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# **Leadership Matters, but So Do Co-Workers: A Study of the Relative Weight of Transformational Leadership and Team Relations on Employee Outcomes and User Satisfaction**

## **ABSTRACT**

In recent decades, public administration has taken a great interest in leadership. However, this interest has been met with concerns that the effects of leadership are overestimated compared to other relevant organizational factors. In this article, we explore the relative importance of formal, vertical leadership, specifically transformational leadership, and horizontal relations, i.e. the internal team relations, for different employee outcomes and user satisfaction. We argue that both factors may work through public service motivation (PSM). Based on survey data collected in Danish nursing homes linked with a user satisfaction survey and employee sickness absence data, we find that the internal team relations have the strongest association with some outcome measures, whereas others are more substantially related to vertical leadership. We further find that the relationship between transformational leadership and these outcome measures is fully mediated by PSM, whereas this is not the case with the internal team relations.

**Keywords:** leadership, teams, job satisfaction, performance, public service motivation

## INTRODUCTION

Research on leadership in the public sector centers on illustrating the performance-enhancing effects of leadership (Orazi, Turrini, & Valotti, 2013; Van Wart, 2013). While a 2003 literature review by Van Wart documented a limited scholarly interest in leadership in the public sector, in the years since, the tables have turned (Van Wart, 2013), and the literature on leadership in a public sector context has exploded. In particular, transformational leadership, in which leaders develop, share, and sustain an organizational vision to inspire and motivate followers to transcend their self-interest and achieve organizational goals, has been thoroughly studied (Andersen et al., 2018; Bellé, 2014; Vogel & Masal, 2015). While originating in the generic managerial literature (Bass, 1985; Bass & Riggo, 2006), this form of leadership has now been extensively studied in a public sector context, where it has been found to enhance employee and organizational outcomes (Bellé, 2014; Jacobsen & Andersen, 2015).

However, this leader-centric approach has recently been put under critical scrutiny. Some have argued there is a general romanticization of the impact of (individual) leadership (Nielsen & Moynihan, 2017; drawing on classical studies within the management literature, Hartley, 2018; Salancik & Meindl, 1984). Hence, some have taken up an interest in collective forms of leadership such as distributed leadership (Harris, 2008; Jacobsen, Kjeldsen, & Pallesen, 2016), while others have pointed to the importance of team relations (e.g., Carson, Tesluk, & Marrone, 2007) and the relationship between co-workers. Just as formal hierarchical leadership has been shown to affect motivation and performance, the public management literature has demonstrated how supportive team relations are important to motivation (Anderfuhren-Biget et al., 2010; Vandenabeele et al., 2004). Still, little is known about the potential benefits of horizontal relations as opposed to vertical ones in improving the performance and well-being of individual public service providers and

ultimately of public organizations. Nevertheless, we do know that team-based forms of organizations, sometimes described as ‘post-bureaucratic structures’ (Groeneveld & Kuipers, 2014), are becoming increasingly dominant in complex public organizations, and this should call for our increased attention (van der Hoek, Groeneveld & Kuipers, 2016).

Against this background, this article explores the relative importance of leaders, specifically using the transformational leadership approach, and the experience of working in a supportive and well-functioning team relations for various important outcome measures such as job satisfaction, intention to quit, self-perceived performance, sickness absence, and user satisfaction. Thus, our study contributes to the public management and human resource management (HRM) knowledge base with a comparison of vertical and horizontal relations in enhancing different outcome measures in public organizations.

While both leadership and team relations are relational phenomena, the literature often argues that they work through individual drivers such as motivation, in particular public service motivation. The backbone of high-performing public organizations is their staffing of employees with high motivation to do good for others and society in their public service work (Andersen, Heinesen, & Pedersen, 2014; Awan, Bel & Esteve, 2020; Bellé, 2013; Perry & Wise, 1990). Both leader-centric leadership approaches and team relations should thus target and support this motivation if employee and organizational outcomes are to be improved. However, previous research has not made many attempts to discover the underlying motivational mechanisms by which transformational leaders vis-à-vis team relations influence different outcome measures. This leads us to the second ambition of the article, which is to contribute to the existing literature by investigating the motivational mechanisms of vertical and horizontal relations in public organizations as an important individual-level route to improved outcomes.

Using structural equation modelling with bootstrapping techniques on a survey of employees (n=427) in the Danish long-term care (LTC) sector, we examine how care workers in nursing homes perceive the transformational leadership style of their leader as well as their internal team relations in relation to different employee outcome measures. This includes a measure of self-perceived performance, individual-level performance proxies such as job satisfaction and turnover intention, and register data on sickness absence. In addition, we also look at an outcome measure more directly tied to organizational performance, namely user satisfaction. Nursing homes in Denmark are a very relevant testing ground since they have a strong team organization, and on average, the largest span of control in the Danish public sector (Ledelseskommissionen, 2017). This makes our study a most likely case of the impact of team relations. Although this design does not allow us to infer causality about the relationships to the same degree as a randomised field experiment or a longitudinal design (Margetts, 2011; Schlotter, Schwerdt, & Woessmann, 2011), our study still provides valid evidence to determine the relative importance of leadership vis-à-vis team relations.

Our analysis shows that the team relations and transformational leadership both have a positive impact across our different outcome measures; but team relations have a relatively stronger association with self-perceived performance, and transformational leadership has a relatively stronger association with job satisfaction. Finally, we argue that while it makes sense to distinguish between leadership effects and team effects theoretically, these two factors may be closely interlinked in reality. We thus acknowledge that transformational leadership may affect the establishment of strong team relations (as e.g. argued by Braun et al, 2013), i.e. the team environment is also a potential mediator. But given the lack of studies that simultaneously examine vertical and horizontal relations, we find it theoretically and empirically relevant as a first step to try to isolate the impact of team relations vis-à-vis leadership as two separate factors of importance to different outcome

measures. Yet, as a next step to disentangle these relations, the article's discussion section returns to the question of a possible mediation of the leadership-performance relation through team relations.

The article proceeds by exploring questions of leadership and teams and further discusses how motivation, in particular public service motivation, is expected to mediate the relationships between transformational leadership, team relations, and the examined outcome measures. We then turn to the methodology of the article, discussing our data and the context in which we carry out the study. We present our analyses, and finally, we discuss our findings and point towards future avenues of research.

