations, and provide possible avenues for future research.

Chapter 2: Theory

This chapter presents the theoretical framework of this study. The first part of this chapter explicates an understanding of team learning constructs. Through a review of the existing literature, three team learning approaches are identified and presented: team learning curves, team learning outcomes and team learning processes. It further delves into the scholarly work on team learning processes and provides a clear conceptualization. The second part of this chapter reviews public leadership theories and defines the concepts of leader planning and supporting behavior, which form the independent variables of this study. Derived from theoretical insights, hypotheses are then formulated about the relationship between these leader behaviors and team learning. These hypothesized relationships are exhibited in a conceptual model.

2.1 Team learning

Over three decades ago, Senge (1990) was the first person to set the discussion of team learning rolling by suggesting the idea that teams represent the vehicle for learning in organizations. He stated that team learning is vital because "teams, not individuals, are the fundamental learning unit in modern organizations. This [is] where 'the rubber meets the road'; unless teams can learn, the organization cannot learn." (Senge, 1990, p. 10). Since then, scholars from a wide range of disciplines have contributed to the discussion of team learning.

In examining the scholarly work on team learning, three distinct research streams can be identified that provide insight into how teams learn (Edmondson et al., 2007). These three areas of research differ fundamentally in the used terminology, research methodology and conceptualization. Some studies concentrate on learning curves. In this research tradition, scholars test and explain variation in the rates of efficiency improvement within teams (e.g., Edmondson et al., 2003; Lapre et al., 2000). The second stream of research discusses learning as an outcome. This tradition suggests that learning is an outcome of communication and coordination that builds the shared knowledge base of the team members with regard to the team task, resources and context (e.g., Edmondson et al., 2007; Ellis et al., 2003; Lewis et al., 2005; Wilson et al., 2007). Those defining learning as an outcome have assessed it as a change in the team's knowledge (Zajac & Comfort, 1997). This may include the reinforcement of ideas, beliefs, and values. It has also been defined as a change in the behaviors, actions or routines of the team (Dekker & Hansén, 2004; Freeman 2007). Within the public management research, the outcome perspective of team learning was adopted by Foldy & Buckley (2009). Their qualitative longitudinal study found that team-level characteristics such as clear shared

objectives and effective leadership is related to the extent to which child welfare teams discard old routines and establish new ones. Likewise, Richards & Duxbury (2015) illustrated that the learning outcome – "a change in the collective knowledge of the group within specific knowledge domains" (p. 7) – is contingent on the extent to which middle managers encourage the group members to search for new relevant knowledge. In contrast to defining learning as an outcome, scholars in the third research stream investigate learning from a process perspective (e.g., Edmondson, 1999; Van den Bossche et al., 2006; Van der Vegt & Bunderson, 2005; Wong, 2004). Most notably, team learning in this research area is regarded as a verb. These researchers observe and measure team learning in terms of group behaviors and activities, as one aspect of a team's interaction process (Edmondson et al., 2007; Marks et al., 2001). Hence, these studies employ the traditional "input-process-output" (I-P-O) model and examine how managerial and contextual factors (input) influence the team learning process and, in turn, affect the team's output (McGrath, 1984).

This study will further explore and follow the latter research stream, wherein team learning is regarded as a process. Many team learning process definitions exist, but all appear to refer to learning as an ongoing cycle of activities carried out by the team members through which a team processes knowledge that allows it to adapt and improve (e.g., Argyris & Schön, 1978; Edmondson, 1999, 2002; Gibson, 2001; Kasl et al, 1997; Kolb, 1984; Van Offenbeek, 2001).

For example, Kolb (1984) regards learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (p. 41). The experiential learning theory of Kolb (1984) provides a learning cycle including the learning behaviors: (1) experiencing, (2) reflective observing, (3) conceptualizing and (4) experimenting. In this four-stage learning cycle, concrete experiences lead to observations and reflections. These reflections are then translated into abstract concepts with implications for action, which a team can test and, in turn, serve as guides in the creation of new experiences. A team and its members ideally touch all bases - experiencing, reflecting, thinking, and action - in a recursive process (Kayes et al., 2005). Similar to Kolb, Kasl et al. (1997) discern several learning activities: (1) framing, (2) reframing, (3) experimenting, (4) crossing boundaries, and (5) integrating perspectives. Framing, includes the team's initial perceptions of a situation or issue, based on prior experience. Through active cross-boundary dialogue and experimentation, team members are able to interact and listen to other perspectives. This results in new information which the team can use to reframe their own cognitive frameworks and adjust their own initial perceptions.

Actual learning at the team level, however, only occurs through a collective process of not only listening to others but integrating and sharing these views in the team as well (Burke et al., 2008; Kasl et al., 1997). In line with Kasl et al.'s conceptualization, Van Offenbeek's (2001) description of the team learning process comprises the following learning activities: (1) information acquisition, (2) information distribution, (3) convergent and divergent information interpretation, and (4) information storage and retrieval.

In this study, the team learning definition provided by Edmondson (1999) will be adhered. She conceptualizes team learning as "an ongoing process of reflection and action, characterized by learning behaviors such as (1) exploring, (2) seeking feedback, (3) experimenting, (4) reflecting on results, and (5) discussion of errors or unexpected outcomes of action." (Edmondson 1999, p. 353). According to Edmondson (1999), it is through these concrete learning behaviors that team members acquire, share, refine and combine task-relevant knowledge, and learning can be enacted at the group level. The elaborated definitions of the five learning behaviors of Edmondson's definition (1999) by Savelsbergh et al. (2009, p. 538) will be adopted:

1) *Exploring and co-construction of meaning:* team members ask questions, share knowledge, opinions and perspectives, and constructively manage differences in opinions.

2) *Seeking feedback*: team members seek and analyse feedback internally among the team and externally from outsiders to the team; to measure whether the team is doing the right things and doing things right.

3) *Experimentation*: team members attempt to do things differently than before.

4) *Collective reflection*: team members look back or ahead on actions, goals, working methods and strategies to discuss; eventually aimed at adapting actions.

5) *Error management*: team members discuss errors and explore how to prevent them.

Edmondson's process definition (1999) was also used in recent public management research on learning at the workgroup level. Hassan & Jiang (2021) studied 104 managers, 530 subordinates, and 104 of the managers' direct supervisors to examine the influence of inclusive leadership on the learning efforts and performance of law enforcement workgroups. Analysis of survey data showed that inclusive leadership behavior by the law enforcement managers had a positive effect on the learning efforts of their workgroups. This positive effect was fully mediated by workgroup psychological safety. Furthermore, higher learning efforts were

positively associated with higher workgroup performance. In other words, by downplaying status differences and acknowledging the unique value of each group member, the law enforcement managers facilitated a psychologically safe climate which allowed subordinate police officers to openly discuss and reflect on their performance and problems. These collective learning efforts, in turn, improved the performance of the workgroups.

Similar to Hassan & Jiang's (2021) examination of the role of inclusive leadership behaviors in facilitating learning, this study aims to further explore how leadership relates to team learning in the public sector.

