

## Distributed leadership in health care: The role of formal leadership styles and organizational efficacy

*Leadership*

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**Abstract**

Management and health care literature is increasingly preoccupied with leadership as a collective social process, and related leadership concepts such as distributed leadership have therefore recently gained momentum. This paper investigates how formal, i.e. transformational, transactional and empowering, leadership styles affect employees' perceived agency in distributed leadership, and whether these associations are mediated by employees' perceived organizational efficacy. Based on large-scale survey data from a study at one of Scandinavia's largest public hospitals ( $N = 1,147$ ), our results show that all leadership styles had a significant positive impact on employees' perceived agency in distributed leadership. Further, organizational efficacy related negatively to employees' perceived agency in distributed leadership; however, a mediatory impact of this on the formal leadership styles-distributed leadership relationship was not detected. These results emphasize the importance of formal leaders to enhance employee involvement in various leadership functions; still, employees might prefer to participate in leadership functions when they perceive that the organization is struggling to achieve its goals.

**Keywords**

Distributed leadership, empowering leadership, transformational leadership, transactional leadership, health care, organizational efficacy

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## Introduction

Leadership as a collective social process emerging through the interaction of multiple actors is a recent addition to discussions about heroic versions (i.e. charismatic leadership) in leadership research (Uhl-Bien, 2006). These leadership styles may seem contradictory, but they are in fact complementary as formal leaders might play an important role in distributing leadership within a group (Gronn, 2009). Following Gronn's (2000, 2002) and Jønsson et al.'s (2016) agency approach, distributed leadership (DL) can be defined as sharing of generic leadership tasks to influence resource availability, decision making and goal setting within an organizational perspective. When we use the term 'agency in DL', we draw on Bandura (1997) and emphasize that our research interest concerns the individual's capacity and intention to influence leadership activities and decision making in his/her organization (as opposed to leadership tasks being distributed solely based on formal positions). Multiple studies suggest that DL improves employee job satisfaction and increases employee involvement as well as professional and organizational empowerment (Day et al., 2009; Harris, 2011; Hulpia et al., 2011; Leithwood et al., 2009; Ulhøi and Müller, 2014). Since DL can ultimately result in increased organizational effectiveness, as argued by Hulpia and Devos (2009) and Hulpia et al. (2011), more knowledge of the triggers of DL might benefit organizations in crisis.

The popularity of DL questions the simplistic leader–follower dichotomy of leadership (Bolden, 2011; Ulhøi and Müller, 2014). Do we need formal leaders when employees take on leadership spontaneously, like they do in DL? Of course, this is a rhetorical simplification of current DL literature. Leaders are still needed to ensure that leadership can be distributed and is taken on by the members of the organization (Gronn, 2008). Furthermore, formal leaders can be crucial in facilitating an organizational culture allowing distributed leadership to unfold (Leithwood et al., 2008). This article investigates the impact of formal leadership styles on employees' perceived agency in DL, more specifically the effect of various leadership styles (transformational, transactional and empowering) on employees' involvement in distributed leadership practices.

Most research on DL remains at a conceptual or descriptive level (with the exception of Hulpia et al., 2009) or is applied in the education sector (for an overview, see Bolden, 2011). A special arena for DL is without doubt the health care sector, as the complexity of professional and policy institutions may be a barrier to distributing leadership and taking on leadership tasks (Currie and Lockett, 2011). Furthermore, the health care sector and its institutions rely on a professional logic of hierarchy that favours top-down processes and leadership (Bate, 2000). We propose that this makes the leadership style chosen by those formally in charge even more important. Given the contextual restrictions, formal leaders might enable agency in DL of the many who are not formally in charge in health care organizations with positive consequences for employees and organization alike.

Furthermore, we propose and examine the mediatory influence of perceived organizational efficacy on the relationship between formal leadership styles and distributed leadership practices. Perceptions of an organization's capacity to cope with the demands, challenges and opportunities it encounters might be crucial for formal leadership styles to successfully translate into increased employee involvement in leadership functions (Bohn, 2002). Previous research has shown that leadership behaviours are correlated with perceptions of organizational efficacy (Bohn, 2002), but the relation to agency in distributed leadership has not yet been explored.

By recognizing and analysing the formal leadership styles and DL, we aim to enable a more integrated and systematic understanding of the balance between individual and

collective leadership and its underlying mechanisms. To our knowledge, we are the first to present a large scale quantitative study on DL in health care using one of Scandinavia's largest public hospitals, which recently went through a profound New Public Management-inspired reform process. Our findings emphasize the overall importance of formal leadership in relation to DL, and should be interesting for those interested in the management of public organizations.

## Theoretical framework

### *Distributed leadership*

DL is certainly not a new area of research. The term was initially used by Gibb (1954) to analyse and recognize the influence of processes within formal and informal groups. After almost 50 years, Gronn (2000, 2002) and Spillane et al.'s (2004) renewed the interest in the subject with their conceptual models of DL. Activity theory (Engeström, 1999) was used as a theoretical basis to frame the idea of DL practice, 'using it as a bridge between agency and structure (in Gronn's case) and distributed cognition and action (in Spillane et al.'s case)' (Bolden et al., 2008: 359). Within this strand of literature, leadership is understood as an important aspect of the daily tasks and interactions of all employees in a company or institution.

Over the last 12 years, various definitions have emerged, but in a review of the literature, Bennett et al. (2003) find agreement on three basic assumptions: (a) leadership is an emerging key feature of the group; (b) there is openness towards who can perform leadership tasks, with focus on inclusion rather than exclusion; and (c) leadership tasks are shared among the many, not only the appointed leaders (Bolden et al., 2008). Thus, DL is represented as dynamic, relational, inclusive, collaborative and contextually situated (Bolden et al., 2008). As mentioned, we follow Gronn's (2000, 2002) and Jönsson et al.'s (2016) agency approach and define DL as a sharing of generic leadership tasks to influence resource availability, decision making and goal setting within an organizational perspective.

With this definition, the concept of DL has a strong parallel to concepts such as shared leadership or participatory leadership. These approaches all rest on the notion that leadership can be seen as an organizational process since decisions and actions in complex organizations are likely to be the product of more than one formal leader (Shondrick et al., 2010). Leithwood et al. (2006) claim a degree of overlap between concepts of shared, collaborative, democratic, distributed and participative leadership, but this does not mean that all forms are equal and or equivalent or that everybody is a leader. Gronn (2009) has advised against simply putting new labels before the word 'leadership' to signal hybrid configurations of leadership practice. It is important to recognize that each concept has its distinct scholarly literatures (Fitzsimons et al., 2011).

Shared and distributed leadership are probably the two most recognized concepts, and we will note the distinction between them in the following. Fitzsimons et al. (2011) define the two concepts as alternative approaches to studying leadership and note four key distinctions between them: (a) Shared leadership often emanates from the designated leader plus other group members who share leadership roles; DL is exercised by multiple individuals in the organization. (b) Under shared leadership, several individuals lead themselves and allow others to lead them; DL practice is constituted and shaped by interactions between leaders and followers and the organizational context. (c) In shared leadership, cognition is shared by

members of the group; in DL, cognition is ‘stretched over’ both human actors and aspects of the context they are in. (d) Shared leadership is more relevant in the context of a team or group through collective influence; DL can be practiced at all organizational levels through concerted action and conjoint agency.

Bolden et al. (2009) has also noted a difference in usage of shared and distributed leadership between countries and sectors, for example that articles about DL are mostly published in the educational sector. In recent years, however, DL has become more associated with the health care setting as ‘a model of collective leadership is more appropriate in this setting’ (Chreim et al., 2010: 187) than individual leaders. Although distributing leadership tasks in a health care setting might seem natural from a clinical managerial work perspective, due to the interdisciplinary and interdepartmental work processes, its implementation might be constrained by hierarchical organizational structures and constant pressures from funding and regulatory bodies (Chreim et al., 2010). An important characteristic of clinical managerial work is that the person with managerial responsibility may not exclusively provide care or exclusively make decisions. Generally, the ability to provide high quality treatment and care for patients does not primarily depend on a single leader; rather, leadership practices form a web of interdependent relationships (see also Bennett et al., 2003). The cross-disciplinary requirements of most patient processes call for formal cooperation between organizational units as well as the ability to dynamically distribute and delegate decision making among staff members. Furthermore, to offer patients satisfactory treatment, members of a particular process of treatment and care need to share the same objective and background knowledge (Gittell, 2002). Based on their study of trauma teams, Klein et al. (2006) suggest that DL may make it possible to coordinate work across organizational units and successfully handle task contingencies. The authors further discuss that both hierarchy and flexible work processes might be central to a unit’s ability to perform in such a setting.