## **THEORETICAL FRAMEWORK**

### **Vertical Relations: The Impact of Transformational Leadership**

In the management literature, leadership has been defined in a number of different ways. Here, we follow the relatively generic definition proposed by Yukl (2013, p. 23), who defines 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 achieve shared objectives.” Leadership is a relational phenomenon, which is aimed at generating collective action to achieve certain goals.

The concept of transformational leadership has received a lot of attention both in a private and public sector context (Dinh et al., 2014; Vogel & Masal, 2015), not least due to a number of studies showing the performance enhancing effects of transformational leadership (e.g., Bellé, 2014; Paarlberg & Lavigna, 2010), including in a Danish public sector context (Jacobsen & Andersen, 2015). Hence, we argue that transformational leadership is likely to be a high-impact vertical leadership strategy compared with the importance of horizontal team relations.

Theoretically, transformational leadership has been extensively discussed based on the work by Burns (1978) and Bass (1985). However, in recent years, definitions centring on the visionary element of transformational leadership have been proposed (e.g., Bellé, 2014; Jensen et al., 2019a; Wright, Moynihan, & Pandey, 2012) to remedy some of the conceptual criticisms of Bass' original conceptualization (Van Knippenberg & Sitkin, 2013). Jacobsen and Andersen (2015, p. 832) propose a definition of transformational leadership as 'behaviors that seek to develop, share, and sustain a vision with the intention to encourage employees to transcend their own self-interest and achieve organizational goals.' This definition emphasizes the work done by the manager to develop, share, and sustain a common vision – something that previous studies have shown to be extremely relevant in a public sector context (Wright & Pandey, 2010).

Previous studies, for example, show positive performance effects of transformational leadership among nurses (Bellé, 2014) as well as among Danish high school teachers (Jacobsen & Andersen, 2015). Moreover, Andersen et al. (2018) show that transformational leadership supports the creation of a common understanding of professional quality among daycare workers; an important step towards ensuring the quality of services delivered. These studies are well in line with a number of studies within the generic leadership literature, which find transformational leadership positively associated with a number of different outcome measures at both individual and organizational level, including job satisfaction and objectively measured performance indicators (for an overview, see e.g. Braun et al., 2013 and Wang et al., 2011). By articulating a clear vision for the organization that inspires the employees along with exerting role modelling actions, transformational leaders support followers' satisfaction and commitment in the workplace. Moreover, as transformational leaders show individualized consideration, they are also more likely to bring out the best among their followers, which will also ultimately be reflected in organizational

performance (Braun et al., 2013, p. 271), for example, students learning more or citizens becoming more satisfied with services from public sector personnel. Based on the literature on transformational leadership, our first hypothesis is therefore:

- *H1: Employee-perceived transformational leadership is positively associated with performance-related outcome measures in public organizations.*

### **Horizontal Relations: The Impact of the Team Relations and its Importance Compared with Vertical Leadership**

Aside from the leadership behaviour exercised vertically by the formal leaders of an organization, a growing body of literature is concerned with the performance impact of horizontal relations within an organization. Due to very complex public service tasks involving a high degree of interdependence and specialization, as well as an increasing span of control in many public organizations, different forms of teamwork and team organization have spread across the public sector (van der Hoek et al., 2016). When organizations become larger and more specialised, the distance from and capacity of the formal leader can constitute a challenge in terms of taking care of quality insurance, continuous feedback, and knowledge sharing at the lower organizational levels. Hence, alternative ways of work organization (other than the classical bureaucratic hierarchy) can be warranted to take care of such tasks (i.e. when the formal leader has to oversee more employees, the lower-level team organization may become more important for stimulating performance).

Generally, a team can be defined as a social system in which group members work together to achieve a common goal. It is a formally established and clearly defined group that has collective responsibilities for certain work tasks and functions, requiring cooperation within the group (Kozlowski & Ilgen, 2006; Cohen & Bailey, 1997, p. 241 [cited from van der Hoek et al., 2016, p. 474]; Wageman, Hackman, & Lehman, 2005). But what characterizes the teams and team relations that facilitate advantageous outcomes? And are



these insights transferable to a public sector setting? In a study of 59 management teams consisting of MBA students, Carson et al. (2007) show that a supportive internal team environment and external coaching are particularly important predictors of team performance (rated by clients). This positive association between internal team environment and performance is also supported by other studies, including Russo (2012), Schneider and Bowen (1985), and Kozlowski and Ilgen (2006).

The internal team environment refers to the extent to which team members perceive the internal team climate to be supportive or unsupportive. This perception consists of three elements: shared purpose, social support, and voicing opportunities within the team. ‘Shared purpose’ and ‘social support’ refer to the extent to which team members have a common understanding of goals and priorities and support each other in carrying out the work tasks, whereas ‘voicing’ reflects team members’ opportunities to participate actively in team discussions and decision-making processes (Carson et al., 2007, p. 1226; Russo, 2012, p. 128). Research shows that a supportive team environment with respect to these three features reduces the salience of individual differences and task disagreement by stimulating higher internal coordination important to achieving common goals and higher performance (Carson et al., 2007; O’Leary-Kelly, Martocchio, & Frink, 1994). Hence, a supportive internal team environment, what we term ‘team relations,’ also entails that team members have confidence in each other and the team’s ability to perform – and that they actually feel that the team is well-functioning in terms of helping them coordinate their efforts. This highlights that the quality of horizontal relations in work teams within organizations can play a significant role for individual and organizational performance outcomes.

This is further underscored by classic motivation and management theories which state that relatedness to other human beings and group affiliation is one of the basic psychological needs of individuals that are to be fulfilled if individual satisfaction and

performance are to be improved (Ryan & Deci, 2000; Maslow, 1954). Such needs can be nurtured by membership of a well-functioning and supportive work team – and likely also more so than through formal hierarchical leadership. Furthermore, multiple studies indicate that public sector employees value the possibility of having good interpersonal relationships with colleagues and co-workers to a greater extent than their private sector counterparts (Buelens & van den Broeck, 2007). We therefore expect that:

- *H2: Supportive team relations are positively related to performance-related outcome measures in public organizations.*

Yet, we know very little of the importance of the quality of horizontal relations for performance in public organizations as most of the above-mentioned studies were conducted in private sector settings. As previously mentioned, public services are complex tasks that demand coordination and teamwork, and spans of control are often large (Ledelseskommissionen, 2017). Although research in transformational leadership shows that leaders setting a clear direction and supporting employees in achieving organizational goals are important to employee performance and satisfaction (Braun et al., 2013, Jacobsen & Andersen, 2015; Paarlberg & Lavigna, 2010), we argue that these characteristics of modern public sector structures and service delivery challenge vertical leadership. Hence, there is a need to look more closely into horizontal relations such as supportive team relations in public service organizations in order to gain more knowledge of whether this phenomenon is equally important as – or even more important than – vertical leadership relations for organizational performance.