2.2 Leadership

Research on organizational leadership in the field of public administration has expanded considerably in recent years (Ospina, 2016; Van Wart, 2013;Vogel & Masal, 2015). As a result, the field of public leadership covers a wide range of leadership styles which emphasize different activities and behaviors that are essential to leadership. The public leadership research domain has been mainly dominated by the transformational and transactional styles of leadership (Vogel & Masal, 2015). In the transactional perspective on leadership, leaders lead through social exchange. The leader rewards employees for high efforts or goal attainment, and actively monitors and punishes employees for mistakes or unsatisfactory results (Bass, 1985; Jensen et al., 2019). Transformational leadership puts strong emphasis on the visionary character of leadership, with leaders guiding their employees by providing a sense of meaning (Bass, 1985; Van Wart, 2013). Transformational leaders motivate employees to transcend their own interest and align them with organizational goals (Jacobsen & Andersen, 2015). In this type of leadership, leaders articulate a vision, encourage employees to be innovative and pay attention to the needs of their employees. Besides these dominant leadership styles, many public management scholars identify a more interpersonal leadership perspective (e.g., servant leadership) where the interaction between the leader and employee is emphasized (Van Dierendonck, 2011; Van Wart, 2013). Characteristics such as stewardship, authenticity and humility are regarded as essential qualities of a leader. In this type of leadership, leaders take responsibility for the larger organization, empower their employees and foster trust and cooperation (Van Dierendonck, 2011). Recent scholarship has also focused on a network style of leadership. Here, leadership is used to mediate between stakeholders and steering them through the collaborative process (Ansell & Gash, 2008). This means that leaders examine the

network of available stakeholders, connect the stakeholders to each other, facilitate exploration of solutions to address problems, and engage the involved stakeholders (Klijn et al., 2010).

Notwithstanding the relevance of these more recent leadership approaches for the topic of team learning (e.g., Ortega et al., 2014; Raes et al., 2013), this study adopts a more classical approach to leadership and focuses on the classic dichotomy between task- and relations-oriented leadership. Task-oriented leadership, also referred to as directive leadership or initiating structure, is aimed at "ensuring that people, equipment, and other resources are used in an efficient way to accomplish the mission of the group" (Yukl, 2012, p. 69). In contrast, relations-oriented leadership, also referred to as consideration or employee-centred leadership, is used "to enhance member skills, the leader-member relationship, identification with the work unit and commitment to the mission." (Yukl, 2012, p. 71).

According to Fleishman et al. (1991), the dichotomy of task- and relations-oriented leadership is the most common classification of leadership in literature. Although leadership research has branched off in a number of directions, the interest in task- and relations-oriented leadership has endured (Fernandez, 2008). Indeed, reviews on team effectiveness and leadership research illustrated that these leadership styles are still relevant today (Burke et al., 2006; Judge et al., 2004;Kozlowski & Ilgen, 2006) In addition, the recent meta-analysis by Koeslag-Kreunen et al. (2018) illustrated that both task- and relations-oriented leadership styles are important to facilitate team learning behavior. Finally, Savelsbergh et al. (2015) suggested that these leadership styles "have widespread face validity in organizational practice" (p. 408)

Specifically, this study examines the relationship between planning and supporting behavior of the formally assigned team supervisor and team learning. Leader planning behavior involves deciding what to do, how to do it, who will do it and when it will be done by. In contrast, leader supporting behavior is congruent with building trust and cooperative relationships. Yukl (2012) identified these two behaviors as the core components of the broadly defined task- and relations-oriented leadership styles. These specific behavioral components were also selected as they focus on two dimensions that are essential to engage in team learning: social and task embeddedness. Teams need maintained relationships among its team members to make learning behaviors such as discussing errors or seeking feedback possible (Jehn & Rupert, 2008). In addition, team members need a frame of the team tasks or goals in order to reflect on the current knowledge base (Wong, 2004). Moreover, team learning research that integrates both task- and relations-oriented leadership behaviors is scarce (Koeslag-Kreunen et al., 2018). By examining planning and supporting behavior, this study thus responds to the call

to move from an either/or approach to a both/and approach in organizational behavior literature (Koeslag-Kreunen et al., 2018; Quinn, 1988).

2.2.1 Leader planning behavior

Planning behavior by the leader involves "making decisions about objectives and priorities, organizing work, assigning responsibilities, scheduling activities, and allocating resources among different activities" (Yukl 2012, p. 70). In other words, it means that the leader decides what to do, how to do it, who will do it, and when it will be done by. This definition of planning is similar to Wilson et al.'s (1990) managerial skill of orderly work planning, which is the ability to organize the work flow. It is also in line with Luthans & Lockwood (1984) who identified leader planning behavior to include: setting goals and objectives, defining tasks needed to accomplish goals, scheduling, assigning tasks, providing instructions, coordinating activities and organizing work. Yukl's (2012) broad definition includes many subvarieties of planning, ranging from activity planning to project planning. Activity or operational planning involves the scheduling of activities and determination of task assignments (Yukl 2010;2012). Project planning includes the development of detailed action steps, sequencing and scheduling them, deciding who does each action step, and allocating the resources that are necessary for the achievement of the action steps (Yukl, 2010; 2012). Planning also includes the development of procedures for avoiding potential problems, as well as determining how time to different activities should be allocated in such a way that the team objectives will be achieved without delay and duplication of effort (Yukl, 2010; 2012).

Firstly, planning behavior by the team supervisor may contribute to team learning by improving communication and understanding among team members (Sarin & McDermott, 2003). By developing plans for the work, scheduling the team's task, coordinating the team members' activities and developing explicit action steps, the team supervisor reduces ambiguity about the roles, activities and responsibilities of their team members. Structure allows for the development of a shared understanding of the team's tasks and the team members' unique roles that will be necessary to successfully complete the tasks (Cannon-Bowers et al., 1993). This shared understanding has been found to reduce dysfunctional communication and improve the transference of information among team members (Porter & Lily, 1996; Sarin & McDermott, 2003; Van Ginkel & Knippenberg, 2008).

Secondly, a team supervisor who initiates structure may induce team learning, as structuring behavior helps to guide discussions (Van der Haar et al., 2017). Clear structure and plans keep focus in the discussion and provide direction to the learning process (Savelsbergh

et al., 2015). In other words, planning behavior by the team supervisor guides the team members' activities that are necessary for the attainment of the team's objectives. Without a clear plan to guide thinking, team members can become overwhelmed by the information overload, which may hinder them to engage in learning activities (Van der Haar et al., 2017).

Hypothesis 1a: Planning behavior by the team supervisor is positively related to learning in multidisciplinary teams.

Planning behavior by the team supervisor can also be negatively related to team learning because it may hamper the self-management potential of the team, through a prescription of what, when, and how (Savelsbergh et al., 2015; Stewart & Manz, 1995). In other words, planning behavior by the team supervisor can undermine the decentralized and autonomous nature of the team approach. Planning behavior by the team supervisor may even limit the team members' opportunities to engage in activities such as discussing errors, experimenting, and reflecting on processes (Savelsbergh et al., 2015). Structuring may also foster tunnel-visioned team members who solely focus on their own task requirements and responsibilities, rather than coordinating and sharing information with the whole team (Bunderson & Boumgarden, 2010;Lorinkova et al., 2013).

Hypothesis 1b: Planning behavior by the team supervisor is negatively related to learning in multidisciplinary teams.

2.2.2 Leader supporting behavior

Leaders use supporting behavior to show positive regard, build and maintain close interpersonal relationships, and help team members deal with stressful situations (Yukl, 2012). Supporting behavior by the leader includes "showing concern for the needs and feelings of individual team members, listening carefully when a member is worried or upset, providing support and encouragement when there is a difficult task, and expressing confidence that someone can perform a difficult task" (Yukl, 2012, p. 71). Yukl's (2012) definition of leader supporting is aligned to Halpin and Winer's (1957) definition of leader consideration, which refers to the provision of friendship, warmth, mutual trust and respect in the relationship between the leader and members of the team (Halpin & Winer, 1957). It is also similar to House's (1971) concept of supportive leadership. According to House (1971), supportive leaders focus on the well-being of their team members and have deep concern for their needs,

preferences and satisfaction. All in all, supportive leaders are friendly, considerate, approachable and treat others with respect.