However, in an organizational perspective, the hierarchical organizational structures of many public hospitals may complicate the introduction and performance of DL (Currie and Lockett, 2011). Since power is often concentrated with specialists, a hierarchic understanding of work, which is the antithesis of distributing tasks, might be present. Additionally, New Public Management reforms<sup>1</sup> with their increasing focus on individual accountability may encourage health care professionals to step back from DL practices to secure their own performance evaluation (Currie and Lockett, 2011). Therefore, one might argue that the context of a health care organization makes the successful realization of DL rather difficult, as it calls for leaders that can enable individual and collective leadership in tandem (Bolden et al., 2008, 2009). In the following, we discuss how various leadership styles currently recognized in literature can facilitate or promote agency in DL.

### ***Formal leadership styles: Distribution components of transformational, transactional and empowering leadership***

*Transformational leadership* is considered one of the most influential contemporary leadership theories (Dumdum et al., 2002; Gardner et al., 2010; Judge and Bono, 2000; Lowe and Gardner, 2000). Transformational leaders ‘broaden and elevate the interests of their employees, generate awareness and commitment of individuals to the purpose and mission of the group, and (...) they enable subordinates to transcend their own self-interests for the betterment of the group’ (Seltzer et al., 1989: 174). Transformational leaders are theorized to

enhance followers' motivation and performance by charisma or idealized influence (i.e. engaging in behaviours that build employee trust in and identification with their leaders); intellectual stimulation (i.e. challenging the status quo); individualized consideration (i.e. attending to employees' needs and listening to their concerns); and inspirational motivation (i.e. articulating a compelling vision of the future) (Bass, 1985). Accordingly, transformational leaders are '(1) providing vision, (2) expressing idealism, (3) using inspirational communication, (4) having high performance expectations, (5) challenging the status quo, and (6) providing intellectual stimulation' (Pearce and Sims Jr., 2002: 175).

As the term suggests, transformational leaders transform their employees and thereby bring positive changes to their organizations (Bass, 1998). Transformational leadership studies primarily focus on outcomes on an organizational level and find associations between transformational leadership and innovation and transformational leadership and performance (among others, Berson and Linton, 2005; Bono and Judge, 2003; Judge and Piccolo, 2004). As far as outcomes on an individual level, the literature has demonstrated the positive impact of transformational leadership on followers' job satisfaction, motivation, supervisory satisfaction, job performance and organizational citizenship behaviour (see Judge and Piccolo, 2004; Wang et al., 2011, for meta-analytic reviews).

Kark and Shamir (2002) argue that the impact of transformational leadership is based on the leader's success in linking employees' self-concept or identity to the vision of their organization with the goal of 'absolute emotional and cognitive identification' (Bass, 1998: 50). This positive impact of identification arguably increases employees' agency to pursue collective goals (Shamir et al., 1993). Additionally, a strong impact on intrinsic motivation as shown by Gardner and Avolio (1998) should lead to a stronger engagement. Hence, we expect a significant and positive impact of transformational leadership on employees' involvement in distributing leadership practices.

*Transactional leadership* favours exchange process. A transactional leader operates within an existing system or culture by (a) attempting to satisfy the current needs of employees by focusing on exchanges and contingent reward behaviour, and (b) paying close attention to deviations, mistakes or irregularities and taking corrective action (Bass, 1985). Accordingly, representative behaviours include '(1) providing personal rewards, (2) providing material rewards, (3) managing by exception (active), and (4) managing by exception (passive)' (Pearce and Sims Jr., 2002: 174). Transactional leadership is conceptually related to the cultural maintenance form of leadership specified by Trice and Beyer (1993), which focuses on strengthening existing structures, strategies and culture in an organization. In line with upper echelons theory (Hambrick and Mason, 1984), researchers state that this is an active form of strategic leadership that may improve an organization's effectiveness. Leaders support better organizational performance by rewarding followers' efforts and commitment, which are in line with the specified goals, and by intervening to correct deviations (Tosi, 1982). A transactional leader manages on a micro level, for example, daily tasks. Meta-analytic studies provide overall support for the performance-stimulating potential of transactional leadership (Lowe et al., 1996).

A transactional leader does not expect or encourage employees to exceed defined goals or to change the status quo. However, a leader who promises followers a tangible reward for participating in DL prompts them to adapt their behaviour to more agency in DL. As a transactional leader motivates employees extrinsically (Amabile, 1998), only incentives for participation can lead to agency in DL. One might argue that employees will take on DL to the degree they are rewarded for it; however, as discussed by Bennett et al. (2003),

DL may not unfold as an emergent property of a group. Therefore, we only expect a weak or non-existing relationship between transactional leadership and agency in DL.

*Empowering leadership* Transformational and transactional leadership dominated the leadership literature until Pearce et al.'s (2003) theoretical and empirical analysis expanded the transactional-transformational paradigm. The major contribution of their analysis was to clearly identify *empowering leadership* with its focus on influencing others by developing follower self-leadership capabilities as a distinctive type of leadership. An empowering leader helps employees develop their own self-leadership skills to contribute more comprehensively to the organization.

According to Ahearne et al. (2005), empowering leadership involves highlighting the value of the work, inclusion in decision making, conveying confidence in high performance, and freeing employees from bureaucratic constraints. Accordingly, representative behaviours include '(1) encouraging independent action, (2) encouraging opportunity thinking, (3) encouraging teamwork, (4) encouraging self-development, (5) using participative goal setting, and (6) encouraging self-reward' (Pearce and Sims Jr., 2002: 176). Some researchers (e.g. Erez and Arad, 1986) argue that empowering leaders may emphasize that inclusion of employees in leadership functions and commonly defined goals could lead to higher performance and satisfaction.

Empowering leadership can be viewed as an approach that offers prescriptions to leaders for arranging the distribution and exercise of power. These behaviours are conceptually highly relevant to agency in DL. Inherent in the combination of empowering leadership behaviours is the delegation of authority to an employee to enable that employee to make decisions and implement actions without direct supervision or intervention (Bass, 1985; Jung et al., 2003). This clearly corresponds to the conceptualization of DL where ownership of work and employee self-directedness are core pillars. Furthermore, empowering leadership is positively related to both knowledge sharing and team efficacy (Srivastava et al., 2006) as it is also theorized for DL. Therefore, we expect a strong positive relationship between formal empowering leadership and DL practices. Based on the above discussion, the following hypotheses are proposed.

*H1: Transformational leadership has a strong positive impact on employees' involvement in distributed leadership practices.*

*H2: Transactional leadership has a weak positive impact on employees' involvement in distributed leadership practices.*

*H3: Empowering leadership has a strong positive impact on employees' involvement in distributed leadership practices.*

*H4a: Transformational leadership is more strongly related to promoting employee involvement in distributed leadership than transactional leadership.*

*H4b: Empowering leadership is more strongly related to promoting employee involvement in distributed leadership than transformational leadership.*

### **Organizational efficacy and distributing leadership practices**

The theory of self-efficacy has been applied in the form of collective self-efficacy, and studies have shown that the collective efficacy of a group predicts its collective performance (Gully et al., 2002; Tasa et al., 2007). Studies in various research contexts show that concepts such as self-efficacy or collective efficacy are strong moderators or mediators in the relationship

between leadership behaviour and employee performance (e.g. Nielsen et al., 2009; Walumbwa et al., 2004).