For instance, Hoegl and Parboteeah (2003) show that teamwork quality positively moderates the relationship between goal setting and performance. Moreover, Pearce and Sims (2002) directly compare the performance effects of vertical and horizontal relations in a study of 71 private sector change management teams. They show that both

types of relations positively predict performance, but with stronger effect sizes for the horizontal relations in teams. But whereas Pearce and Sims (2002) focus on shared leadership in teams, we focus more directly on the perceived quality and supportiveness of team relations. With a public sector sample, we thus combine insights from the generic private sector management literature on the importance of horizontal relations for performance with knowledge on 1) the complex structures of public service delivery and 2) public employees' emphasis on good interpersonal relationships. In addition, we therefore explore the relative importance of vertical and horizontal relations for different performance-related outcome measures in public organizations:

- *H3: Supportive team relations are more important to performance-related outcome measures in public organizations than transformational leadership.*

### **The Mediating Role of Public Service Motivation**

In the public administration literature, scholars have long acknowledged the importance of public service motivation (PSM), i.e. the motives of “delivering service to people with the purpose of doing good for others and society” (Perry & Hondeghem, 2008:vii), for individual and organizational performance in a public sector context. As a counterweight to the motivation of self-interest grounded in rational choice theories, Perry and Wise (1990) argue that public employees are motivated by higher-order drivers towards the realization of values and goals in line with those of their organization. The theory suggests employees who are highly public service motivated are also more likely to be committed to their organization – especially if this is a public sector organization. It follows that these employees are expected to perform better compared to employees without the same level of PSM (Perry & Wise, 1990). Although an extensive body of research on PSM and its outcomes has emerged over the last decade, focusing on different elements of performance such as organizational performance and job satisfaction (Andersen et al., 2014; Awan et al., 2020), to our

knowledge no study has empirically investigated the mediating role of PSM between leadership styles, team relations, and different outcome measures at both individual and organizational level.

Vandenabeele (2007, 547) defines PSM as “the belief, values and attitudes that go beyond self-interest and organizational interest, that go beyond self-interest and organizational interest, that concern the interest of a larger political entity.” At its core, this definition reflects that PSM entails transcending employees’ own personal interest into behavior that benefits the society and others. Recalling that Jacobsen and Andersen (2015) suggest that transformational leadership is about the intention to encourage employees to go beyond their immediate self-interest and achieve organizational goals, this clearly shows a close conceptual linkage between PSM and the construct of transformational leadership (Bellé, 2014). However, public administration research has only recently begun to tie these two concepts together, examining the relationship between transformational leadership and PSM.

PSM theory suggests that public employees are predisposed to share the values and goals reflected in the mission of their organization (Perry & Hondeghem, 2008; Perry & Wise, 1990). This means that if employees view the mission as important and congruent with their own values, this will encourage them to incorporate the organization’s goals into their own sense of identity and consider them as personally meaningful (Wright, 2007, p. 56). According to Hackman and Oldham’s Job Characteristic Model (1976), the meaningfulness of work is a critical psychological state that affects employee motivation, demanding a certain coherent identity and a significance to others (Vandenabeele et al., 2004). In other words, when employees are able to identify the task as contributing to the well-being of other people within and/or outside the organization (i.e. task significance), the meaningfulness of the work will typically be enhanced.

However, this match cannot always be taken for granted (see for instance Bright, 2007; 2008; Gould-Williams, Mostafa, & Bottomley, 2015; Kim, 2012; Van Loon, Vandenabeele, & Leisink, 2017). As a result, several studies call attention to behaviors managers can adopt to raise awareness of the values and goals of the organization (Van Wart, 2013). The attention has primarily focused on transformational leadership, which is expected to stimulate employee PSM when managers “communicate values that raise followers’ consciousness about idealized goals and then get followers to transcend their own self-interest for the sake of larger goals” (Paarlberg, Perry, and Hondeghem, 2008, p. 281). Transformational leadership activates PSM by making followers conscious of their contribution to a greater good.

Consistent with this expectation, several studies have found empirical evidence that public managers can cultivate their employees’ PSM through transformational leadership (Bellé, 2014; Jensen, Andersen, & Jacobsen, 2019b; Park & Rainey, 2008; Vandenabeele, 2014; Wright et al., 2012). By developing, sharing, and sustaining the vision of the organization and thereby infusing employees tasks with ideological meaning and purpose, transformational leaders can elevate employee motivation to go beyond their self-interest (Jensen et al., 2019b; Paarlberg & Lavigna, 2010; Shamir & Howell, 1999; Wright et al., 2012). This will in turn induce employees to exert more effort in their jobs in order to reach organizational goals and thus result in high performance. In other words, we argue that PSM can be considered the motivational mechanism through which transformational leadership enhances individual and organizational outcomes in public organizations, which leads us to the following hypothesis:

- *H4a: Public service motivation mediates the relationship between transformational leadership and performance-related outcome measures in public organizations.*

Socio-relational factors in terms of supportive internal team relations also appear to be a crucial antecedent of work motivation (Anderfuhren-Biget et al., 2010; Vandenberghe et al., 2004). Good relationships with and recognition from colleagues reflect a non-pecuniary reward for employees, which in turn assists them in fulfilling their basic needs for relatedness. According to self-determination theory, relatedness, autonomy, and competence constitute the three innate psychological needs of an individual, which are essential for providing the most favorable conditions for transferring and integrating organizational values and goals into personally endorsed values and identities (Ryan & Deci, 2000). This so-called internalization process recognizes the natural inclination for employees to transform external reasons for engaging in work-related behavior into types of motivation that are internalized and integrated within the self, resulting in a more autonomous regulated identity (Ryan & Deci, 2017). The theory specifically suggests that the support of the psychological needs facilitate autonomous motivation, their well-being and enhanced performance (Deci & Ryan, 2000).