Firstly, a supportive team supervisor may facilitate team learning by making the team members feel pleasant and safe in the team environment (Edmondson, 1999). By being respectful, approachable and providing non-defensive responses to questions, a supportive team supervisor evokes an increased level of psychological safety within the team (Edmondson, 1999; House & Dessler, 1974). According to Edmondson (1999), a psychologically safe team climate can be characterized by "interpersonal trust and mutual respect in which team members are comfortable being themselves" (p. 354). Edmondson suggests that creation of such a psychologically safe team climate encourages team members to openly speak up without the fear of getting punished, embarrassed or rejected. In other words, team members will feel more comfortable to engage in learning behaviors because they do not expect to receive penalties or negative perceptions from their leader (Ortega et al., 2014).

Secondly, supportive team supervisors provide team members with a sense of support, interest, and appreciation. They make sure that the team members feel good about themselves and recognize their inputs as valuable and important (House & Dessler, 1974; Sarin & McDermott, 2003). Accordingly, team members are likely to receive fair recognition by a supportive supervisor for their ideas, which can make them more motivated to share knowledge as well as reflect openly on experiences, admit mistakes and ask feedback (Srivastava et al., 2006).

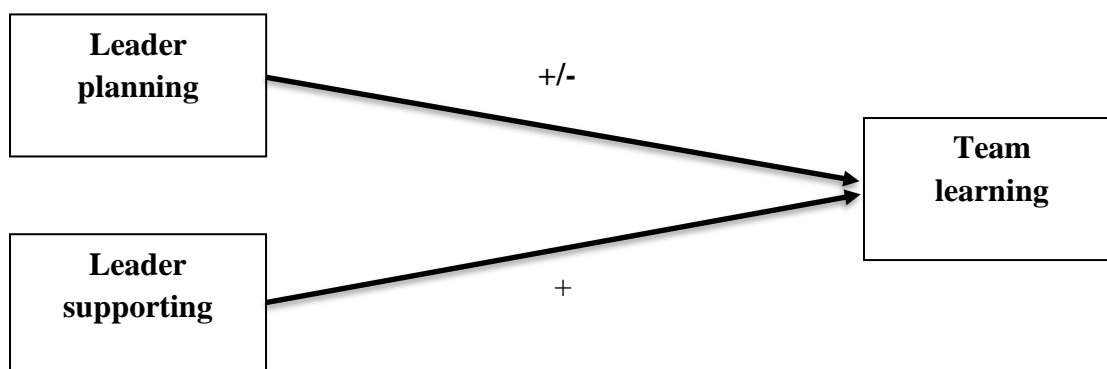**Hypothesis 2:** Supporting behavior by the team supervisor is positively related to learning in multidisciplinary teams.

Figure 1. Conceptual model

Chapter 3: Methodology

In this chapter, the methodology of this study is explained. Firstly, the research design is presented and the empirical setting is explained and justified. Secondly, the method of data collection is described. This is followed by the operationalization of the used variables. Thereafter, the analysis strategy is discussed. Lastly, this research is evaluated in terms of reliability and validity.

3.1 Research design

The goal of this research is to investigate the relationship between leader planning and supporting behavior and team learning. To accomplish this goal, this study employed a quantitative, large-N cross-sectional design. Quantitative research is often conducted in the field of public management and especially useful for research with a focus on human attitudes and behavior (Groeneveld et al., 2015). Large-N studies are considered most appropriate to uncover general relationships between variables (Toshkov, 2016). Furthermore, these studies are better suited for testing or applying theory, rather than generating new ones (Toshkov, 2016). This study was characterized by a cross-sectional design. Survey data was collected from a sample of the population at a single point in time (Toshkov, 2016). Cross-sectional research allows "observation of phenomena in more neutral, realistic settings, increases the size of the populations studied, and allows the testing of hypotheses that do not lend themselves easily to experimental designs" (Johnson et al., 2016, p. 204). Overall, this research design suited the deductive approach of this study. It provided opportunities to explore the hypothesized relationships between leader behavior and team learning perceptions, which were drawn out of existing theories.

3.2 Empirical setting

This study took place in a setting of multidisciplinary social welfare teams in the Netherlands, which are also called neighbourhood teams. These teams have been introduced in the Netherlands from 2015 onwards in response to a welfare reform that decentralized social and healthcare responsibilities from the national to the local level (Dijkhoff, 2014). Whereas social and healthcare professionals were employed in fragmented and discipline-oriented regional organizations, the teams exemplify a new way of working in which professionals from different disciplines bundle their expertise in a single coherent approach (Van Zijl et al., 2019). As such,

these teams can be considered a prime example of the 'post-bureaucratic' collaborative work forms starting to be widely applied in public organizations.

The neighbourhood teams commonly consist of professionals with different disciplinary backgrounds (e.g., youth work, financial support, pedagogy, psychology, addiction) that work for various professional care organizations, and are collectively responsible for providing social welfare services within a specific geographical district (i.e., neighbourhood) of a municipality (Dijkhoff, 2014; Van Zijl et al., 2019). The team-based organizational structure allows social and healthcare professionals to better utilize their different knowledge and perspectives, to be in close proximity to their clients and to reduce bureaucracy (Van der Voet & Steijn, 2020). The structure and organization of the neighbourhood teams vary across municipalities, but the teams can be considered relatively homogenous as they all consist of social and healthcare professionals providing care in a local context (Van der Voet & Steijn, 2020).

Neighbourhood teams present a good case in studying teamwork processes (e.g., learning) because of the high levels of interdependencies among its team members. In contrast to studying workgroups such as Hassan & Jiang (2021), these team members have to work together in order to accomplish the team's tasks and goals (Groeneveld & Kuipers, 2014). In addition, the high levels of functional heterogeneity in the neighbourhood teams make the teams especially relevant for studying team learning. Following the information/decision-making perspective, heterogeneity leads to increased intellectual stimulation, cognitive processing, and maximum use of information (Shin & Zhou, 2007). Specifically, it is argued that interaction with dissimilar others promotes the process of learning by "exposing individuals to new paradigms and perspectives and by enabling the cross-fertilization of ideas" (Van der Vegt & Bunderson, 2005, p. 534).

3.3 Methods of data collection

To test the hypotheses, survey data were used that have been collected in a larger research project on social welfare teams in the Netherlands. Between September 2020 and December 2020, an online survey was conducted among social and healthcare professionals of neighbourhood teams in 5 Dutch municipalities. Convenience sampling was used to approach the 5 municipalities. Within the municipalities, all teams were asked to fill in the survey. The professionals were invited to participate in the study through an email in which they were informed about the purpose of the study and guaranteed anonymity. Given the organizational

differences between municipalities, the professionals of the teams received a survey that was adapted to the terminology of their municipality; for example "supervisor" was changed to "coach", "team leader" or "coordinator". At least two reminders were sent to increase the response rate. In total, 844 of the 2003 professionals working in 87 neighbourhood teams included in the study completed the online survey (a 42.1% response rate). Neighbourhood teams were included in the final sample if at least 30% of the team members had completed the survey. As a result, 70 teams and 761 professionals were selected for the analysis. The responses within these teams also differed substantially: between 1 and 25 team members filled in the online survey (M= 11 and SD = 5.07). The professionals were by a large majority female (88.6%) and ranged in age from 20 to 65 years old (M= 42 years). Similarly, the professionals varied greatly in terms of experience levels, ranging from newcomers with less than 1 year experience to veterans with over 48 years of experience. A complete overview of the respondents' characteristics can be found in Appendix A.