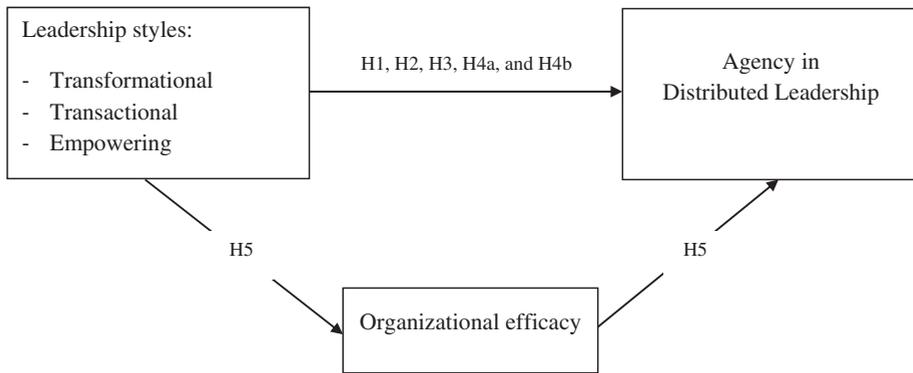
Organizational efficacy is defined as a generative capacity within an organization to cope effectively with the demands, challenges, stressors and opportunities it encounters within the organizational environment. Studies have shown that leadership behaviours correlate with the collective capacities of an organization as well as its sense of mission and resilience (Bohn, 2002). However, researchers have not explored the mediating impact of organizational efficacy on the relationship between leadership styles and agency in DL. In this regard, we develop our arguments with the help of socially shared cognitions and psychological ownership theory (Dyne and Pierce, 2004; Pierce et al., 2003).

*Socially shared cognitions and psychological ownership.* Employees face many challenges when they work together to achieve common organizational outcomes (Guttman, 2008). This makes collective representation in leadership activities essential. A collective belief in organizational efficacy may promote or facilitate DL practices, because as Bohn (2010) argues, social identity will influence organizational members' collective perceptions of organizational efficacy (Ashforth and Mael, 1989). Social identity is composed of the individuals' understanding of who they are based on their social group(s) membership(s) and the value and emotional significance attached to that membership (Tajfel, 1978). Studies have shown that members who belong to a group develop a shared sense of their capabilities and based on that might act together to achieve certain outcomes (Zaccaro et al., 1995). Thus, people may develop shared social cognitions and perform in various situations together.

We can explore why organizational efficacy is likely to mediate the relationship between leadership styles and agency in DL by extending the social identity perspective to the theory of psychological ownership. Like DL's emphasis on numerical and concertive action (i.e. the overall numerical frequency of the acts contributed by each group member and agents' conjoint actions, Gronn, 2002), organizational efficacy talks about the belief in agents' conjoint capabilities. Thus, it might be argued that belief in conjoint capabilities may lead to a synchronization of efforts by organizational members. This becomes more likely in a state of psychological ownership among organizational members.

Psychological ownership theory has its roots in a set of intra-individual motives like efficacy, self-identity, belongingness and accountability (Pierce et al., 2003). When employees identify themselves through the organization, organizational targets become their own targets (Belk, 1988) and these targets become relevant to employees' self-efficacy and responsibility for their actions (Avey et al., 2009). Previous studies highlight this by showing that ownership attitude has positive influences on job satisfaction, commitment, organization-based self-esteem and organizational citizenship behaviour (Van Dyne and Pierce, 2004), character strength and psychological well-being (Wright and Cropanzano, 2004).

We propose that psychological ownership and shared social cognition will improve feelings of attachment and possession towards the organization, and such feelings help develop the belief in the collective capacities of members in promoting agency in DL. Moreover, psychological ownership helps develop bonding in the hierarchal levels of organizations. Development of ownership privileges creates psychological contracts between employees and organization; employees show more interest in the investment and performance of the organization (Rousseau and Shperling, 2003). The development of this bond between managers and employees promotes agency in DL by developing a sense of collective



**Figure 1.** Theoretical model of investigated relationships.

organizational efficacy. Based on the above discussion, the following additional hypothesis is proposed:

*H5: Organizational efficacy will mediate the relationship between leadership styles and employee involvement in distributed leadership practices.*

In sum, this results in the following theoretical model for investigating the impact of different formal leadership styles on agency in distributed leadership (see Figure 1).

## Data and methods

### Data collection

The data for this study were collected in the first part of a longitudinal, cross-disciplinary field study in one of Scandinavia's largest public hospitals. In the spring 2012, the hospital went through a process of physical and managerial restructuring. Four smaller hospitals were closed and their staff and hospital functions were merged into the new and larger hospital, 'Hospitalsenhed Midt', the case of the present study. Generally, health care and hospitals are a very conservative case for testing our hypothesis about the formal leadership style-agency in distributed leadership relationship. This has to do with the professional bureaucracy archetype of hospitals, which may be especially pronounced in a Scandinavian context where the vast majority of hospitals are publicly owned, funded and densely regulated by central government (Vallgård, 2010). On the other hand, the formal hierarchy is modified by strong corporatist traditions that accommodate professionals' unions and imply formal committees for management-employee cooperation in day-to-day management of the hospitals. We discuss how the organizational context of the Danish hospital sector may affect our results in the concluding sections.

The population for our study consists of all hospital workers, including health professionals, supporting service staff and administrative staff ( $n=4,575$ ) employed at Hospitalsenhed Midt by 1 October 2012. The hospital's consent to participate in the research project was reached via personal contact with the managing director of the new hospital, and a list with names, positions and employment units of all hospital workers (including e-mail addresses if possible) was subsequently obtained from the hospital's HR-unit. To reach as many potential respondents as possible, we decided to distribute the questionnaire to different segments of the hospital staff in three different ways: by e-mail to staff with regular access

**Table 1.** Socio-demographic statistics of sample (N = 1,147).

Variables	N	%
Gender		
Male	150	13.1%
Female	997	86.9%
Age (years)		
Mean	44.4	
SD	10.31	
Organizational tenure (years)		
Mean	7.44	
SD	7.51	
Occupational group		
Nurse	462	40.3%
Service/cleaning/assistant staff	52	4.5%
Social and health care/nursing assistant	61	5.3%
Medical secretary	117	10.2%
Kitchen staff	12	1.1%
Hospital porter	13	1.0%
Radiographer	11	1.0%
Young physician	57	5.0%
Chief physician	66	5.8%
Bioanalyst	67	5.8%
Physiotherapist	75	6.5%
Administrative staff	52	4.5%
Occupational therapist	45	3.9%
Technical staff	20	1.7%
Midwife	26	2.3%
Other functionary	11	1.0%

e-mail during work hours, by personal password to the survey webpage to staff without regular access to e-mail during work hours, and by paper to staff without work e-mail. This procedure resulted in a total of 2,217 responses, corresponding to an overall response rate of 48.5%. However, after deletion of incomplete answers and doubles, the number of respondents in the present study amounted to 1,147.<sup>2</sup> See Table 1 for an overview of the sample respondents by gender, age, organizational tenure and occupational group.

Table 1 shows that the vast majority of respondents in our sample are female. This corresponds with statistics provided by the hospital and the fact that health care, especially nursing, is generally a female-dominated welfare service. Furthermore, most respondents are middle-aged with an average tenure of approximately 7.5 years in one of the merged hospital units. Finally, the largest occupational groups in the sample are nurses, medical secretaries and physicians (young and chief physicians) and are employed in 24 different hospital wards at the *Hospitalsenhed Midt* (description is available on request).

### Measurement

This section discusses how we measured the central variables used to test the proposed model and hypothesized relationships between perceptions of hospital managers' leadership

styles and hospital workers' perceived agency in DL. See Appendix 1 for a full list of questions.

With respect to the dependent variable, *employees' perceived agency in DL*, this concept does not yet have a well-established measure for use in quantitative survey studies across different sectors and services.<sup>3</sup> This longitudinal cross-disciplinary field study of DL in Hospitalsenhed Midt has therefore focused specifically on developing and validating a measurement scale, which can be used in a health care context. Details about the development and validation of survey items and construction of the scale are described in Jønsson et al. (2016). Based on their theoretical definition of employees' agency in DL as the perceived sharing of generic leadership tasks to influence resource availability, decision making and goal setting within an organizational perspective, our scale measures employees' inclination to engage in the coordination and setting of goals as well as the planning, organization and implementation of resource allocation and HR activities in their departments. The proposed scale draws on Yukl et al. (2002), who identified three meta-categories of leadership behaviour; change-oriented, task-oriented and relation-oriented, to answer the question of what it is that leaders do.