PSM is an example of such an internalized and autonomous form of extrinsic motivation as it originates from within the individual as a personal desire, but is a result outside the individual (i.e., the benefits of others and society) (Vandenberghe, 2014). Portraying PSM as a particular form of motivation relating to the identification with, or internalization of, public service values and motives is supported by PSM theory. Perry and Wise (1990) implicitly underline the role of value identification and internalization to the PSM construct by describing PSM in terms of predispositions to respond to a specific set of public service motives that an individual feels an inner compulsion to satisfy (p. 368). This is also echoed by Vandenberghe (2007), who outlines how PSM can be understood as a public service identity. Following this, Chen and Kanfer (2006) argue that team-level stimuli foster employees' willingness to make work-related contributions in their team and their

organization through employees' motivational states. The inclusion in a team and positive affiliation with colleagues is likely to enhance employees' beliefs that their work is meaningful, as well as enhance their feelings of autonomy, opportunity, and competence to influence outcomes in their organization (Chen et al., 2011).

Looking at previous research through the lens of self-determination theory demonstrates how supportive team relations helps to fulfil the basic psychological needs, which in turn influence the employees' motivation through internalization processes. Because these needs are significant factors for the organizational cultivation of greater PSM (Vandenabeele, 2014), we argue that employees PSM is nurtured and cultivated when they are surrounded by supportive team relations that fulfills the employees' desire for helping others and contributing to society and thereby positively affect organizational outcomes.

This may particularly be the case in public service-delivering organizations where the direct interaction with citizens and users takes place through, for instance, care-giving teamwork. This is in line with the literature demonstrating how employee PSM is affected by the organizational environment, also pointing to the quality of these team relations as one of the most important environmental factors (Perry and Porter, 1982). Hence, the effect of supportive team relations on different individual and organizational outcomes is likely to be reflected via PSM:

- *H4b: Public service motivation mediates the relationship between supportive team relations and performance-related outcome measures in public organizations.*

Our theoretical model and expected hypotheses are displayed in Figure 1.

[INSERT FIGURE 1]

## **RESEARCH DESIGN AND METHODOLOGY**

### **Data Collection**

Our expectations are tested using a sample of public service employees in the Danish long-term care (LTC) sector. In general, public administration research has not taken a great interest in the LTC sector as an empirical case. Nevertheless, the LTC sector is a high-cost service area that employs a significant proportion of frontline service workers (Statistics Denmark, 2018). Additionally, the overall population-ageing trend indicates that costs and demands for LTC services are not likely to decrease (Kvist, 2018). Moreover, the sector faces considerable problems with retention of skilled care workers (Csonka & Boll, 2000). These facts in combination make the LTC sector a highly important empirical case to investigate the potential benefits of vertical vis-à-vis horizontal relations in enhancing desirable performance-related outcomes in public organizations.

Specifically, our focus is on LTC workers employed at public nursing homes. The care workers are working in small teams that take responsibility for a certain number of elderly citizens to ensure continuous and stable caregiving. Nursing homes have on average the largest span of control in the Danish public sector (Ledelseskommissionen, 2017), and many teams are therefore to some extent self-managing, which makes our empirical setting a most likely case of the impact of team relations. The empirical analyses are based on three different data sources related to nursing homes in Aarhus Municipality, Denmark, which is the second largest municipality in the country: 1) a web-based employee survey distributed to 19 randomly selected nursing homes, 2) administrative data from the local authority, and 3) a resident satisfaction survey.

The employee survey was administered in close cooperation with the municipality's Department of Health and Care. In order to increase the survey's response rate, care workers were informed of the survey through several channels, including posters, meetings, letters



and emails as well as through their local union representatives (in Denmark the majority of employed professionals are represented by a union). Using self-reported surveys is often challenged by the threat of common method bias (Podsakoff et al., 2003). To attenuate this potential bias, a special emphasis was put on the confidentiality of responses, and we also accompanied the survey with a cover letter clarifying the purpose and goals of the study. The survey was distributed in May 2017. 736 care workers received an invitation to the survey, and 498 responded. Excluding incomplete answers, a total of 427 respondents remained, which constitutes a response rate of 58 percent. To clarify the extent to which the sample is representative, respondents and non-respondents were compared using administrative data on demographic variables (age, gender, and educational background). A chi-square analysis did not indicate significant differences between the two groups (at  $p < .05$ ), minimizing concerns about the representativeness of the sample.

The second data source is register data from Department of Health and Care records on employee sickness absence and their demographic variables (age, gender, educational background, and years of experience). The data on sickness absence was collected for a period of 12 months (1 January-31 December 2017). These data were matched at the individual level with the employee survey.

Finally, the third data source, the Long-Term Care Resident Satisfaction Survey, is conducted annually in the nursing homes to measure resident satisfaction. Because residents in LTC facilities often lack the capacity to complete a written survey, data on the survey items was collected via face-to-face interviews. The interviews were conducted by anthropology students on behalf of the Department of Health and Care in October 2017. A total of 593 interviews were completed among residents in the 19 nursing homes, which corresponds to a response rate of approximately 70 percent.

## Measurement of Study Variables

*Transformational Leadership.* Transformational leadership was operationalized in line with the measures from the Danish Leadership and Performance (LEAP) research project, consisting of measures that are validated and commonly used, inspired by previous studies, or items created for the project (Boye et al., 2015). Transformational leadership (TFL) was operationalised using a four-item measure consisting of one item developed for the LEAP project and three items modified from Moynihan, Pandey, and Wright (2012), MacKenzie, Podsakoff, and Rich (2001), and Podsakoff et al. (1990). The construct was measured using a 7-point Likert scale ranging from ‘fully disagree’ (1) to ‘fully agree’ (7). The same scale was also used for responses measuring team relations, PSM, and self-perceived performance. All measures are listed in Table A1 in the online supplementary material A.

*Team Relations.* The quality of horizontal relations in nursing homes, and more specifically the team relations, was measured using a four-item scale drawing mainly on work by Carson et al. (2007). This scale resembles the ‘shared purpose’ and ‘social support’ dimensions of the internal team climate, which asks about care workers’ agreement on important tasks within the team and their inclination to help each other out (the ‘voice dimension’, i.e. the extent to which team members have input on the team’s work, was unfortunately not covered). There were also two items covering team members’ confidence in the team and their satisfaction with its teamwork. In line with our theoretical reasoning about the team relations, this reflects how well-functioning team members perceive the internal environment of their team to be. Hence, the face validity of the scale for indicating the extent to which care workers experience supportive team relations is considered acceptable.