3.4 Operationalization of variables

The measurement of the concepts was based on previously validated scales. Each item was measured on a five-point Likert scale, ranging from 1 (totally disagree), 2 (disagree), 3 (neither disagree nor agree), 4 (agree) to 5 (totally agree). Cronbach's alpha (α) was applied to every concept to check the inter-item validity of the measurement scales. All items were translated into Dutch and slightly adjusted to fit the study's setting. An overview of all of the Dutch items used to measure the dependent and independent variables can be found in Appendix B.

Team learning. The dependent variable, team learning, was measured using 12 items from the measurement instrument for team learning behaviors by Savelsbergh et al. (2009). Team learning was defined as a multidimensional construct consisting of four behavioral dimensions, namely (1) reflection, (2) feedback, (3) experimentation, and (4) error management. Examples of items include the following: "As a team, we regularly discuss how effective we are in collaborating" (reflection), "We seek feedback on our methods" (feedback), "In our team, we experiment with other working methods" (experimentation), and "In this team, we think that it is useful to analyze errors" (error management). A list of items can be found in Table 1.

Table 1. Team learning items

Team learning	
Reflection	
TL_1	"As a team, we regularly discuss how effective we are in collaborating"
TL_2	"Our team often reconsiders our working procedures"
TL_3	"We often discuss our team's working methods"
Feedback	
TL_4	"We seek feedback on our methods"
TL_5	"We analyze our performance in accordance with other teams"
TL_6	"We ask feedback from internal and external stakeholders on our results"
Experimentation	
TL_7	"In our team, we experiment with other working methods"
TL_8	"Our team tests new working methods"
TL_9	"Together, we plan to test new working methods"
Error management	
TL_10	"After making a mistake, the team tries together to analyze what caused it"
TL_11	"If something has gone wrong, the team takes the time to think it through"
TL_12	"In this team, we think that it is useful to analyze errors"

A factor analysis with principal components extraction (PCA) and direct oblimin rotation was conducted to check the validity of the measurement scale. The Kaiser-Meyer-Olkin measure score supported the sampling adequacy for the analysis with a KMO of .918. Furthermore, a Bartlett's test of Sphericity indicated that correlations between the items were sufficiently large ($\chi 2$ = 10220,316 p <0.01). The analysis resulted in a four-factor solution (eigenvalues >1) of which the first factor explained 45.27% of the variance, the second 13.21%, the third 6,43% and the fourth 5,76%, a total explained variance of 70,66%. The scree plot also revealed a structure with four factors. Table 2 shows the factor loadings of each item after rotation.

The factor loadings indicate that the experimentation items (TL_7, TL_8, TL_9) cluster on a different factor than the items of the other behavioral dimensions of team learning. Therefore, these three items were excluded from the main analysis. Considering the importance of experimentation for the transformation of the Dutch social welfare system, however, it was decided to do an additional analysis with experimentation as the dependent variable. The 9 included items measuring team learning returned a Cronbach's alpha (α) = .911, indicating high reliability (Field, 2018). The reliability analysis for the experimentation scale returned a Cronbach's alpha (α) of .838, similarly indicating high reliability.

Table 2. Results PCA (N=761)

Item	Factor 1	Factor 2	Factor 3	Factor 4
As a team, we regularly discuss how effective we are in collaborating.	.624			
Our team often reconsiders our working procedures.	.615			
We often discuss our team's working methods.	.736			
We seek feedback on our methods.	.730			
We analyze our performance in accordance with other teams.	.556			
We ask feedback from internal and external stakeholders on our results.	.452			
In our team, we experiment with other working methods.				.881
Our team tests new working methods.				.889
Together, we plan to test new working methods.				.678
After making a mistake, the team tries together to analyze what caused it.	.815			
If something has gone wrong, the team takes the time to think it through.	.922			
In this team, we think that it is useful to analyze errors.	.890			
Develops short-term plans for accomplishing the team's tasks.			-.900	
Plans and organizes team activities to use people, equipment, and resources efficiently.			-.870	
Schedules team activities to avoid delays.			-.858	
Shows concern for the needs and feelings of individual members of the team.		.843		
Shows sympathy and understanding when a team member is worried or upset.		.923		
Provides support and encouragement when there is a difficult task.		.815		

Note. Factor loadings >.40 are printed in bold.

Leader planning. The independent variable, leader planning behavior, was measured by 3 items based on the planning scale from Yukl's Managerial Practices Survey (2012). The wording of the items varied slightly to fit the organizational differences between municipalities. The questions start with "My supervisor…", "My coach…", "My team leader…" or "My coordinator…". An example item is: "My supervisor develops short-term plans for accomplishing the team's tasks". This study measured team members' perceptions of their leader's planning behavior. This approach is a favoured method for measuring leadership, as using employees' ratings of leadership, rather than the leader's self-ratings of leadership, prevents self-rating bias (Jacobsen & Andersen, 2015).

Leader supporting. The independent variable, leader supporting behavior, was measured by 3 items based on the supporting scale from Yukl's Managerial Practices Survey (2012). The wording of the items varied slightly to fit the organizational differences between municipalities. The questions start with "My supervisor…", "My coach…", "My team leader…" or "My coordinator…". An example item being "My supervisor provides support and encouragement when there is a difficult task". Similar to leader planning behavior, team members' perceptions of their leader's supporting behavior were measured. A list of all items used to assess the independent variables can be found in Table 3.

Table 3. Leadership items

Planning	
HL_P_1	"Develops short-term plans for accomplishing the team's tasks"
HL_P_2	"Plans and organizes team activities to use people, equipment, and resources efficiently"
HL_P_3	"Schedules team activities to avoid delays"
Supporting	
HL_0_1	"Shows concern for the needs and feelings of individual members of the team"
HL_0_2	"Shows sympathy and understanding when a team member is worried or upset"
HL_0_3	"Provides support and encouragement when there is a difficult task"

The Cronbach's alpha (α) of the planning scale was .899 and did not increase if any item was deleted. The reliability analysis for the supporting scale returned a Cronbach's alpha (α) of .894. Both scales had good reliability scores (Field, 2018).

Control variables. The control variables that were included in the study were team size and team tenure. Team size is seen to influence team processes in a way that a larger team suffers more from coordination issues (Smith et al., 1994). In addition, team size may reduce efforts to learn from each other (Sarin & McDermott, 2003). Team sizes were obtained from the municipalities' administrations and ranged from 2 to 51 team members. Team tenure can

influence team processes (e.g., learning) because "team composition-outcome relationships are likely to be variable over time and need to be considered" (Matthieu et al., 2014, p. 146). Team tenure was established as the average number of months that team members have been working in the team.

3.5 Methods of analysis

3.5.1 Aggregation of team member data

The unit of analysis in this study is on the team level. This means that the concepts of team learning, experimentation, leader planning and leader supporting, which were measured on the individual team member level, need to be aggregated to the team level. In order to determine whether aggregation to the team level is justified, the intra-class correlations scores were calculated (ICC). ICC1 indicates the variance accounted for by team membership and ICC2 indicates the reliability of the team mean scores (Bliese, 2000). One-way ANOVA's were performed for both the independent variables and the dependent variable. To calculate the ICC's, information about the team size in the sample is needed. Because the team sizes differed considerably, ranging from 2 to 51 team members, the 'average' team size is estimated (Bliese & Halverson, 1998, p. 168):

$$N_g = (1 \text{ (Number of teams} - 1)) \times (\Sigma \text{ Team sizes} - (\Sigma \text{ Team sizes}^2 / \Sigma \text{ Team sizes})) = 1/(70-1)) \times (1636-(47336/1636)= 23.29$$

From Table 5, it can be read that team membership has a small association (.04 and .03) with the professionals' ratings of team learning and experimentation, and a medium association with thinde professionals' ratings of leader planning and supporting (.10 and .08). The ICC2 values indicate that 51% of the variance in team learning, 44% of the variance in experimentation, 73% of the variance in leader planning, and 68% of the variance of leader supporting is explained at the team level. As leader planning and leader supporting ICC1 values fall within the typical range of .05 and .20 and ICC2 values are above the .60 threshold (Bliese, 2000), aggregation to the team level is justified. The team learning and experimentation ICC scores are not sufficient enough, but since both of these variables have been conceptualized as a team level construct, aggregation to the team level is still judged to be acceptable.