The original version of the scale as it was theoretically developed for inclusion in the survey consisted of 11 items, which were all formulated as questions about employees' self-assessed involvement in leadership activities indicated on a five-point Likert-type scale ranging from 1 (none) to 5 (very much). This means that agency in DL is a subjective measure at the individual level rather than observed interplay between managers/employees at the team/group level since such a measure is virtually impossible to form validly across the many different internal structures at hospital wards and units. One item, 'Have you contributed to working out strategies for formulation of employment policy?', was deleted from the scale at an early stage because it was very skewed; nearly 70% replied that they are not at all involved in such activities. This indicates that this task generally does not take place in the hospital units but rather higher up in the HR department.

As part of the initial validation procedure of the scale, 10 items underwent an exploratory factor analysis (principal axis factoring) on a randomly selected 50% of the sample (the calibration sample) (Homburg, 1991). This analysis suggested a one-factor model (eigenvalue of 5.50), which was subsequently adjusted by eliminating three more items based on an exploratory modification index-based process (Byrne, 2012; Jønsson et al., 2016). This resulted in a theoretically and statistically acceptable seven-item model. Next, using the other half of the sample (the validation sample), a confirmatory factor analysis (CFA) confirmed a one-factor model for measuring agency in DL consisting of seven items. The fit statistics for this model are  $\chi^2 = 47.27$  (14), RMSEA = .05, CFI = .98, TLI = .97 and SRMR = .024. The scale was tested for invariance across hospital departments and occupational groups, and the discriminant and convergent validity of the scale was shown (Jønsson et al., 2016). The final measure of our dependent variable was thus constructed as a reflective index rescaled to range from 0 to 100, where 100 is maximum perceived agency in DL, with a reliability of  $\alpha = .89$ .

The main independent variables, the three types of leadership styles *transformational*, *transactional* and *empowering leadership*, were measured using previously validated measurement scales from the general management literature. We used 20 items to measure transformational leadership and eight items to measure transactional leadership taken from the Multifactor Leadership Questionnaire (MLQ) Form 5X<sup>4</sup> (Bass and Avolio, 1997). These scales are among the most frequently used and best validated measures on transformational and transactional leadership (Judge and Piccolo, 2004; Whittington et al., 2009).

Transformational leadership consists of four subdimensions: eight items of idealized influence (e.g. 'My leader acts in ways that I respect',  $\alpha = .93$ ), four items on inspirational motivation (e.g. 'My manager talks optimistically about the future',  $\alpha = .92$ ), four items on intellectual stimulation (e.g. 'My leader seeks differing perspectives when solving problems',  $\alpha = .90$ ), and four items on individualized consideration (e.g. 'My leader treats me as an individual rather than just as a member of a group',  $\alpha = .91$ ). Transactional leadership consists of two subdimensions: four items of contingent reward (e.g. 'My leader discusses in specific terms who is responsible for achieving performance targets',  $\alpha = .90$ ), and four items of management-by-exception active (e.g. 'My leader directs my attention towards failures to meet standards',  $\alpha = .87$ ). These subdimensions were combined to form two additive indexes for transformational and transactional leadership, respectively, rescaled to range from 0 to 100.

Leadership empowerment behaviour (consisting of the four subdimensions 'enhancing the meaningfulness of work', 'fostering participation in decision making', 'expressing confidence in high performance' and 'providing autonomy from bureaucratic constraints') was measured using the scale proposed by Ahearne et al. (2005). To avoid conceptual overlap with the DL measure, we omitted the subdimension, 'fostering participation in decision making', for the purpose of this paper's analysis. The three remaining subdimensions of empowering leadership yielded good reliability with Cronbach's alpha measures ranging from  $\alpha = .75$  for 'autonomy from bureaucratic constraints' to  $\alpha = .91$  for 'enhancing the meaningfulness of work'. As for the other two leadership styles, an additive scale for empowering leadership consisting of these three subdimensions was formed and rescaled to range from 0 to 100.

All three leadership scales were translated into Danish using the translation/back-translation procedure (Brislin, 1980). Respondents indicate how frequently they observed the behaviour of their designated leader on a five-point Likert-type scale, ranging from 1 (not at all) to 5 (frequently, if not always). To make sure that the respondents working in the same units and wards answered the questions referring to the same manager/management team, which can be quite difficult given that hospitals have both medical and managerial hierarchies, they were instructed to think of their closest manager with personnel responsibility.<sup>5</sup> Confirmatory factor analyses (CFA) were performed for all subdimensions of the three leadership styles. All scales were validated and found to meet acceptable levels of model fit statistics.<sup>6</sup>

Employees' belief in the hospital's *organizational efficacy* was measured using a 17-item scale developed by Bohn (2010), where the respondents assessed their belief in the hospital's organizational efficacy on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Since this scale is rather recently developed and not as extensively validated, we first used exploratory factor analysis (principal axis factoring with varimax rotation) on a randomly selected 50% calibration sample to test the validity of the scale using the present data. The factor analysis supported a three-factor solution consistent with the three theoretical subdimensions of organizational efficacy, 'collaboration', 'mission and future' and 'resilience' proposed by Bohn (2010), but only with four items measuring the 'collaboration' dimension ( $\alpha = .85$ ), three items measuring the 'mission and future' dimension ( $\alpha = .84$ ), and three items measuring the 'resilience' dimension ( $\alpha = .77$ ). See items in Table 4 in the Appendix 1.

Second, a CFA for the theoretically expected three-factor solution performed on the validation sample showed a very good fit with our data with model fit statistics of  $\chi^2 = 120.96$  (32), RMSEA = .06, CFI = .98, TLI = .97 and SRMR = 0.031.<sup>7</sup> The three proposed reflective indexes for perceived organizational efficacy (each rescaled to range from 0

**Table 2.** Pairwise correlations among study variables (N = 1147).

	Mean	SD	Min.	Max.	1	2	3	4	5	6	7	8	9
1 Distributed leadership	29.53	22.04	0	100	*								
2 Gender (male = 1)	0.13	0.34	0	1	0.084*								
3 Age	44.43	10.31	20	69	0.176*	0.066*							
4 Tenure (in years)	7.44	7.51	0	43	0.151*	-0.031	0.470*						
5 Transformational leadership	56.69	21.09	0	100	0.312*	-0.061*	-0.043	-0.002					
6 Transactional leadership	47.20	17.82	0	100	0.212*	-0.001	-0.112*	0.007	0.642*				
7 Empowering leadership	62.69	16.50	0	100	0.439*	-0.035	-0.008	0.050*	0.700*	0.427*			
8 Collaboration	58.17	16.43	0	100	0.006	-0.065*	-0.002	0.011	0.310*	0.215*	0.300*		
9 Mission and future	65.00	16.21	0	100	0.036	-0.065*	0.052*	0.040	0.319*	0.184*	0.320*	0.589*	
10 Resilience	68.11	20.07	0	100	0.066*	-0.029	0.011	0.052*	0.264*	0.124*	0.256*	0.346*	0.486*

\* $p < 0.05$ , correlations (Pearson's  $r$ ).

to 100) were thus constructed. Like the leadership scales, the organizational efficacy measure was translated using a translation/back-translation procedure, and to make sure that the employees assessed their perceived efficacy of the same hospital, namely the merged hospital unit, we changed the items' wording from 'this organization' or 'this company' to the name of the new merged hospital, Hospitalsenshed Midt. The fit statistics from a CFA of our entire measurement model and all the scales used in our analysis were  $\chi^2 = 1235.98$  (278), RMSEA = .05, CFI = .95, TLI = .94 and SRMR = .042, which thus showed a good fit with our data.

Finally, our study included a number of *individual-level controls*. First, we controlled for employees' gender (male=1) and age since male and female employees of different age may have different inclinations to engage in DL and certainly may have different perceived leadership styles. Second, we controlled for tenure, i.e. number of years the respondents have been employed in their current units, since employees with more experience are likely to have a more solid base for involvement in DL (and are possibly given more responsibility to do so by their leaders). Third, the respondents' occupational group was taken into account since employee involvement in various leadership tasks might be a matter of work function rather than one's manager's leadership behaviour. Finally, we controlled for the different hospital wards in which respondents are employed to even out influence from different cultures and histories.

Descriptive statistics and correlations between all variables included in the analysis of the proposed hypotheses are shown in Table 2. All three leadership styles have positive, bivariate associations with perceived employee agency in DL. For employee perception of organizational efficacy, only the 'resilience' dimension has a significant positive effect on our dependent variable. Whether this also holds in a multivariate analysis is now examined.