*Public Service Motivation.* In this study, we used nine items from Perry’s (1996) original PSM scale (cf. Coursey & Pandey, 2007). We excluded the attraction to

policymaking (APM) dimension that captures the rational motive due to a theoretical expectation of a weak correlation between this particular dimension and our outcome measures in this particular empirical context (Kjeldsen, 2012). Further, following Andersen, Pallesen, and Pedersen's (2011) argument about a negative association with 'patriotism' from Perry's PSM8 item in a Danish context, we reworded the phrase 'To me, patriotism includes seeing to the welfare of others' relating to the compassion dimension to 'For me, considering the welfare of others is one of the most important values.'. The slight changes and shortened version have been validated by a number of studies (Andersen et al., 2014; Lynggaard, Pedersen, & Andersen, 2018).

*Performance-Related Outcome Measures.* Performance is a contested concept, especially in public organizations (Brewer, 2006). As Andersen, Boesen, and Pedersen (2016) highlight in their review of the literature, the concept can be understood in relation to six dimensions addressing questions like formalization, process/product focus, and level of analysis. This review clearly illustrates that the 'conceptual space' surrounding the concept of performance is complex and multi-layered (Amirkhanyan, Kim, & Lambright, 2013). In empirical research, this complexity often leads us to choose certain dimensions of the concept and build our studies around these. While objective performance measures may be the gold standard, quite often in a public sector context, these are hard to come by or alternatively highly contested. As Behn (2003) argues, we should include different measures for different purposes. In our study, we first use a self-reported measure of performance. However, as Meier and O'Toole (2013) argue, such a measure is best used alongside a number of other outcome measures. Therefore, we include factors traditionally linked to performance such as job satisfaction, intention to quit, and sickness absence as individual-level performance proxies. We also include data from a user satisfaction survey, which is a measure that can be more directly tied to organizational performance. While none of these are perfect measures of

performance, together they provide us with a complimentary view of different desirable outcomes in public service organizations, including both the perspective of the professionals dealing with a group of vulnerable citizens and those very citizens themselves. The citizen perspective seems particularly important in a field where citizens' perception of quality is an essential part of performance.

- Self-perceived performance. This is a subjective measure of performance that consisted of five items. Three of these items were used in other studies on the relationship between PSM and performance (van Loon et al., 2017; Vandenabeele, 2009), while two items were developed specifically for this study in order to capture certain behaviours of employees that are relevant in terms of performing well in a nursing home context.
- User satisfaction. Using the Long-Term Care Resident Satisfaction Survey described above, our index is based on four questions measured on a 5-point Likert scale ranging from 'very unsatisfied' (1) to 'very satisfied' (5). Respondents were asked about their overall satisfaction with the nursing home, their satisfaction with staff, their satisfaction with meals, and the extent to which they felt the staff made an effort to make the nursing home home-like. Because scores are not related to the individual employee but to the nursing home, analyses using this performance measure as a dependent variable have limited data points (19 nursing homes).
- Job satisfaction was measured using the single item 'Overall, on a scale from 0 to 10, how satisfied or unsatisfied are you with your current job?', with 0 indicating 'very unsatisfied' and 10 indicating 'very satisfied'. This is a commonly approved measure of job satisfaction used in several studies investigating the antecedents of job satisfaction (Andersen & Kjeldsen, 2013; Vandenabeele, 2009). Job satisfaction has

previously been closely linked to performance and has traditionally been used as a performance indicator in leadership evaluations (Muterera et al., 2015).

- Intention to quit was also based on a single question, worded as ‘Have you seriously thought about leaving this organization within the next 12 months?’ which is a common measure of intention to quit used in several previous studies (Fimian, Fastenau, & Thomas, 1988; Gould-Williams et al., 2015). Intention to quit has also previously been linked to performance (Bright, 2008; Tummers & Knies, 2016).
- Sickness absence was measured using data from the Department of Health and Care registers on individuals’ sickness absence. The measure reports how many days of sick leave each employee had taken in 2017. Following Jakobsen et al. (2016), we focus on short-term absence from work due to sickness, and respondents with more than 29 sick days were therefore excluded.<sup>i</sup>

While our hypotheses overall address performance specified as different outcome measures, we expect that each of the measures discussed here relates to our independent variables as stated in our hypotheses. However, as intention to quit and sickness absence are reversed, we expect negative coefficients in our analysis.

*Control Variables.* Our analyses include the following control variables: age, gender, years of experience, and social desirability. Age, gender, and years of experience were selected based on previous studies investigating the central measures of this study (see for instance Andersen et al., 2014; Bright, 2008; Jacobsen & Andersen, 2015). Moreover, because the overall research design does not control for social desirability bias (one of the most common sources of bias), a five-item measure of socially desirable responses – SDRS-5 developed by Hays, Hayashi, and Stewart (1989) – was also included to cope with the

potential contamination of self-reported responses. The issue of common source bias and social desirability bias are elaborated in the article's final section. Replies were provided using a 5-point Likert scale ranging from 'not at all true' (1) to 'exactly true' (5), and the social desirability construct's exact wording (as well as all other items used) can be seen in the online supplementary material A. the online supplementary material B contains a correlation matrix for all relevant variables.

Because our findings were highly consistent both with and without inclusion of the control variables, we follow the recommendations of Williams, Vandenberg, and Edwards (2018) and present our findings without reporting the estimates for the controls. This approach has been used by several other scholars (see for instance Gould-Williams et al., 2015).

### **Methods and Measurement Validation**

The statistical analysis applied structural equation modelling (SEM) to estimate the theoretical model displayed in Figure 1 using *STATA 14.2*. We followed Anderson and Gerbing's (1988) two-step modelling approach, estimating the measurement model prior to estimating the structural model. Although the assumptions of normality were upheld for all variables used in this study (skewness less than 2 and kurtosis less than 7 [Curran, West, & Finch, 1996]), the SEM models were estimated with bootstrap cluster standard errors derived from 1,000 sampling replications, given that the sample is modest in size and to reduce the risk of committing Type 1 errors (Preacher & Hayes, 2008). We account for the clustered nature of our data in 19 nursing homes and the within-cluster correlation (heteroscedasticity), which otherwise could pose serious problems for statistical inference <sup>ii,iii</sup>, by using cluster robust standard errors obtained via bootstrapping.

