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Please cite the final published version:

Günzel-Jensen, F., Hansen, J. R., Jakobsen, M. L. F., Wulff, J. (2018). A Two-Pronged Approach? Combined Leadership Styles and Innovative Behavior. *International Journal of Public Administration*, 41(12), 957-970. DOI: 10.1080/01900692.2017.1303711

Publication metadata

Title:	A Two-Pronged Approach? Combined Leadership Styles and Innovative Behavior
Author(s):	Franziska Günzel-Jensen, Jesper Rosenberg Hansen, Mads Leth Felsager Jakobsen and Jesper Wulff
Journal:	<i>International Journal of Public Administration</i> , 41(12), 957-970
DOI/Link:	https://doi.org/10.1080/01900692.2017.1303711
Document version:	Accepted manuscript (post-print)

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A Two-Pronged Approach? Combined Leadership Styles and Innovative Behavior

Abstract

This article examines the relationship between transformational, transactional and empowering leadership and the innovative behavior of public sector employees. Instead of investigating their association individually, this article focuses on the interaction between different types of leadership. The analysis is based on a survey from one of Denmark's largest hospitals (n=1,647). The main result is that empowering leadership, which focuses on employee capacity, moderates the association between transformational leadership, which is directed at motivation, and innovative behavior. The findings emphasize the importance for scholars and practitioners of not only focusing on a single leadership style but understanding how they work in combination.

Introduction

The ability of employees to engage in innovative behavior is important for public organizations seeking to remedy challenges (Sørensen & Torfing, 2011) such as austerity, demographic developments and rising expectations through innovation and change.

Innovative behavior within the public sector has been linked to better public service quality (Salge & Vera, 2012) as well as the general ability of public organizations to respond to dynamic environments (Walker, 2008). Leadership is vital to direct public sector employees effectively – but the question is whether there is a public sector leadership style to spur innovative behavior (Leslie & Canwell, 2010) as it has been shown that there are sector differences in leadership (Hooijberg & Choi, 2001, Hansen & Villadsen, 2010).

Public discourse as well as scholarly literature point at transformational leadership based on visions and inspiration as a key tool to promote innovative behavior by increasing employee motivation to innovate, whereas transactional leadership based on contingent rewards and sanctions attached to the existing system should discourage such behavior (Bass, 1985; Rosing, Frese, & Bausch, 2011; Osborn & Marion, 2009; Zhang & Bartol, 2010) though little is known about the impact of contingent rewards and sanctions on innovation in the public sector (Jacobsen & Andersen, 2014). There has also been newer research on public leadership, however, that focuses more on building capacity at all levels of organizations (Leslie & Canwell, 2010), which is not a key aspect of transformational leadership but rather empowering leadership and which has been shown to be related to improved service delivery (Govender, *forthcoming*). Therefore, this article focuses on a question of great practical importance, but which so far has been under-researched; namely how the impact of transformational and transactional leadership on innovative behavior is affected by the simultaneous use of empowering leadership that is directed at the capacity – not the motivation – of employees.

The literature on public sector innovation has been growing in the later decades (Borins, 2014; Jaskyte, 2011; Moore & Hartley, 2008) and public administration researchers have increasingly tried to explain innovative behavior (Damanpour & Schneider, 2009; Walker, 2008). Still, studies on leadership and innovative behavior are rare within the discipline of public administration (for exceptions see Fernandez & Moldogaziev, 2013a, 2013b) though there are some related literature e.g. on change-oriented leadership (Andersen, 2010) and leadership's influence on knowledge sharing (Tuan, 2017). However, the main attention to the relationship between leadership and innovative behavior is rather given to private sector settings (Howieson & Hodges, 2014). In this general leadership literature there has been a range of studies of how transformational and transactional leadership relate to innovative behavior (see Rosing, Frese, & Bausch, 2011 for a review), but very little research exists on how they interact with other styles of leadership.

In this article it is argued that a successful attempt to induce innovative behavior by motivating employees depends on the simultaneous use of leadership practices – a two-pronged approach – promoting the employees' capacity to carry out these behaviors. Leaders must not only motivate but also empower their employees (see Pieterse, van Knippenberg, Schippers, & Stam, 2010). The article thereby follows the call from Vogel and Masal (2015) that research into public leadership ought to give more attention to the interactions between different forms of public leadership. Hence, within a public sector context, the article examines whether the impact of transformational and transactional leadership on innovative behavior is moderated by empowering leadership. The empirical analysis is based on a survey of 1,647 employees at a large Danish hospital, which is publicly owned, government funded, and hierarchically subordinated to a political authority.