Table 5. Intra-class correlations (N= 761)

	ICC1	ICC2	F
Team learning	.04	.51	2.06**
Experimentation	.03	.44	1.79**
Leader planning	.10	.73	3.72**
Leader supporting	.08	.68	3.08**

Note. ICC = intraclass correlation; MSB= mean square between teams; MSW= mean square within teams; k=estimated team size.

ICC1 = (MSB-MSW)/(MSB + (k-1) x MSW).

ICC2 = (MSB -MSW)/MSB.

F= MSB/MSW.

$**p < .01.$

3.5.2 Analytical strategy

The data were analyzed using IBM SPSS Statistics version 27. The analysis was based on the team mean scores of team learning, experimentation, leader planning, and leader supporting. Firstly, descriptive statistics were computed for all the research variables. Secondly, a bivariate correlation analysis (Pearson's *r*) was conducted to get a first impression of whether the independent variables and dependent variable are linked. Thirdly, the study's hypotheses were tested using regression analysis.

For both team learning and experimentation, three models were tested. First, two single models were tested that included only one of the leadership behaviors. Second, a combined model was tested that included both of the independent variables. In this model, the effect of leader planning, leader supporting and the control variables on the dependent variable was examined. By testing both leadership behaviors simultaneously, this study attempted to provide a more accurate and complete understanding of the relationship between the independent variables and dependent variable.

3.6 Reliability and validity

The study's research design and measurements have both strengths and weaknesses. The strength of this study is its reliability. The measurement of all constructs is based on previously validated scales, which simplifies the replicability of this study (Neuman, 2004). Moreover, all scales have good reliability statistics, indicating that the measurement instruments provide reliable observations (Neuman, 2004).

Besides this, the study also has some limitations. First, the team learning measurement

scale does not cover all behavioral dimensions of the construct. The factor analysis showed that the experimentation items loaded poorly on the team learning construct, and these items were therefore excluded from the analysis. Measurement validity is limited as a consequence (Neuman, 2004). A second limitation is that this study relies on the use of cross-sectional data. Data were collected at a single point in time, which limits the possibilities to make causal inferences (Field, 2018). Reversed causality cannot be ruled out, which raises doubts about the internal validity of this research.

Third, the study's findings could be subject to common method bias since leader planning and leader supporting were measured, together with the dependent variable team learning, in the same questionnaire based on individual team member perceptions (Podsakoff et al., 2012). Through aggregating the individual team members' responses to the team level, however, it was attempted to minimize potential individual response biases (Favero & Bullock, 2014). Furthermore, the use of a single questionnaire is a favoured approach because relying on a leader's assessment of their own leadership would be easily biased (Jacobsen & Anderson, 2015).

A final limitation of this research is its generalizability. Teams in a particular policy domain were studied, which means that our sample is not representative for the wide range of teams that exist in the public sector. Nevertheless, the social welfare teams share many contextual features that are commonly attributed to the public sector, such as high levels of red tape, goal ambiguity and professionalization (O'Toole & Meijer, 2014).

Chapter 4: Empirical findings

In this chapter, the results are presented and analysed. Firstly, descriptive statistics of the central variables in this study are provided. Secondly, a correlation analysis is performed to explore the possible relationships between the variables. Lastly, regression analyses are employed to test the study's hypotheses.

4.1 Descriptive statistics

Descriptive statistics for all studied variables are displayed in Table 6. As Table 6 shows, the mean scores of the main variables exceed the theoretical average (3.0) of a five-point Likert scale. The teams' ratings indicate that both planning and supporting behavior are used considerably by their supervisors. The team's ratings of leader supporting are relatively high with a mean score of 4.32. The teams differ greatly on leader planning; from a minimum score of 2.42 to a maximum score of 4.56. The average mean score for team learning is 3.51. Significant differences can be found between the separate behavioral dimensions. Reflection has the highest average mean score of 3.77, while feedback has the lowest average mean score of 3.23. Feedback also has the lowest minimum score (2.26) out of all the behavioral dimensions. This illustrates that it is not self-evident that teams seek feedback on their methods (TL_4), compare their performance with other teams (TL_5), and involve other stakeholders in the feedback process (TL_6).

The average mean score of experimentation (3.52) is relatively high compared to the other behavioral dimensions of team learning. However, the team's ratings differ considerably; from a minimum score of 2.61 to a maximum score of 4.78. This shows that not all teams experiment with other working methods, test new working methods, and plan to test new working methods.

Table 6. Number of items, Minimum, Maximum, Mean, and Standard Deviation (N=70)

	Items	Minimum	Maximum	M	SD
Team learning	9	2.69	4.47	3.51	0.35
Reflection		2.94	4.78	3.77	0.37
Feedback		2.26	4.30	3.23	0.40
Error management		2.67	4.53	3.52	0.39
Experimentation	3	2.61	4,78	3.52	0.38
Leader planning	3	2.42	4.56	3.63	0.53
Leader supporting	3	3.46	5.00	4.32	0.40
Team size	1	2	51	23.37	11.48
Team tenure	1	3	54	34.76	10.29

4.2 Correlation analysis

4.2.1 Team learning

Table 7 presents the results from the calculated Pearson's correlations with team learning as the dependent variable. The correlations show that leader planning ($r= .358, p < .01$) and leader supporting ($r= .393 , p < .01$) are significantly correlated with team learning. This suggests that an increase in both leader planning and supporting behavior is associated with an increase in team learning. Indeed, the relationship between leader planning and leader supporting is positive and relatively strong ($r= .641 , p < .01$), suggesting that team supervisors use both behaviors. The correlation table also suggests that team size relates negatively to team learning ($r= -.245 , p < .05$) and leader supporting ($r= -.249 , p < .05$). The negative correlation between team size and team learning is in line with the literature, suggesting that an increase in team size is associated with a decrease in team learning. Finally, a weak and insignificant correlation between team tenure and team learning is found. Given that all correlations are below .07 and the Variation Inflation Factors (VIF) scores are sufficiently below the threshold of 10, multicollinearity is likely not a problem (Field, 2018).

Table 7. Bivariate correlations and Variation Inflation Factors Team Learning (N=70)

	(1)	(2)	(3)	(4)	VIF
(1) Team learning					
(2) Leader planning	.358**				1.741
(3) Leader supporting	.393**	.641**			1.864
(4) Team size	-.245*	-.092	-.249*		1.151
(5) Team tenure	-.091	-.042	-.052	.225	1.084

*$p < .05$, two-tailed. **$p< .01$, two-tailed.*

4.2.2 Experimentation

The bivariate correlations with experimentation as dependent variable are shown in Table 9. In contrast to the relatively moderate and positive relationship between leader planning and team learning, a weak, positive and non-significant correlation between leader planning and experimentation is found ($r= .161 , p > .05$). Besides this, the correlation between leader supporting and experimentation is positive and relatively moderate ($r= .377 , p < .01$). The control variables are negatively and weakly correlated with experimentation. However, these correlations lack statistical significance ($p > .05$).