Before estimating the structural equation models, both the psychometric properties of each of the four latent constructs and the overall measurement models were

assessed. Our indices and measurement models showed fit. the online supplementary material C includes the specifications of the tests, which are summarized in Table 1 and Table 2.

[INSERT TABLE 1]

[INSERT TABLE 2]

## RESULTS

Table 3 and Table 4 show the results of the SEM analyses. Overall, the proposed models in both tables provide an adequate fit to the data. Appendix D presents the fit statistics for the models in Table 3 and Table 4. Regarding the hypothesized direct relationships, the analysis in Table 3 shows that both team relations and transformational leadership have the expected statistically significant relationships with the first three dependent variables: self-perceived performance, job satisfaction, and intention to quit (including controls). This corroborates H1 and H2, suggesting that transformational leadership and supportive team relations are important factors in order to enhance self-perceived performance and job satisfaction and reduce employees' intention to quit.

In relation to our initial puzzle, we find that the relationship between team relations and self-perceived performance is approximately twice the size of the relationship between transformational leadership and this outcome measure. However, looking at job satisfaction and intention to quit, we find that transformational leadership has a stronger say than team relations. H3, regarding the impact of transformational leadership vis-à-vis the team relations, is hence only partially corroborated. Here, it should also be noted that additional analyses in Appendix E show that team relations partially mediate the association between transformational leadership and the three self-reported subjective outcome measures. We return to this finding in the discussion. Overall, our measurements for sickness absence

and user satisfaction do not provide any significant results. However, with respect to the latter, we are cautious in drawing any firm conclusions based on this since the variation in this variable in our dataset is limited.

[INSERT TABLE 3]

Our ambition was also to test the extent to which these relationships are mediated by PSM. Table 4 includes both the direct and indirect paths through PSM. First, we find that the relationship between transformational leadership and self-perceived performance is mediated by PSM, whereas no significant indirect relationships between transformational leadership and the other dependent variables are detected. As a matter of fact, PSM fully mediates the relationship between transformational leadership and self-perceived performance, as the direct association becomes statistically insignificant when allowing for the indirect effect through PSM. These results give partial support for H4a: while the relationship between transformational leadership and self-perceived performance works through the public service motivation of the employee, this is not the case concerning the relationship with job satisfaction and intention to quit. We return to this finding below.

Finally, the analysis shows that we still find positive correlations between team relations and our dependent variables when including PSM in our analysis as a mediator. We further find the hypothesised indirect effect, as the relationships between team relations and self-perceived performance and job satisfaction are partially mediated through PSM, which offers some support for H4b. Including mediation in our analysis, we find that the relationships between transformational leadership vis-à-vis team relations and self-perceived performance are equally strong when looking at the part of the relationship which is mediated through PSM. However, we find that the team relations also work through mechanisms other



than motivation, unlike transformational leadership – a finding supporting our claim that research should pay more attention to the horizontal relations in public organizations.

[INSERT TABLE 4]

## **DISCUSSION AND CONCLUSION**

This article has argued that we should supplement our interest in vertical relations (leadership) with a more profound interest in horizontal relations, (e.g. the team relations), if we wish to deepen our understanding of factors affecting desirable performance-related outcomes in public organizations. Our study supports this claim and clearly shows the relevance of studying these two types of variables in the same study as they show heterogeneous effects across different outcome measures.

We generally find support for our hypothesis regarding a positive correlation between transformational leadership and the different outcome measures, apart from user satisfaction and sickness absence. Similarly, we find a positive correlation between team relations and these dependent variables (again, apart from user satisfaction and sickness absence). Including PSM as a potential mediating mechanism, we find that the relationship between transformational leadership and self-perceived performance is fully mediated by PSM, whereas this is not the case for team relations, which is only partially mediated. While we only look at the mediating role of PSM, other potentially relevant mediators cannot be excluded as mechanisms through which transformational leadership or team relations are related to performance. Future studies could fruitfully explore this issue further by investigating how factors such as goal clarity (Conti & Kleiner, 1997), team cohesion and empowerment (Bass et al., 2003; Chen et al., 2007; Wu, Neubert, & Yi, 2007), or knowledge sharing (Lee et al., 2010) work as mechanisms for these relationships.

We also note that the fact that user satisfaction and sickness absence do not correlate with our independent variables may be explained by limited variation, as we included only 19 nursing homes in our study. Despite this, our study illuminates the relative importance of transformational leadership and team relations regarding a number of important factors and makes an important contribution to the field in highlighting their heterogeneous effects. When discussing the relative importance of vertical and horizontal relations, throughout the article, we have argued that these two variables are separate factors influencing performance. However, as previous research has also shown (Carson et al., 2007; Günzel-Jensen, Jain, & Kjeldsen, 2018; Braun et al., 2013), teams work better if they have managerial attention, and horizontal coordination only works if it is backed up by vertical authority. As mentioned in the results section, additional analyses displayed in Appendix E revealed that a supportive team environment also mediates the association between transformational leadership and more than one of the investigated outcome measures. This indicates that a transformational leadership approach may very well also support team relations.

As argued by Braun et al. (2013) transformational leaders also have a great impact on the way teams work as this leadership approach makes the team unite to follow a joint vision and stimulate team members to have confidence in each other (p. 272). Results supporting this claim has been found in military units in combat situations and financial service teams (Bass et al., 2003; Schaubroeck et al., 2007). Future research could benefit from exploring this potential dynamic relationship in more depth – particularly using objective performance measures. Our article is to be seen as a first step towards such a research agenda by addressing both leadership and team relations in relation to many different outcomes of importance in public service organizations.

Yet, our study comes with a few caveats as well. We rely on data generated in nursing homes in Denmark. In a Danish context, employees in nursing homes are some of the least educated public sector employees, and we therefore need to consider that the relationships we find may look different for public sector workers with a different educational background. In general, the Danish society is characterised by a very low degree of power distance (following Hofstede & Hofstede, 2005). Hence, the external validity of our results would benefit from a replication among different demographics in the public sector as well as a replication in a different cultural context.