Theoretical Framework

Innovative behavior is directed at finding solutions to problems through the generation, promotion, and implementation of new ideas (Scott & Bruce, 1994). Innovative behavior differs from routine behavior as it does not relate to standardized tasks but to “complicated, ill-defined problems for which novel and useful solutions are far from obvious” (Zhang & Bartol, 2010, 109). As pointed out by Osborne and Brown (2011), individual agency is a necessary (but not a sufficient) condition for organizational innovation, in which organizations adopt or develop a new “device, system, policy, program, process, product, or service” (Damanpour, 1991, 556). Innovative behavior is thus an important – but not the only – piece of the puzzle to explain public sector innovation.

By controlling critical resources, having the authority to define goals and being able to create a supportive culture, leaders have good opportunities to influence the innovative behavior of their employees (e.g. Jaskyte, 2011; Mumford & Licuanan, 2004). However, highly public organizations, which are owned and funded by the government and directly subjected to political authority (Bozeman, 1987; Rainey, 2009), provide leaders with special conditions for the exercise of leadership. These conditions include ambiguous and multiple goals as well as procedural and regulatory constraints originating from the political decision-making process (Bozeman, 1987; Rainey, 2009). The importance of these conditions for the specific styles of leadership is discussed below.

Transformational and Transactional Leadership: Motivating Innovative Behavior

Transformational leadership is one of the most influential contemporary leadership theories (Judge & Bono, 2000). Transformational leaders seek to “enable subordinates to transcend their own self-interests for the betterment of the group” (Seltzer, Numerof, & Bass, 1989,

174). It is based on values, ideals, and norms (Yukl, 1999) that are thought to inspire employees to change (Pieterse et al., 2010). In order to do this, transformational leaders have been argued to engage in certain behaviors such as (1) intellectual stimulation (i.e. challenging the status quo); (2) inspirational motivation (i.e. articulating a compelling vision of the future); (3) idealized influence (i.e. engaging in behaviors that build employee trust in and identification with their leaders); and (4) individualized consideration (i.e. attending to employees' needs and listening to their concerns) (Bass, 1985).¹

In contrast to transformational leadership, transactional leadership is based on an exchange process. The leader operates within an existing system where she attempts to satisfy the current needs of employees. She focuses on contingent rewards and sanctions and thereby pays close attention to deviations, mistakes, or irregularities and takes action to make corrections (Bass, 1985). This style of leadership appeals to the self-interest of employees (Yukl, 2013). The central behaviors are (1) contingent rewards for goal achievement and (2) management-by-exception, with monitoring and correction in case of failure (Bass, 1985).

The ability to exercise transformational and transactional leadership in public organizations has been met with some skepticism. Rainey (2009) argues that transformational leadership cannot unfold fully in such settings due to bureaucratic constraints and goal ambiguities that make it difficult to set visions for organizations. Similarly, bureaucratic constraints regulating human resource management as well as task execution could restrain otherwise transactional leaders from monitoring, rewarding, and punishing employees. This skepticism does, however, not seem warranted. Wright and Pandey (2010) have found

¹ This study relies on the widely popular conceptualization of transformational leadership according to Bass (1985) and Judge & Bono (2002) where transformational leadership is associated with inspiring followers. It needs to be stated, however, that transformational leadership can be associated with both authoritarian leadership as well as democratic leadership. While the former leads to dependence of followers on the leader, the latter relates to followers' empowerment (Kark, Shamir, & Chen, 2003).

transformational leadership to be negatively related to red tape, while Trottier, van Wart, and Wang (2008) found transformational (and transactional) leadership to be closely related to public employees' perceptions of effective leadership. And the large LEAP project is using newer conceptualization of these two leadership styles looking for their performance implications in the public sector (Jensen et al., 2016). Furthermore, Wright, Moynihan, and Pandey (2012, 207) argue that transformational leadership might be particularly useful as public organizations "have strong service- and community-oriented missions". Meta-analyses have indicated that transformational leadership also is common and effective in public organizations (e.g. Dumdum, Lowe, & Avolio, 2002; Lowe, Kroeck, & Sivasubramaniam, 1996) also for performing outside the specific task (Caillier, 2014). Even though the constraints on public organizations do not rule out an extensive execution of the two styles of leadership, it is highly relevant to consider their interplay with empowering leadership that is directed at reducing such constraints.