Table 9. Bivariate correlations Experimentation (N=70)

	(1)	(2)	(3)	(4)
(1) Experimentation				
(2) Leader planning	.161			
(3) Leader supporting	.377**	.641**		
(4) Team size	-.164	-.092	-.249*	
(5) Team tenure	-.163	-.042	-.052	.225

*p < .05, two-tailed. **p< .01, two-tailed.*

4.3 Regression analysis

The study's hypotheses were tested using multiple regression analyses. First, the direct relationships between each independent variable and the dependent variable were examined. Second, the relationship between both independent variables and the dependent variable was tested. Model 1 & 5 contain leader planning and the control variables, Model 2 & 6 contain leader supporting and the control variables, and Model 3 & 7 are the combined models including leader planning, leader supporting and the control variables.

4.3.1 Team learning

The results of the regression analyses with team learning as the dependent variable are presented in Table 8. As Table 8 shows, the first model with leader planning and the control variables explains a small portion of the variance in team learning (Adjusted R^2 = .137, F= 4.663, p <.05). The results indicate a significant, positive and slightly moderate relationship between leader planning and team learning (β=.338, $p < .01$). This means that teams with more planning-oriented supervisors reported greater team learning. The coefficients of team size and team tenure are weak and negative, but the relationships lack statistical significance.

Model 2 shows that 14.6% of the variance in team learning can be explained by leader supporting and the control variables (F= 4.934, p <.01). The results support a positive and slightly moderate relationship between leader supporting and team learning (β=.362, $p < .05$), indicating that supporting-oriented leaders stimulate learning among team members. Team size and team tenure have small negative effects on team learning, but these are non-significant.

The combined model with both leader planning and leader supporting as the independent variables explains a significantly larger amount of variance in team learning than each of the single independent variable models, amounting to 15.5% (F = 4171, p <.05). Although the significance of the relationships between both leadership behaviors and team learning in the combined model disappears, this model shows weak positive effects of leader

planning (β=.192, *p* > .05) and leader supporting (β =.234, *p* > .05) on team learning. Finally, Model 3 results in non-significant negative relationships for both control variables.

Table 8. Regression analyses Team learning (N=70)

	B (95% confidence intervals)	SE	β	t	p
Model 1					
Constant	2.885[2.260, 3.509]	.313		9.225	.000
Team size	-.006[-.013,.001]	.003	-.208	-1.304	.076
Team tenure	-.001[-.009, .007]	.004	-.029	-.256	.799
Leader planning	.221[.075, .368]	.074	.338	3.001	.004
Adjusted R² = .137 , F= 4.663**					
Model 2					
Constant	2.335 [1.440, 3.270]	.458		5.139	.000
Team size	-.004 [-.011, .003]	.004	-.138	-1.161	.250
Team tenure	-.003 [-.010, .005]	.004	-.078	-.682	.498
Leader supporting	.310 [.113, .508]	.099	.362	3.135	.003
Adjusted R² = .146 , F=4.934**					
Model 3					
Constant	2.366 [1.456, 3.277]	.456		5.190	.000
Team size	-.005 [-.012, .002]	.004	-.156	- 1.316	.193
Team tenure	-.002 [-0.10, .006]	.004	-.059	-.515	.608
Leader planning	.125 [-.065, .316]	.096	.192	1.312	.194
Leader supporting	.200 [-.058, .459]	.129	.234	1.549	.126
Adjusted R² = .155, F= 4.171**					

*p<.05, **p<.01.*

The non-significant positive relationships between both leadership behaviors and team learning in Model 3 could be a result of the small sample size at the team level. Besides this, it could be explained by the relatively high correlation between leader planning and leader supporting. When predictor variables share a high correlation, it becomes difficult to assess the unique contribution of each predictor variable towards explaining the dependent variable variance, resulting in unreliable regression coefficients (Field, 2018). However, it could also be the case that an interaction effect is present. This means that the effect of one independent variable differs depending on the level of the other independent variable. To create a better understanding of the results of Model 3, it was therefore decided to test for this interaction effect. To improve the interpretability of the regression coefficients, this analysis was run with standardized independent and control variables.

**Table 9.** Additional regression analysis Team learning (N=70)

	B (95% confidence intervals)	SE	β	t	p
Model 4					
Constant	3.439 [3.356, 3.521]	.041		82.893	.000
Team size	-.054[-.130, .023]	.038	-.155	-1.395	.168
Team tenure	-.024 [-.099, .050]	.037	-.070	-.650	.518
Leader planning	.068 [-.027, .162]	.047	.196	1.434	.156
Leader supporting	.101 [.002, .199]	.049	.291	2.046	.045
Interaction leader planning – leader supporting	.110 [.042, .178]	.034	.340	3.241	.002
Adjusted R² = .263 , F= 5.925**					

*p<.05, **p<.01.

As Table 9 shows, the fourth model offers a significantly better explanation for the difference in team learning (F= 5.925, $p <.01$), adding up to 26.3% of the variance. The results indicate a significant positive relationship between leader supporting and team learning (β=.291, $p < .05$). The control variables do not have significant direct effects on team learning. The positive effect of leader planning on team learning is not statistically significant (β=.196, $p > .05$). Nevertheless, when leader planning is combined with leader supporting, there appears to be a statistically significant interaction (β=.340, $p < .01$). This positive and slightly moderate interaction effect between leader planning and leader supporting on team learning is visualized in Figure 2.

Figure 2 includes two levels of leader supporting: low (scores below the mean) and high (scores above the mean). This figure shows that the strength of the relationship between leader planning and team learning changes as a function of leader supporting. When leader supporting is high, the correlation between leader planning and team learning is relatively strong. However, when leader supporting is low, the correlation between leader planning and team learning is almost non-existent. In other words, the effect of leader planning on team learning is indeed dependent on the level of leader supporting.

Figure 2. Interaction plot for Team learning
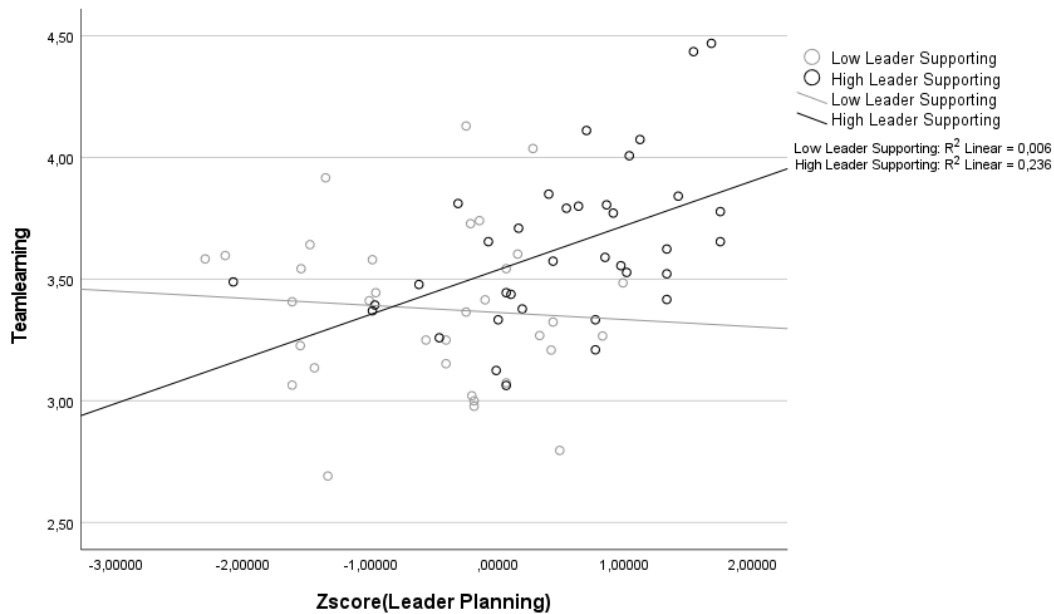
Taking the discussed analyses into account, the evidence for the hypotheses is mixed. The results of the single independent variable models (Model 1 & Model 2) show statistically significant and slightly moderate positive relationships between both leadership behaviors and team learning. However, the results of Model 3 show that these positive relationships become weak and non-significant when both independent variables are combined. As indicated above, this could be a result of the small sample size at the team level or the existence of an interaction effect as found in Model 4. Considering that supervisors in our current sample use both types of leadership behaviors and a larger amount of the variance in team learning can be explained by the combined model (15.5%), conclusions regarding the study's hypotheses are based on the third model. As a result, Hypothesis 1a, Hypothesis 1b and Hypothesis 2 are all rejected.