Similarly, while we do include a number of different proxies for performance in our study, we lack objective task-related performance data, and while we do include a user survey and register data on sickness absence to remedy common source bias (CSB), we do not find any significant results with regard to these measures. Consequently, because the findings rely on a self-reported survey, this study might be prone to CSB (Favero & Bullock, 2015; Jakobsen & Jensen, 2015; Meier & O'Toole, 2013; Podsakoff et al., 2003). Although the common view is that CSB is a 'universal inflator of correlations' threatening the validity of research findings, scholars have started arguing that CSB is an overstated issue that does not always result in inflated correlations; however, if it does, CSB should be weighed against the concerns that follow from the usage of a multisource approach (George & Pandey, 2017). Nevertheless, to deal with potential CSB that stems from the tendency to adhere to socially acceptable responses, several proactive steps were taken concerning the survey design and data collection strategy. Podsakoff et al. (2003) suggest that anonymity as well as explaining the aim of the study are important factors for reducing the risk of CSB, and we followed this advice. Most items included in the survey have been used and validated in previous research, and the few self-developed items were cautiously designed. In addition, a social desirability scale was included in the survey in order to control for the bias that still might be present in

the responses (Podsakoff, MacKenzie, & Podsakoff, 2012). Although there is not solid evidence that the precautions protect fully against CSB, they are likely to have reduced the threat. However, future studies should continue to center on the use of independent data sources for performance, such as individual-level user satisfaction surveys or administrative register data (Andersen et al., 2014; Favero & Bullock, 2015).

Our analysis made it clear that the relative importance of leadership vis-à-vis team relations plays out differently depending on which performance-related outcome measures we examined. Regarding self-perceived performance, team relations have a relationship twice the size of transformational leadership. However, looking at job satisfaction and intention to quit, transformational leadership has the strongest relationship. This finding leads us to several considerations.

First, our analysis seems to indicate that while transformational leadership primarily affects variables reflecting the well-being of employees, the team environment may have more functional effects as indicated by its relationship with self-perceived performance. It is interesting to consider why team relations apparently have such a profound association with self-perceived performance compared to job satisfaction. As we argued in the methods section, self-perceived performance measures always call for caution due to common source bias and social desirability bias (Meier & O'Toole, 2013), but the same can be said for job satisfaction; hence, this cannot explain the difference in results. Long-term care is characterized by complex working situations both in professional and emotional terms, and it is certainly positive that the employees feel like they perform well given these circumstances. Good team relations may support this feeling given the work organization. In contrast, job satisfaction is not necessarily attached to specific work tasks and the way they are organized – it may depend more on external factors such as salary and working hours as well as leadership. Hence, our findings suggest that transformational leadership may affect the

perception of these factors, while team environment may to a higher extent affect the way the work is actually done – or at least the perception of it.

Second, our analysis clearly illustrates that it can be helpful to work with more performance-related outcome measures in the same study; while this is true for research trying to conceptualize performance, it is also true for leaders embarking on, for example, management by objectives.

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## TABLES

**Table 1. Fit Indices and Reliability for the Latent Constructs**

|                            | TLI   | CFI   | SRMR  | Raykov's rho |
|----------------------------|-------|-------|-------|--------------|
| Self-perceived performance | 0.980 | 0.990 | 0.022 | 0.868        |
| User satisfaction          | 0.895 | 0.965 | 0.043 | 0.836        |
| TFL                        | 0.982 | 0.947 | 0.017 | 0.938        |
| Team                       | 0.958 | 0.875 | 0.036 | 0.872        |
| PSM                        | 0.916 | 0.949 | 0.050 | 0.788        |

Note: TFL = transformational leadership; Team = team relations; PSM = public service motivation.

**Table 2. Fit Indices for the Overall Measurement Models**

|                      | $\chi^2$ <sup>a</sup>    | CFI   | TLI   | SRMR  |
|----------------------|--------------------------|-------|-------|-------|
| Model 1 <sup>b</sup> | $\chi^2_{(178)}=392.619$ | 0.956 | 0.948 | 0.055 |
| Model 2 <sup>c</sup> | $\chi^2_{(95)}=222.604$  | 0.965 | 0.955 | 0.054 |
| Model 3 <sup>d</sup> | $\chi^2_{(156)}=321.503$ | 0.963 | 0.955 | 0.053 |

a. All chi-square values are significant at  $p < .001$ .

b. Model 1 comprises transformational leadership, team relations, PSM, and performance.

c. Model 2 comprises transformational leadership, team relations, and PSM.

d. Model 3 comprises transformational leadership, team relations, PSM, and user satisfaction.

**Table 3. Structural Equation Model with Direct Paths**

|                            | Dependent Variable (DV)           |                         |                          |                          |                         |
|----------------------------|-----------------------------------|-------------------------|--------------------------|--------------------------|-------------------------|
|                            | <u>Self-perceived performance</u> | <u>Job satisfaction</u> | <u>Intention to quit</u> | <u>User satisfaction</u> | <u>Sickness absence</u> |
| H <sub>1</sub> : TFL → DV  | 0.152 **<br>(0.0577)              | 0.722 ***<br>(0.0900)   | -0.151 ***<br>(0.0231)   | 0.0545<br>(0.114)        | -0.108<br>(0.214)       |
| H <sub>2</sub> : Team → DV | 0.281 ***<br>(0.0756)             | 0.312 ***<br>(0.0844)   | -0.0765 ***<br>(0.0198)  | -0.0190<br>(0.0516)      | -0.109<br>(0.299)       |
| <i>N</i>                   | 401                               | 401                     | 363                      | 401                      | 347                     |
| <i>R</i> <sup>2</sup>      | 0.1699                            | 0.2339                  | 0.1803                   | 0.0190                   | 0.0115                  |

Note: Cluster robust standard errors (clustered on nursing homes) in parentheses, <sup>+</sup> $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . TFL = transformational leadership, Team = team relations.