## Results

This section presents the results of the analysis of the proposed hypotheses concerning the relationship between employee evaluations of their managers' leadership styles and their

perceived agency in DL. Table 3 shows a series of OLS-regressions of the tested explanations for variations in employees' perceived agency in DL with one model testing each of the proposed hypotheses in consecutive order. Concerning hypothesis 1, we expected transformational leadership to have a strong, positive impact on an employee's involvement in DL practices. Model 1 shows that transformational leadership indeed has a strong positive association with perceived employee agency in DL when controlled for gender, age, tenure, occupational group and department. Moreover, hospital managers (typically leading doctors and nurses) perceived to have a more transformational leadership style apparently also have staff, who says that they are more inclined to engage in distributing leadership practices.

Next, Model 2 in Table 3 tests whether transactional leadership styles have a weak, yet positive association with perceived employee agency in DL, as stated in hypothesis 2, and Model 3 tests hypothesis 3 and expects a strong, positive association between empowering

**Table 3.** OLS-regression explaining employee agency in distributed leadership.

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender (male = 1)	3.464 (1.769)	3.283 (1.705)	3.202 (1.770)	2.724 (1.638)	3.222 (1.722)	2.786 (1.647)	2.511 (1.638)
Age	0.113 (0.058)	0.166** (0.056)	0.176** (0.057)	0.172** (0.056)	0.179** (0.057)	0.178** (0.056)	0.200*** (0.055)
Tenure (in years)	0.313*** (0.084)	0.283*** (0.080)	0.283*** (0.082)	0.257** (0.078)	0.278*** (0.080)	0.257** (0.078)	0.245** (0.078)
15 occupation group dummies (not shown)							
23 department dummies (not shown)							
Transformational leadership		0.219*** (0.024)			0.178*** (0.030)	0.060 (0.032)	0.033 (0.036)
Transactional leadership			0.205*** (0.029)		0.074* (0.036)		0.084* (0.035)
Empowering leadership				0.356*** (0.032)		0.303*** (0.043)	0.324*** (0.043)
Organizational efficacy:							
Collaboration							-0.073* (0.035)
Mission and future							-0.039 (0.038)
Resilience							0.001 (0.028)
Intercept	25.165*** (7.250)	7.419 (7.739)	14.638* (7.265)	-5.920 (8.607)	6.946 (7.671)	-6.093 (8.568)	-2.338 (8.743)
N	1079	1079	1079	1079	1079	1079	1079
R <sup>2</sup>	0.203	0.265	0.244	0.299	0.268	0.302	0.312
Adj. R <sup>2</sup>	0.171	0.235	0.213	0.271	0.238	0.272	0.281

Note: Standard errors are given in parentheses (robust). No multicollinearity was detected between main study variables (all VIF for hypotheses variables < 3.0). \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

leadership and staff engagement in DL. The results show that both hypotheses can be corroborated when the individual and organizational factors are controlled for. In line with the expectation from hypothesis 2, we can thus confirm a positive association between a transactional leadership style and employee involvement in distributing leadership practices in the hospital, and this association is somewhat stronger than expected given that the coefficient size of 0.205 is almost equal to the transformational leadership-agency in DL association (0.219). Still, these coefficients are smaller than the detected impact of an empowering leadership style on agency in DL, which confirms the strong, positive association between these measures expected in hypothesis 3.

Hypotheses H4a and H4b expect a transformational leadership style to be more likely to promote agency in DL than a transactional leadership style and likewise for an empowering leadership style compared with a transformational leadership style. Following the reported results from Models 4 and 5 in Table 3, both hypotheses are confirmed. Hospital employees who describe their managers as having a transformational leadership style also feel more involved in DL practices than employees who evaluate their managers as having a transactional leadership style (Model 4). Moreover, hospital employees who experience an empowering leadership style in turn feel more involved in DL practices compared with employees who experience a transformational leadership style (Model 5), and we even see that the strong, positive relationship between a transformational leadership style and perceived employee agency in DL disappears. This may be due to the relatively high correlation between transformational and empowering leadership styles – although no multicollinearity was detected with all VIF < 3.0.<sup>8,9</sup>

Finally, in Model 6, Table 3, we include employees' perception of organizational efficacy, which hypothesis 5 expected to be a mediator of the relationship between leadership styles and employees' involvement in DL practices. The regression analysis does not confirm this as the estimated coefficients for the association between the three leadership styles and perceived employee agency in DL more or less stay the same; that is after control for the three subdimensions of perceived organizational efficacy, and the increase in the model's  $R^2$  by including these variables is only of very modest size. Moreover, the 'collaboration' dimension of organizational efficacy turns out to have a significant *negative* association with hospital employee involvement in DL practices meaning that those who perceive more organizational efficacy in terms of collaboration efforts seem less inclined to be involved in DL practices. This surprising result and the lacking transformational leadership-agency in DL association when testing hypothesis 4b will be discussed next.

## Discussion

The primary objective of this study was to deepen our understanding of agency in DL in a health care context by testing the predicted relationships between various formal leadership styles, organizational efficacy and perceived employee agency in DL. Results demonstrated that leadership styles and organizational efficacy had significant associations with perceived employee agency in DL. The strength and direction of the relationships between the three leadership styles, i.e. transformational, transactional and empowering with perceived agency in DL was according to our theoretical understanding although the impact of transactional leadership and transformational leadership were almost equal. All hypotheses regarding the formal leadership–DL relationship (H1, H2, H3, H4a and H4b) were thus supported. Regarding organizational efficacy, H5 was however not supported by the results.

Our results are most favourable towards the importance of empowering leadership style in supporting the employee agency in DL as also argued in the theory section. This is well in line with previous studies that showed that empowering leaders create an atmosphere of trust by putting their confidence in employees' competencies to deliver results and enabling employees to take ownership of their work and organization – independent of current circumstances (e.g. Jung et al., 2003). In this way, managers with empowering leadership styles may be perceived as more credible compared with transformational and transactional types of managers, since they give more autonomy and freedom to employees who are closest to the customer, in our case the patients. Furthermore, this leadership style may be more 'untouched' by the ongoing New Public Management-inspired hospital reforms since this measure is not related to the (perhaps unclear) visions/future of the hospital or to the specific management tools of monitoring and incentivizing.

Our findings support the view that goals defined in common can improve employee performance and satisfaction (Erez and Arad, 1986). Empowering leaders thus have a stronger impact on employees' participation through self-efficacy as also argued by other researchers (Latham et al., 1994). We suggest that empowering leaders therefore create better preconditions for the successful implementation of DL practices than transformational and transactional leaders. This effect might be especially strong in health care settings as empowering leaders can provide autonomy and freedom in a very hierarchical, complex and predefined setting where these attributes are crucial in the performance of daily tasks. Additionally, empowering leadership might let employees gain confidence to perform in interdisciplinary teams and across hierarchical boundaries. This might be further strengthened in a Danish/Scandinavian public sector organizational context where the formal employee-management corporation committees also provide a strong arena for empowering leadership to become effective.

In contrast to empowering leadership, transformational leadership seems to be more affected by the ongoing, external changes and therefore has a comparably weaker association with agency in DL. Denmark is one of many Western countries where public sector organizations have gone through a range of New Public Management reforms, which may slowly dissolve goal setting from daily work life (Dent et al., 2004; Greve, 2009; Hood, 1991). Employees involved in the formulation and realization of shared goals are fundamental in gaining worker commitment to implement a future vision. Such commitment might be missing among employees due to an uncertain work environment created by the regional health authorities, as leaders cannot translate the meaning of constantly evolving New Public Management initiatives to their employees. While previous research has assigned transformational leadership a crucial role in communicating the vision behind reform programs and in gaining the commitment of workers to implement that vision (Franco et al., 2002), the speed of the reforms and their top-down implementation are likely to have made it harder for the hospital staff to buy into the visions of the organization and feel that they play an important role in leading the organization. Altogether, these context features of our hospital case have provided a hard case for transformational leadership exercised by department and unit leaders to have strong and positive associations with employee agency in DL.

Conversely, transactional leadership seems to be more aligned with the New Public Management reforms focusing on, for instance, monitoring and benchmarking the quality of health care work using organizational and clinical indicators as well as controlling

and incentivizing employee behaviour (e.g. Bass, 1990) and therefore has a positive impact. In these settings, transactional leadership has thus succeeded in supporting employee agency in DL based on a give-and-take approach. This might be additionally strengthened by the organizational context of the hospital sector with its hierarchical bureaucratic structure – because transactional leaders can more easily see themselves positioned in and adapting to such reforms.