4.3.2 Experimentation

The results of the regression analyses with experimentation as the dependent variable are presented in Table 10. The results show that Model 5 cannot explain experimentation due to an insignificant F-value (Adjusted R^2 = .022, F = 1.511, p >.05). The regression coefficient of leader planning is weakly positive, but is not statistically significant (β =.144, p >.05). The regression coefficients of the control variables are also not significant. Model 6 offers a significantly better explanation for the variance in experimentation (F = 4.710, p <.01), amounting to 13.9%. The results show a slightly moderate positive relationship between leader supporting and experimentation (β=.379, p < .01), indicating that supporting-oriented leaders enhance experimentation within teams. The regression coefficient for team size is negligibly

negative and lacks statistical significance ($\beta = -.030$, $p > .05$). The relationship between team tenure and experimentation is also not significant ($\beta = -.176$, $p > .05$). Model 7 explains the largest amount of variance in team learning (Adjusted $R^2 = .144$, $F = 3.839$, $p < .01$). The combined model shows a significant positive and moderate relationship between leader supporting and experimentation ($\beta = .486$, $p < .01$). Compared to the positive effect of leader planning on team learning, a weakly negative and insignificant relationship is found between leader planning and experimentation ($\beta = -.160$, $p > .05$). Planning behavior by the team supervisor can thus hamper team members from experimenting. The regression coefficients of the control variables are not statistically significant.

Table 10. Regression analyses Experimentation (N=70)

	B (95% confidence intervals)	SE	β	t	p
Model 5					
Constant	3.406 [2.681, 4.130]	.363		9.387	.000
Team size	- .004 [-.012, .004]	.004	-.121	-.988	.327
Team tenure	-.005 [-.014, 0.04]	.004	-.130	-1.062	.292
Leader planning	.103 [-.067, .273]	.085	.144	1.207	.232
Adjusted R² = .022, F= 1.511 (ns)					
Model 6					
Constant	2.242 [1.241, 3.243]	.501		4.471	.000
Team size	-.001 [-.009, .007]	.004	-.030	-.250	.803
Team tenure	-.006 [-.015, .002]	.004	-.176	-1.526	.132
Leader supporting	.353 [.137, .569]	.108	.379	3.261	.002
Adjusted R² = .139, F=4.710**					
Model 7					
Constant	2.232 [1.232, 3.232]	.501		4.457	.000
Team size	.000 [-.008, .007]	.004	-.014	-.118	.906
Team tenure	-.007 [-.016, .001]	.004	-.192	-1.653	.103
Leader planning	-.141 [-.324, 0.95]	.105	-.160	-1.090	.280
Leader supporting	.454 [.170, 737]	.142	.486	3.193	.002
Adjusted R² = .141, F= 3.839**					

*$p < .05$, **$p < .01$.*

Chapter 5: Discussion

In this chapter, the results of this study will be discussed and analysed. Thereafter, the theoretical and practical implications of this study will be stated. Lastly, the limitations of this study will be discussed and recommendations will be done for future research.

5.1 Discussion

This study aimed to contribute to the teamwork literature in the field of public administration by answering the following research question: "*What is the relationship between planning behavior and supporting behavior by the team supervisor and learning in multidisciplinary public sector teams?*". Although the hypotheses of this study are rejected due to a lack of statistical power, the analysis shows interesting patterns that can be explored in future extensions of this research. The results suggest the existence of a positive relationship between leader planning and team learning. In addition to the moderate positive bivariate correlation between leader planning and team learning, the regression analyses show a positive relationship between leader planning and team learning. The single independent variable model (Model 1) shows a significant positive correlation between leader planning and team learning ($\beta=.338$, $p < .01$). Although the significance of the relationship between leader planning and team learning disappears in combination with leader supporting (Model 3), a weakly positive correlation is still found ($\beta=.192$, $p > .05$). This non-significant result could be explained by the interaction effect that was found in Model 4, which shows that the positive effect of leader planning is dependent on the level of leader supporting. The results suggest that leaders can support team learning by engaging in planning behavior. Through a prescription of what, when and how, leaders can reduce ambiguity about the team members' activities and provide clear focus and direction to the learning process. This is consistent with the findings of Savelsbergh et al. (2015), who found that task-oriented leadership behavior is related to team learning.

The findings also suggest the existence of a positive relationship between leader supporting and team learning. The bivariate correlations show a moderate positive correlation between leader supporting and team learning ($r= .393$, $p < .01$). This positive relationship is also found in the regression analyses. The single independent variable model (Model 2) shows a relatively moderate positive relationship between leader supporting and team learning ($\beta=.362$, $p < .05$). When combined with leader planning (Model 3), this relationship turns weakly positive ($\beta =.234$, $p > .05$). These results suggest that supervisors or leaders can support team learning by being supportive and approachable. Through making team members feel safe

and valued, leaders create a team environment in which team members feel comfortable to engage in learning behaviors.

Furthermore, the results of the analysis show that there is no significant association between the control variables and team learning. Although the bivariate correlation between team size and team learning is weakly negative, the regression analyses do not show a significant association between these variables. The assumption that a larger team may become out of control for interaction and participation can therefore not be confirmed (Smith et al., 1994).

To conclude, this study provides valuable insights into the relationship between planning and supporting behavior by the team supervisor and team learning. Although this study cannot confirm the hypotheses, it is believed that the results show a clear pattern when it comes to the direction of the relationship between both leadership behaviors and team learning. Leader planning and leader supporting seem to be positively related to learning in teams. However, greater empirical power is needed to confirm these positive relationships. It would therefore be desirable to have a larger sample size in future extensions of this research.

Besides the main analysis, this study also provides insights into the relationship between planning and supporting behavior of the team supervisor and experimentation in teams. The results of the analysis with experimentation as the dependent variable illustrate a clear positive relationship between leader supporting and experimentation. The single independent variable model (Model 6) shows a slightly moderate correlation between leader supporting and experimentation (β=.379, $p < .01$). This significant positive correlation between leader supporting and experimentation is even stronger in the combined model with leader planning (β = .486, $p < .01$). These results show that leader supporting is positively related to experimentation. By making sure that team members feel good about themselves and recognizing their inputs as valuable, supportive leaders may direct their team's attention toward discovering better ideas and experimenting with other working methods (Shin & Zhou, 2007). In addition to this, the results show a weakly negative relationship between leader planning and experimentation (β = -.160, $p > .05$). While planning behavior by the team supervisor enhances learning in teams, this behavior suggests to hamper team members from experimenting with new working methods. Planning may decrease experimenting by fostering team members who solely focus on their current tasks and responsibilities (Bunderson & Boumgarden, 2010). It may also be the case that team members lack the opportunities to try new working methods due to a prescription of what, when and how.