Transformational leadership has been argued to be specifically relevant for innovative behavior (Bass & Riggio, 2006; Tichy & Devanna, 1986). This is also consistent with the positive relationship between transformational leadership and innovative behavior found in the empirical literature (for an overview see Rosing, Frese, & Bausch, 2011). The more specific mechanisms underlying such an impact is that transformational leaders enhance their followers' innovativeness through increased motivation and intellectual stimulation (Mumford, Scott, Gaddis, & Strange, 2002), which is critical for encouraging employees to engage in generative and exploratory thinking (Sosik, Surinder, Kahai, & Avolio, 1998). Following Jung, Chow, and Wu (2003, 529), the visionary element of transformational leadership promotes more autonomous motivation (Vandenabeele 2007) by improving the understanding of goals, the creation of higher aspiration levels, and a willingness to transcend self-interests. On this basis, the following hypothesis about transformational leadership is

formulated:

H1: Transformational leadership has a positive impact on the innovative behavior of public sector employees.

Transactional leadership is similar to a cultural maintenance form of leadership (Trice & Beyer, 1993) that strengthens existing structures, strategies, and cultures in an organization. This negative view of the impact of transactional leadership on innovative behavior is also consistent with Jansen, Vera, and Crossan's (2009) finding that transactional leadership is more closely related to exploitative activities than to explorative activities, and with Fernandez and Moldogaziev's (2013a) result that rewarding and punishing employees for results discourages innovative behavior.

Theoretically, this negative view is based on the assumption that transactional leaders will reward followers for achieving certain levels of performance (Waldman, Bass, & Yammarino, 1990), but that they do not undertake active efforts to directly enhance the innovative behavior of employees (Jung, 2001). Consequently, transactional leadership would diminish extrinsic motivation for innovative behavior. A leader who promises followers a tangible reward for attaining a particular goal, prompts followers to adopt the simplest and most straightforward method to solve a problem instead of taking on the challenge of exploring alternative methods (Amabile, 1998). Contingent rewards and punishment are instead likely to result in behavior where followers take well-known paths when approaching problems. This leads to the following hypothesis about transactional leadership.

H2: Transactional leadership has a negative impact on the innovative behavior of public sector employees.

This hypothesis is based on the assumption that the leader does not explicitly reward or punish innovative behavior – but only the results achieved by the employees. However, when such direct reward of innovative behavior happens, Fernandez and Moldogaziev (2013a) have

found a positive relationship between transactional leadership and innovative behavior. Moreover, Jacobsen and Andersen (2014) also argue that the way leaders use rewards and sanctions influence its impact on innovation which is also the reason for later inclusion of interaction between different leadership styles (see hypotheses 4 and 5).

Empowering Leadership: Building Capacity

Pearce, Yoo, and Alavi (2003) have articulated an extension of the traditional transactional-transformational paradigm in the form of empowering leadership. Empowering leadership is directed at enhancing employees' ability to make independent decisions when performing their job tasks. According to Ahearne, Mathieu, and Rapp (2005), empowering leadership involves several components including (1) highlighting the significance of the work; (2) providing participation in decision-making; (3) conveying confidence in the ability to perform; and (4) removing bureaucratic constraints. It is not directly related to self-interest or to transcend self-interest but to the capacity of employees.²

There has been little research on the impact of empowering leadership on innovative behavior (Zhang & Bartol, 2010) while there is more literature on its broader impact e.g. on service delivery in public sector (Govender, *forthcoming*). However, a closely related form of leadership – participative leadership (Yukl, 2013) – has within a manufacturing setting been found to have a positive relationship with employees' innovative behavior (Axtell et al.,

² It is important to notice that even so the term empowerment has been only popularized recently, the idea behind it is not new. In psychology and management studies researchers have persistently advocated for empowerment in various forms, e.g.: Theory Y, Likert's four system styles and job enrichment theory, to name only a few (Wall, Cordery, and Clegg, 2002). Common to these approaches is that empowerment is understood as a path to enhance employee's work and thus organizational performance. Furthermore, it needs to be stated that the concept of empowerment, in some versions, includes elements of transformational leadership. It is hence not surprising that one often finds positive correlations between these leadership styles (Hartog *et al.* 1997; Judge and Piccolo 2004; Wofford, Goodwin, & Whittington, 1998), which emphasizes the importance of detangling their effects (for further considerations please see the methods section of this paper).