Another interesting finding in the particular health care context of this study is the negative relationship between employees' belief in organizational efficacy on the collaboration dimension and perceived employee agency in DL, which runs contrary to our hypothesis. Other studies demonstrate a significant positive impact of collective efficacy on group involvement and performance (Gully et al., 2002; Tasa et al., 2007). Denmark is a country with high social trust and considerable public confidence in public institutions (Brandt and Svendsen, 2010; Jørgensen, 2006; Newton and Norris, 1999) – especially at a local level (Denters, 2002). Of all EU countries, trust in the civil service is highest in Austria, Ireland, Luxembourg, Denmark and the Netherlands, where more than 55% of the population trust the civil service (Van de Walle et al., 2008). It might be argued that when employees in a public organization express confidence in local public institutions, this translates into trust in a public organization's ability to carry out its tasks. In other words, employees may perceive that they have limited discretion to perform leadership tasks and wait for the top management's instructions. In the Scandinavian health care context, employees might prefer to only step up to participate in leadership functions when they perceive that the organization is struggling. In this case, employees take psychological ownership of both task and organization to enable the organization to carry out its tasks.

## Conclusion

This study is the first of its kind to investigate the significance of various leadership styles (transformational, transactional and empowering) in promoting the concept of DL in organizations. Unlike most studies of the concept of DL, this study has been carried out in the health care sector where hierarchical levels are formally established and leadership may have a significant influence on the spread of DL. As the first comprehensive quantitative study of perceived agency in DL, the study adds important new insights to the DL research domain.

Our findings are useful for leaders and managers who are responsible for implementing change initiatives. Results indicate the overall importance of formal leadership in the context of major organizational change in the public sector – and especially when these are New Public Management-inspired. Independent of their leadership style, formal leaders play a crucial role in motivating, enabling and initiating employees to take on leadership tasks. Especially empowering leaders with their focus on developing self-leadership skills have a strong influence on agency in DL, as their leadership style and their employees are likely to be rather unaffected by current change initiatives as in our case a political reform leading to a merger.

Additionally, this research finds a negative association between organizational efficacy and perceived employee agency in DL in this particular health care context, indicating that the belief in organizational capability does not necessarily translate into willingness to engage in leading the organization or parts thereof. This is a warning that New Public

Management reforms may increase the perceived distance between employees' work and their organization. Further exploration in other contexts is needed, since efficacy is taken as one of the most important determinants of success at the individual and collective level in psychological and management literature.

Following this call, one of the strengths of this study – that it takes place in a health care context of a specific reform – also becomes a limitation as the results are not necessarily generalizable to other service domains. Another limitation concerns the fact that all measures originate from the same survey, which is likely to result in common method bias (Podsakoff et al., 2003). However, recent methodological contributions to the public management literature dismiss all known statistical methods to test for this potential bias (Favero and Bullock, 2015; Jakobsen and Jensen, 2015). Since we are not able to draw on separate data sources, the reader should bear in mind that the analysed associations cannot be the basis for causal interpretation. Yet, our main independent variable, the leadership styles, and our main dependent variable, perceived agency in distributed leadership, concern an evaluation of the leader vs. an evaluation of the employee, respectively, which may limit some of the potential common method variance. Furthermore, our inclusion of 23 dummy variables for the hospital wards rules out different within-ward organizational cultures regarding leadership practices and cooperation as a source of bias.

A final limitation to keep in mind is that some of the items might describe behaviours and practices of managers rather than leaders (Kent, 2005). Further research into different leadership styles, especially in the health care sector, might want to focus more on leadership aspects and less on aspects of organizational work. This being said, and acknowledging that leadership and management are complementary (Kotter, 1990), our results may give a good indication of the value of the three investigated leadership styles in times of change in the public sector. Given these limitations, future research might also use a mixed-method approach to examine the role of formal leadership styles in the health care management context. Longitudinal research can be helpful to uncover the patterns of leadership influence on agency in DL, and qualitative data might be useful to shed light on the more specific impacts of the institutional context.

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## Notes

1. Although highly contested, the term 'New Public Management' usually encompasses the many market-oriented reforms and private sector-inspired management tools adopted in public sectors in many Western countries since the beginning of the 1980s. This includes, among other things, outsourcing and privatization of public welfare services and introduction of performance measurement schemes and pay-for-performance at all levels in public organizations (Dent et al., 2004; Greve, 2009; Hood, 1991).
2. The main reason for the relatively large difference between the total number of responses and the valid sample size used in the analysis is many incomplete answers due to the length of the questionnaire (232 questions/items). The only population statistics available from the hospital is the gender composition among employees with 81.2% females and 18.8% males.
3. With the exception of Hulpia et al. (2009), who proposed a three-dimensional scale to assess the concept of DL in large secondary schools.
4. MLQ Form 5X (copyright 1995 by Bernard Bass and Bruce Avolio) is used with the permission of Mind Garden, 1690 Woodside Road, Suite, 202, Redwood City, CA 94601. All rights reserved.
5. The validity of this instruction in terms of capturing the relevant and identical managers within the units was verified through a pilot survey followed by semi-structured interviews in four hospital units.
6. The CFA model fit statistics for the three leadership scales were transformational leadership (four-factor model)  $\chi^2 = 1907.53$  (164), RMSEA = .08, CFI = .93, TLI = .92, SRMR = .038, transactional leadership (two-factor model)  $\chi^2 = 409.39$  (19), RMSEA = .12, CFI = .94, TLI = .91, SRMR = .068 and empowering leadership (three-factor model)  $\chi^2 = 282.03$  (24), RMSEA = .08, CFI = .97, TLI = .96, SRMR = .037.
7. The model fit statistics from a CFA using the originally proposed 17 items from Bohn (2010) showed a very poor fit with our data ( $\chi^2 = 478.51$  (116), RMSEA = .06, CFI = .60, TLI = .53, SRMR = .29), indicating that the adjustment in number of items on the subdimensions was required.
8. As an extra robustness test of this result, we performed the analysis omitting the 'enhancing the meaningfulness of work' items from the empowering leadership scale, as these items may have most conceptual overlap with the transformational leadership scale. The additional analysis showed that the relationship between transformational leadership and agency in DL is still insignificant ( $p < .131$ ).
9. A Harman's single factor test for common source bias with an unrotated principal components factor analysis of all the items used to measure our main variables of interest showed that 36% of the variance can be explained by the first and largest factor, and eight factors had an eigenvalue  $> 1$ . A conventional interpretation of this test result would suggest that common method variance is not a severe problem in our case (Podsakoff et al., 2003).

## References

- Ahearne M, Mathieu J and Rapp A (2005) To empower or not to empower your sales force? An empirical examination of the influence of leadership empowerment behavior on customer satisfaction and performance. *Journal of Applied Psychology* 90(5): 945–955.
- Amabile TM (1998) How to kill creativity. *Harvard Business Review* 76(5): 77–87.
- Ashforth BE and Mael F (1989) Social identity theory and organization. *Academy of Management Review* 14(1): 20–39.