5.2 Theoretical implications

The present study adds knowledge to the current academic debate in several ways. First, this study contributes to the overall team learning literature by responding to calls for more empirical research on the relationship between leadership and team learning (Bunderson & Sutcliffe, 2003; Koeslag-Kreunen et al., 2018; Vera & Crossan, 2003). By studying planning and supporting behavior, this current study extends existing research which has been mainly focused on broadly defined leadership styles. According to Yukl's leadership taxonomy (2012), planning and supporting are effective behaviors that can be used to achieve various outputs. This study suggests that both planning- and supporting-oriented leadership can be used to stimulate learning in multidisciplinary social welfare teams.

Second, this study contributes to the teamwork literature in the field of public administration by answering calls for research on team processes (Van der Voet & Steijn, 2020). Previous team literature has been mostly focused on the effect of a team's inputs on team outcomes. Little attention has been paid to the processes that mediate the effects of these inputs on team outcomes (Marks et al., 2001). By focusing on the team learning process, this study opens the 'black-box' of team processes and provides a better understanding of the internal dynamics of public sector teams.

Third, this present study contributes to the public leadership literature by understanding the relationship between leadership and team processes (Rainey, 2014). Research on public leadership tends to focus on the dyadic leader-follower relationship. However, this study focuses on leadership behaviors targeted at team processes. Our results offer preliminary insights into how leadership supports the learning process in the context of social welfare teams.

5.3 Practical implications

This research offers important practical insights into specific leader behaviors that public managers or leaders of multidisciplinary public sector teams can use to increase the learning ability of their teams. Team learning is an important process through which teams are able to develop, improve and adapt knowledge successfully, and has been identified as a key factor in team effectiveness (Kozlowski & Ilgen, 2006). However, due to many potential barriers (e.g., groupthink, Abilene paradox, interpersonal risks), teams often fail to engage in effective team learning. This study suggests that team leaders can stimulate learning activities in their teams by engaging in planning and supporting behavior. First, leaders can foster learning behaviors that involve knowledge transfer and evaluation (i.e., seeking feedback, reflection and error

management) by engaging in planning behavior. By developing plans for the work, scheduling the team's tasks and coordinating the activities of their team members, leaders can keep a clear focus in the discussion and provide direction to these learning activities. In contrast, planning behavior inhibits active learning activities such as experimentation. Experimentation can be seen as an unplanned and chaotic team activity that moves teams away from familiar working methods and ideas (Decuyper et al., 2010). Leaders would limit the team members' opportunities to engage in experimenting due to a prescription of what, when and how.

Secondly, leaders can foster team learning by being supportive. Leaders should provide encouragement, be approachable, and emphasize the well-being and inputs of their team members. By doing so, a positive environment is created in which team members can engage in learning behaviors without the fear of being punished. Overall, the results of this study may help managers or leaders to develop a helpful mix of leadership behaviors to facilitate learning in their teams.

5.4 Limitations and directions for future research

Despite its contributions, this study also has some limitations that must be kept in mind. First, the cross-sectional character of our data limits the possibilities to assess causal relationships between the studied variables and increases the risk of common method bias. Data were collected at one given point of time, which limits the ability to draw conclusions about the direction of cause and effect. Lorinkova et al. (2012) showed that team leaders' structuring behaviors support teams in the beginning phase of a team process and that empowering leaders are more important in the end phase. This suggests that the phase of a team process plays a role in examining which leadership behavior is most important for team learning, and when. Researchers should take a longitudinal approach in future studies to examine the influence of leadership behavior on team learning over time. In such a longitudinal approach, it is also recommended to include the reciprocal effect of team learning on leadership behavior. Most studies focus on leadership as an input variable for team learning, but it is argued that team leaders might also adapt their behavior to the team's situation at hand (Burk et al., 2006; Day et al., 2004; Edmondson et al., 2001).

Second, the findings of this study revealed low ICC values for team learning and experimentation which could mean that the findings are attenuated (Bliese, 2000). The low ICC values suggest that the responses of the professionals within the individual teams differed substantively. Thus, although data aggregation was judged to be acceptable, future research could examine the causes of individual variability within teams. This is in line with Van

Knippenberg & Mell (2016) who state that, although team processes in theory invite shared perceptions of all team members, team processes are often not experienced homogeneously. Studying the differences in team learning perceptions may thus provide more relevant information than studying the shared perception of this process.

Third, this analysis focused on task-and relations-oriented leadership behaviors. Other categories of leadership behavior were not considered in this study. Burke et al. (2006) revealed a lack of studies pertaining to the relationship between specific leadership behaviors and team learning. Furthermore, researchers have suggested that the change-oriented dimension of leadership is related to team learning (Detert & Buris, 2007; Ortega et al., 2014). Future studies could examine whether other categories of leader behavior also relate to team learning or build upon the interactive effects that were found in the additional analysis.

Fourth, the final measurement scale for team learning was not optimal to test the hypothesized relationships. The final measure does not take into account the experimentation dimension of team learning, and therefore does not provide an accurate representation of the team learning construct. It is recommended that future studies use a measurement scale that is representative of all aspects of the construct. Finally, the findings of this study are not necessarily generalizable. Multidisciplinary teams are not reflective for the wide range of teams that exist in the public sector. Furthermore, the current sample is restricted to multidisciplinary teams in the social policy domain. The specific domain in which a team operates may influence team dynamics, and as such the findings of this study may not be confirmed in other policy domains (Mathieu et al., 2007).

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Appendix

Appendix A - Participant characteristics

Variable	M	SD	Minimum	Maximum	N
Age in years	42.05	11.24	20	65	751
Gender	1.90	.32	1	3	761
Female					674
Male					82
Other					5
Professional tenure in years	14.03	10.12	0	48	760
Education level	4.18	.47	1	6	761
Working hours per week	29.12	6.16	3	38	755

Appendix B – Survey items in Dutch

Team leren	
Reflecteren	
TL_1	"In ons team bespreken we regelmatig hoe effectief onze samenwerking is"
TL_2	"In ons team, heroverwegen we dikwijls de manier waarop we het werk aanpakken"
TL_3	"In ons team, nemen we geregeld de tijd om te reflecteren op onze manier van werken"
Feedback halen op het team	
TL_4	"In ons team, verzamelen we feedback over de manier waarop we het werk aanpakken"
TL_5	"In ons team, analyseren we ons eigen functioneren in vergelijking met andere teams"
TL_6	"In ons team, vragen we partijen waar we mee samenwerken om een terugkoppeling op ons werk"
Experimenteren	
TL_7	"In ons team, experimenteren we met verschillende alternatieve manieren van werken"
TL_8	"In ons team, testen we nieuw ontwikkelde werkwijzen"
TL_9	"In ons team, maken we gezamenlijke plannen om iets nieuws uit te proberen"
Fouten met elkaar analyseren	
TL_10	"In ons team, proberen we gezamenlijk de oorzaak van een vergissing te achterhalen"
TL_11	"In ons team, nemen we de tijd om na te denken over waarom iets mislukt"
TL_12	"In ons team, bestuderen we onze fouten nauwkeurig"
Plannen	
HL_P_1	"Mijn [terminologie voor leidinggevende] maakt een planning voor de taken van het team"
HL_P_2	"Mijn [terminologie voor leidinggevende] organiseert de werkzaamheden van teamleden zo efficient mogelijk"

HL_P_3	"Mijn [terminologie voor leidinggevende] plant het werk zo dat vertraging wordt voorkomen"
Ondersteunen	
HL_0_1	"Mijn [terminologie voor leidinggevende] heeft aandacht voor de behoeftes van individuele teamleden"
HL_0_2	"Mijn [terminologie voor leidinggevende] is betrokken met de teamleden"
HL_0_3	"Mijn [terminologie voor leidinggevende] ondersteunt teamleden indien nodig bij een moeilijke taak"