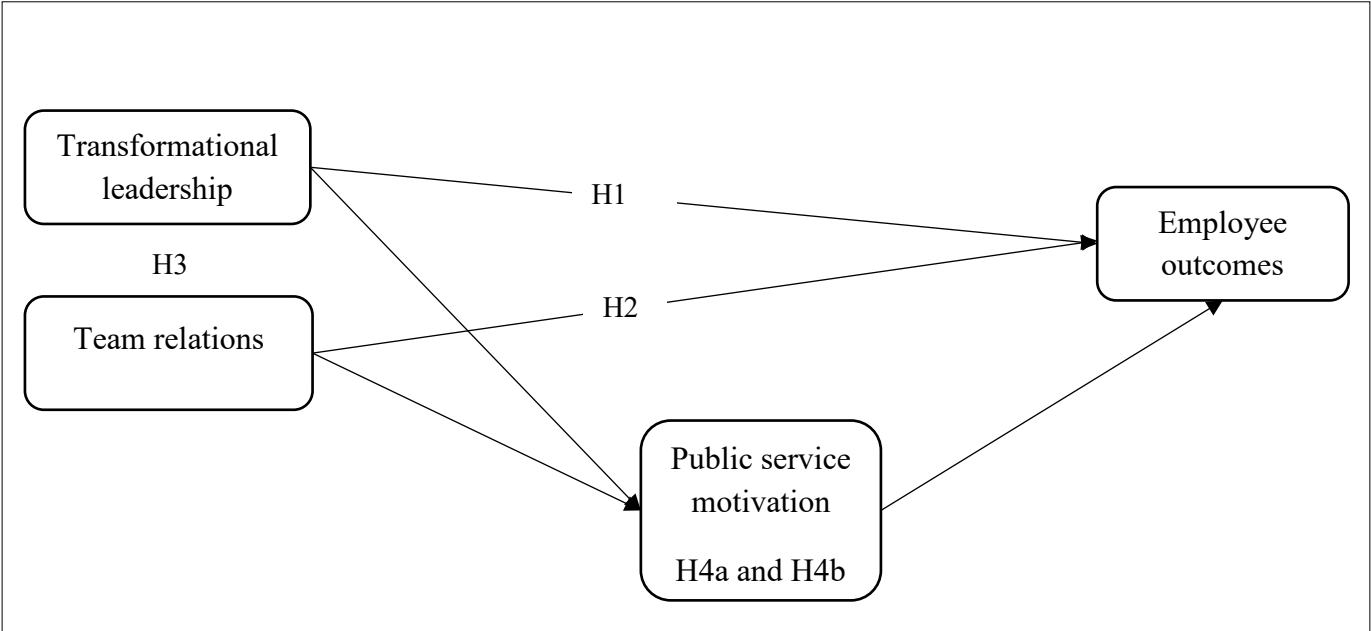
**Table 4. Full Structural Equation Model with Direct and Indirect (Mediation) Paths**

|                                   | Dependent Variable (DV)           |                         |                          |                          |                         |
|-----------------------------------|-----------------------------------|-------------------------|--------------------------|--------------------------|-------------------------|
|                                   | <u>Self-perceived performance</u> | <u>Job satisfaction</u> | <u>Intention to quit</u> | <u>User satisfaction</u> | <u>Sickness absence</u> |
| <b>Direct Paths</b>               |                                   |                         |                          |                          |                         |
| H <sub>1</sub> : TFL → DV         | 0.0898<br>(0.0598)                | 0.681 ***<br>(0.091)    | -0.149 ***<br>(0.0216)   | -0.064<br>(0.113)        | -0.040<br>(0.2101)      |
| H <sub>2</sub> : Team → DV        | 0.228 ***<br>(0.0598)             | 0.277 ***<br>(0.0805)   | -0.075 ***<br>(0.0201)   | -0.011<br>(0.0484)       | -0.041<br>(0.297)       |
| PSM → DV                          | 0.358 ***<br>(0.0644)             | 0.232 *<br>(0.121)      | -0.009<br>(0.0254)       | -0.053<br>(0.0520)       | -0.424 +<br>(0.240)     |
| Team → PSM                        | 0.152 **<br>(0.0599)              | 0.152 **<br>(0.0599)    | 0.131 *<br>(0.0682)      | -0.152 **<br>(0.0599)    | 0.166 **<br>(0.0706)    |
| TFL → PSM                         | 0.187 ***<br>(0.0507)             | 0.187 ***<br>(0.0507)   | 0.203 **<br>(0.0589)     | 0.187 ***<br>(0.0507)    | 0.170 **<br>(0.0590)    |
| <b>Indirect Paths</b>             |                                   |                         |                          |                          |                         |
| H <sub>3a</sub> : TFL → PSM → DV  | 0.0668 ***<br>(0.0158)            | 0.0433<br>(0.0297)      | -0.002<br>(0.0053)       | -0.010<br>(0.0109)       | -0.072<br>(0.0519)      |
| H <sub>3b</sub> : Team → PSM → DV | 0.0544 *<br>(0.0278)              | 0.0353 *<br>(0.0161)    | -0.001<br>(0.0033)       | 0.008<br>(0.0077)        | -0.070<br>(0.0418)      |
| <i>N</i>                          | 401                               | 401                     | 363                      | 401                      | 347                     |
| <i>R</i> <sup>2</sup> DV          | 0.2841                            | 0.2814                  | 0.2155                   | 0.0230                   | 0.0273                  |
| <i>R</i> <sup>2</sup> PSM         | 0.0769                            | 0.0853                  | 0.0910                   | 0.0853                   | 0.0779                  |
| <i>R</i> <sup>2</sup> overall     | 0.1886                            | 0.3015                  | 0.2743                   | 0.1047                   | 0.0965                  |

Note: Cluster robust standard errors (clustered on nursing homes) in parentheses, <sup>+</sup>*p*<0.10, \**p*<0.05, \*\**p*<0.01, \*\*\**p*<0.001. TFL = transformational leadership; Team = team relations; PSM = public service motivation.

**FIGURE**

**Figure 1. Illustration of the Tested Theoretical Model**



## NOTES

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<sup>i</sup> According to Jakobsen et al. (2016), it is debatable whether sickness absence should alternatively be measured as the total sickness absence, including sick leave over a month's duration. On the one hand, there can be medium and long-term sick leaves for reasons (e.g. stress) that are work-related. On the other, longer sickness absence can also often be chronic illnesses or cancer, which are rarely related to workplace conditions.

<sup>ii</sup> Our initial analyses revealed a small but significant variation between the nursing homes. However, because the variation is not sufficient to perform a multi-level SEM, we estimate our SEM model with cluster robust standard errors and thereby account for the clustered nature of our data.

<sup>iii</sup> Even though nursing home employees work within a strongly organized team structure, our data does not allow us to link the employees together in these teams, which is why we do not account for team-level clustering in our analyses.