- Avey JB, Avolio B, Crossley C, et al. (2009) Psychological ownership: theoretical extensions, measurement, and relation to work outcomes. *Journal of Organizational Behavior* 30(2): 173–191.
- Bandura A (1997) *Self-efficacy. The Exercise of Control*. New York: WH Freeman.
- Bass BM (1985) *Leadership and Performance beyond Expectations*. New York: Free Press.
- Bass BM (1990) *Bass and Stogdill's Handbook of Leadership: Theory, Research and Applications*. New York: Free Press.
- Bass BM (1998) *Transformational Leadership: Industry, Military and Educational Impact*. Mahwah: Erlbaum.
- Bass BM and Avolio BJ (1997) *Full Range of Leadership: Manual for Multi-factor Leadership Questionnaire*. Palo Alto: Mind Garden.
- Bate P (2000) Changing the culture of a hospital: from hierarchy to networked community. *Public Administration* 78(3): 485–512.
- Belk RW (1988) Possessions and the extended self. *Consumer Research* 15(2): 139–168.
- Bennett N, Wise C, Woods P, et al. (2003) *Distributed Leadership*. Nottingham: National College for School Leadership.
- Berson Y and Linton J (2005) An examination of the relationships between leadership style, and employee satisfaction in R & D versus administrative environments. *R&D Management* 35(1): 51–60.
- Bohn JG (2002) The relationship of perceived leadership behaviors to organizational efficacy. *The Journal of Leadership and Organizational Studies* 9(1): 66–79.
- Bohn JG (2010) Development and exploratory validation of an organizational efficacy scale. *Human Resource Development Quarterly* 21(3): 227–251.
- Bolden R (2011) Distributed leadership in organizations: a review of theory and research. *International Journal of Management Reviews* 13(3): 251–269.
- Bolden R, Petrov G and Gosling J (2008) Tensions in higher education leadership: Towards a multi-level model of leadership practice. *Higher Education Quarterly* 62(4): 358–376.
- Bolden R, Petrov G and Gosling J (2009) Distributed leadership in higher education: rhetoric and reality. *Administration and Leadership* 37(2): 257–277.
- Bono JE and Judge TA (2003) Self-concordance at work: Toward understanding the motivational effects of transformational leadership. *Academy of Management Journal* 46(5): 554–571.
- Brandt US and Svendsen GT (2010) The survival of the nordic welfare state and social trust. *Nordic Journal of Political Economy* 36(8): 1–15.
- Brislin RW (1980) Translation and content analysis of oral and written material. In: Triandis HC and Berry JW (eds) *Handbook of Cross-Cultural Psychology*, Vol. 2. Boston: Allyn & Bacon, pp. 389–444.
- Byrne B (2012) *Structural Equation Modelling with Mplus. Basic Concepts, Applications and Programming*. New York: Routledge.
- Chreim S, Williams BE, Janz L, et al. (2010) Change agency in a primary health care context: The case of distributed leadership. *Health Care Management Review* 35(2): 187–199.
- Currie G and Lockett A (2011) Distributing leadership in health and social care: concertive, conjoint or collective? *International Journal of Management Reviews* 13(3): 286–300.
- Day C, Sammons P, Leithwood K, et al. (2009) *The Impact of Leadership on Pupil Outcomes*. Final Report, London: DCSF.
- Dent M, Chandler J and Barry J (2004) *Questioning the New Public Management*. Burlington: Ashgate.
- Denters B (2002) Size and political trust: evidence from Denmark, the Netherlands, Norway, and the United Kingdom. *Environment and Planning C: Government and Policy* 20(6): 793–812.
- Dumdum UR, Lowe KB and Avolio BJ (2002) A meta-analysis of transformational and transactional leadership correlates of effectiveness and satisfaction: An update and extension. In: Avolio BJ and Yammarino FJ (eds) *Transformational and Charismatic Leadership: The Road Ahead*. Oxford: Elsevier Science, pp. 33–66.
- Dyne LV and Pierce JL (2004) Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behavior. *Journal of Organizational Behavior* 25(4): 439–459.

- Engeström Y (1999) Activity Theory and Individual and Social Transformation. In: Engeström Y, Meittinen R and Punamäki R-L (eds) *Perspectives on Activity Theory*, pp. 19–38. Cambridge: Cambridge University Press.
- Erez M and Arad R (1986) Participative goal setting: Social motivational and cognitive factors. *Journal of Applied Psychology* 71(4): 591–597.
- Favero N and Bullock JB (2015) How (not) to solve the problem: An evaluation of scholarly responses to common source bias. *Journal of Public Administration Research and Theory* 25(1): 285–308.
- Fitzsimons D, James KT and Denyer D (2011) Alternative approaches for studying shared and distributed leadership. *International Journal of Management Reviews* 13(3): 313–328.
- Franco LM, Bennett S and Kanfer R (2002) Health sector reform and public sector health worker motivation: a conceptual framework. *Social Science & Medicine* 54(8): 1255–1266.
- Gardner WL and Avolio BJ (1998) The charismatic relationship: A dramaturgical perspective. *Academy of Management Review* 23(1): 32–58.
- Gardner WL, Lowe KB, Moss TW, et al. (2010) Scholarly leadership of the study of leadership: A review of *The Leadership Quarterly's* second decade, 2000–2009. *The Leadership Quarterly* 21(6): 922–958.
- Gibb CA (1954) Leadership. In: Lindzey G (ed.) *Handbook of Social Psychology*, Vol. 2. Reading, MA: Addison-Wesley, pp. 877–917.
- Gittel JH (2002) Coordinating mechanisms in care provider groups: relational coordination as a mediator and input uncertainty as a moderator of performance effects. *Management Science* 48(11): 1408–1426.
- Greve C (2009) *Offentlig ledelse. Teorier og temaer i et politologisk perspektiv*. Copenhagen: Jurist-og Økonomforbundets Forlag.
- Gronn P (2000) Distributed properties: a new architecture of leadership. *Educational Management and Administration* 28(3): 317–338.
- Gronn P (2002) Distributed leadership. In: Leithwood K, Hallinger P, Seashore K, et al. (eds) *Second International Handbook of Educational Leadership and Administration*. Dordrecht: Kluwer, pp. 653–696.
- Gronn P (2008) The future of distributed leadership. *Journal of Educational Administration* 46(2): 141–158.
- Gronn P (2009) Leadership configurations. *Leadership* 5(3): 381–394.
- Gully S, Incalcaterra K, Joshi A, et al. (2002) A meta-analysis of team efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology* 87(5): 819–832.
- Guttman HM (2008) *Great Business Teams: Cracking the Code for Standout Performance*. San Francisco: Wiley.
- Hambrick DC and Mason PA (1984) Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review* 9(2): 193–206.
- Harris A (2011) Distributed leadership: current evidence and future directions. *Journal of Management Development* 30(10): 20–32.
- Homburg C (1991) Cross-validation and information criteria in causal modeling. *Journal of Marketing Research* 28(2): 137–144.
- Hood C (1991) A public management for all seasons? *Public Administration* 69(1): 3–19.
- Hulpia H and Devos G (2009) Exploring the link between distributed leadership and job satisfaction of school leaders. *Educational Studies* 35(2): 153–171.
- Hulpia H, Devos G and Rosseel Y (2009) Development and validation of scores on the Distributed Leadership Inventory. *Educational and Psychological Measurement* 69(6): 1013–1034.
- Hulpia H, Devos G and Keer HV (2011) The relation between school leadership from a distributed perspective and teachers' organizational commitment: Examining the source of the leadership Function. *Educational Administration Quarterly* 47(5): 728–771.

- Jakobsen M and Jensen R (2015) Common method bias in public management studies. *International Public Management Journal* 18(1): 3–30.
- Jönsson T, Unterrainer C, Jeppesen HJ and Jain AK (2016) Measuring distributed leadership agency in a hospital context: Development and validation of a new scale. *Journal of Health Organization and Management*. In press.
- Jørgensen TB (2006) Public values, their nature, stability and change. The case of Denmark. *Public Administration Quarterly* 30(3–4): 365–398.
- Judge TA and Bono JE (2000) Five-factor model of personality and transformational leadership. *Journal of Applied Psychology* 85(5): 751–765.
- Judge TA and Piccolo RF (2004) Transformational and transactional leadership: A meta-analytical test of their relative validity. *Journal of Applied Psychology* 89(5): 755–768.
- Jung DI, Chow C and Wu A (2003) The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly* 14(4–5): 525–544.
- Kark R and Shamir B (2002) The dual effect of transformational leadership: priming relational and collective selves and further effects on followers. In: Avolio BJ and Yammarino FJ (eds) *Transformational and Charismatic Leadership: The Road Ahead*, Vol. 2. Oxford: Elsevier Science, pp. 67–91.
- Kent TW (2005) Leading and managing: It takes two to tango. *Management Decision* 43(7–8): 1010–1017.
- Klein KJ, Ziegert JC, Knight AP, et al. (2006) Dynamic delegation: shared hierarchical, and deindividualized leadership in extreme action teams. *Administrative Science Quarterly* 51(4): 590–621.
- Kotter JP (1990) What leaders really do. *Harvard Business Review* 68(3): 103–111.
- Latham GP, Winters DC and Locke EA (1994) Cognitive and motivational effects of participation: A mediator study. *Journal of Organizational Behavior* 15: 49–63.
- Leithwood K, Day C, Sammons P, et al. (2006) *Successful School Leadership: What It Is and How It Influences Pupil Learning*. Nottingham: DfES Publications.
- Leithwood K, Harris A and Hopkins D (2008) Seven strong claims about successful school leadership. *School Leadership and Management* 28(1): 27–42.
- Leithwood K, Mascall B and Strauss T (2009) *Distributed Leadership According to the Evidence*. London: Routledge.
- Lowe KB and Gardner WL (2000) Ten years of *The Leadership Quarterly*: Contributions and challenges for the future. *The Leadership Quarterly* 11(4): 459–514.
- Lowe KB, Kroeck KG and Sivasubramaniam N (1996) Effectiveness correlates of transformational and transactional leadership: a meta-analytical review of the literature. *Leadership Quarterly* 7(3): 385–425.
- Newton K and Norris P (1999) Confidence in public institutions: Faith, culture or performance? In: *Annual meeting of the American political science association*, Atlanta, USA, 1–5 September 1999.
- Nielsen K, Yarker J, Randall R, et al. (2009) The mediating effect of team and self-efficacy on the relationship between transformational leadership, and job satisfaction and psychological well-being in healthcare professionals: A cross-sectional questionnaire survey. *International Journal of Nursing Studies* 46(9): 1236–1244.
- Pearce CL and Sims HP Jr. (2002) Vertical versus shared leadership as predictors of the effectiveness of change management teams: an examination of aversive, directive, transactional, transformational and empowering leader behaviours. *Group Dynamics: Theory, Research and Practice* 6(2): 172–197.
- Pearce CL, Yoo Y and Alavi M (2003) Leadership, social work, and virtual teams: the relative influence of vertical versus shared leadership in the non-profit sector. In: Riggio RE and Smith S (eds) *Improving Leadership in Nonprofit Organizations*. San Francisco, CA: Jossey-Bass, pp. 180–203.

- Pierce JL, Kostova T and Dirks KT (2003) The state of psychological ownership: integrating and extending a century of research. *Review of General Psychology* 7(1): 84–107.
- Podsakoff PM, MacKenzie SB, Lee JY, et al. (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88(5): 879–903.
- Rousseau DM and Shperling Z (2003) Pieces of the action: ownership and the changing employment relationship. *Academy of Management Review* 28(4): 553–571.
- Seltzer J, Numerof R and Bass B (1989) Transformational leadership: Is it a source of more burnout and stress? *Journal of Health and Human Resources Administration* 12(2): 174–185.
- Shamir B, House RJ and Arthur M (1993) The motivational effects of charismatic leadership: a self-concept based theory. *Organizational Science* 4(4): 577–594.
- Shondrick SJ, Dinh JE and Lord G (2010) Developments in implicit leadership theory and cognitive science: applications to improving measurement and understanding alternatives to hierarchical leadership. *Leadership Quarterly* 21(6): 959–978.
- Spillane JP, Halverson R and Diamond JB (2004) Towards a theory of leadership practice: a distributed perspective. *Journal of Curriculum Studies* 36(1): 3–34.
- Srivastava A, Bartol KM and Locke EA (2006) Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of Management Journal* 49(6): 1239–1251.
- Tajfel H (1978) Social categorization, social identity, and social comparison. In: Tajfel H (ed.) *Differentiation Between Social Groups: Studies in the Social Psychology of Intergroup Relations*. London: Academic Press, pp. 61–76.
- Tasa K, Taggar S and Seijts G (2007) The development of collective efficacy in teams: A multilevel and longitudinal perspective. *Journal of Applied Psychology* 92(1): 17–27.
- Tosi HJ (1982) Toward a paradigm shift in the study of leadership. In: Hunt JG, Sakaran U and Schriesheim CA (eds) *Leadership Beyond Established Views*. Carbondale: Southern Illinois University Press, pp. 239–259.
- Trice HM and Beyer JM (1993) *The Cultures of Work Organizations*. Englewood Cliffs: Prentice-Hall.
- Uhl-Bien M (2006) Relational leadership theory: exploring the social processes of leadership and organizing. *Leadership Quarterly* 17(6): 654–676.
- Ulhøi JP and Müller S (2014) Mapping the landscape of shared leadership: a review and synthesis. *International Journal of Leadership Studies* 8(2): 66–87.
- Vallgård S (2010) *Sundhedsvæsen og sundhedspolitik*. København: Munksgaard.
- Van de Walle S, van Roosbroek S and Bouckaert G (2008) Trust in the public sector: is there any evidence for long-term decline? *International Review of Administrative Sciences* 74(1): 47–64.
- Van Dyne L and Pierce JL (2004) Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behavior. *Journal of Organizational Behavior* 25(4): 439–459.
- Walumbwa FO, Wang P, Lawler JJ, et al. (2004) The role of collective efficacy in the relations between transformational leadership and work outcomes. *Journal of Occupational and Organizational Psychology* 77(4): 515–530.
- Wang G, Oh I, Courtright SH, et al. (2011) Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management* 36(2): 223–270.
- Whittington JL, Coker RH, Goodwin VL, et al. (2009) Transactional leadership revisited: self-other agreement and its consequences. *Journal of Applied Social Psychology* 39(8): 1860–1886.
- Wright TA and Cropanzano R (2004) The role of psychological well-being in job performance: a fresh look at an age-old quest. *Organizational Dynamics* 33(4): 338–351.
- Yukl G, Gordon A and Taber T (2002) A hierarchical taxonomy of leadership behavior: integrating a half century of behavior research. *Journal of Leadership and Organizational Studies* 9(1): 15–32.

Zaccaro S, Blair V, Peterson C, et al. (1995) Collective efficacy. In: Maddux J (ed.) *Self-efficacy, Adaptation and Adjustment: Theory, Research and Application*. New York: Plenum Press, pp. 305–327.

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## Appendix I

**Table 4.** Measurement of study variables.

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Agency in distributed leadership (by Jønsson et al. 2016)

1. Have you participated in setting goals for the development of your unit?
2. Have you contributed in promoting proposals about the operation and development of your unit?
3. Have you had responsibility for organizing work tasks at your unit?
4. Have you been engaged in activities that involve your colleagues in decision making about operations and development of your unit?
5. Have you been involved in managing how the resources are distributed at your unit?
6. Have you participated in organizing activities about development of competences for your colleagues?
7. Have you been involved in resolving staff conflicts in your unit?

*Transformational and transactional leadership styles (MLQ scale by Bass and Avolio, 1997)*

*Empowering leadership style (by Ahearne et al., 2005)*

Enhancing the meaningfulness of work

1. My leader helps me understand how my objectives and goals relate to that of the company.
2. My leader helps me understand the importance of my work to the overall effectiveness of the company.
3. My leader helps me understand how my job fits best into the bigger picture.

Expressing confidence in high-performance

4. My leader believes that I can handle demanding tasks.
5. My leader believes in my ability to improve even when I make mistakes.
6. My leader expresses confidence in my ability to perform at a high level.

Providing autonomy from bureaucratic constraints

7. My leader allows me to do my job my way.
8. My leader makes it more efficient for me to do my job by keeping the rules and regulations simple.
9. My leader allows me to make important decisions quickly on patients' behalf.

*Organizational efficacy (by Bohn et al. 2010)*

Collaboration

1. At Hospitalsenhed Midt, we coordinate efforts to complete difficult tasks as best as possible.
2. Employees at Hospitalsenhed Midt can work together to accomplish a goal.
3. Employees at Hospitalsenhed Midt can mobilize efforts to accomplish difficult and complex goals.
4. At Hospitalsenhed Midt, everyone works very effectively together.

Mission and future

5. Hospitalsenhed Midt has a strong vision of the future.
6. Hospitalsenhed Midt is confident about its future.
7. Hospitalsenhed Midt will continue to develop in the next 10 years.

Resilience

8. Hospitalsenhed Midt has no hope to survive a year or two. (R)
9. I would be surprised if Hospitalsenhed Midt exists in its current form in five years. (R)
10. Because Hospitalsenhed Midt is likely to fail, I would never recommend a friend to work here. (R)

Control variables

- Gender (male = 1)
  - Age (in years)
  - Organizational tenure (in years)
  - Occupational group (16 groups)
  - Hospital department (24 departments)
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