2000). Similarly, both Frischer (1993) and Judge, Gryxell, and Dooley (1997) have found that giving employees operational autonomy promotes an innovative culture. This is also consistent with the newest public administration research where Fernandez and Moldogaziev (2013a) found US federal employees to be more inclined to innovate when they were exposed to empowering leadership in the form of autonomy and access to knowledge.

The theoretical arguments behind such an impact is that by granting autonomy and discretion to public sector frontline workers, and by making them more competent through access to job-related knowledge, they encourage innovation by bolstering employees' competences, security, and freedom (Fernandez & Moldogaziev, 2013a). This "creates a safe climate for employees to exercise discretion in deviating from standard operating procedures or work processes" (Fernandez & Pitts, 2011, 206). Empowering leadership has also been argued to enhance employees' innovative behavior through the strengthening of individual capacities and creative process management (Spreitzer, 1995). This leads to the following hypothesis about empowering leadership:

H3: Empowering leadership has a positive impact on the innovative behavior of public sector employees.

Transformational and transactional leadership are directed at motivation, while empowering leadership is directed at capacity. Assuming innovative behavior requires a motivational driver as well as a capacity component, the impact of leadership styles directed at each of these components should affect each other.

Increasing motivation for innovative behavior through transformational practices should, for instance, lead to more innovative behavior if the employees are simultaneously helped to build their capacity to engage in such activities. It is simply more motivating to respond to a vision when you feel you have the ability to actually realize this vision. If employees experience little leadership seeking to promote independent decision-making, participative

influence, and removal of bureaucratic constraints, even a high level of transformational leadership would not lead to much innovative behavior, as employees would not have the independence to challenge established routines nor the influence or opportunity to seek new innovations institutionalized. Being encouraged to independent decision-making could furthermore be demotivating in itself, if not combined with a leadership style aimed at the development of visions to pursue.

A related but negative logic can be applied to transactional leadership. Pursuing leadership through monitoring, rewards, and punishments that reduce the motivation for innovative behavior, will be even more detrimental if employees at the same time feel able and encouraged to shape their organization. The control and evaluation on specific performance criteria are then more likely to make them see transactional leadership as unnecessarily controlling and hypocritical, which could exacerbate the negative motivational impact of transactional leadership.

There are no empirical studies directly examining how empowering leadership moderates transformational and transactional leadership. Pieterse et al. (2010) have, however, with a sample of Dutch public employees examined how psychological empowerment moderates the relationship between transformational and transactional leadership and innovative behavior. Although distinct empowerment practices are different from psychological empowerment, they are still related and empirically measured through items about competence and self-determination. Pieterse et al. (2010) find that psychological empowerment makes the positive association between transformational leadership and innovative behavior stronger, but it also makes the negative relationship between transactional leadership and innovative behavior stronger. On this basis the following hypotheses are formulated.

H4: The positive impact of transformational leadership on innovative behavior is strengthened by empowering leadership.

H5: The negative impact of transactional leadership on innovative behavior is strengthened by empowering leadership.

Methodology

Research Setting

The hypotheses are tested on data from *Hospitalsenhed Midt*, one of Denmark's largest public hospitals with about 4,500 employees. One of the key strategic goals and leadership values of the Central Jutland Region is enterprise and innovation (Region Midtjylland, 2013). The hospital unit is owned and governed by a democratically elected regional council and fully financed by taxes.

Hospitalsenhed Midt has two specific attributes relevant for the interpretation of the results. First, the hospital was established in 2011 through a horizontal merger of two neighboring hospitals. The merger was part of a large-scale cost-cutting plan within the region involving many layoffs and reallocations (Region Midtjylland, 2011). Merger situations, with changes to job functions, structure, roles, and culture, create a particular need for innovative employee behavior (Zhou, Shin, & Cannella, 2008). At the same time, such behavior becomes more difficult as many employees experience uncertainty, anxiety, and a sense of reduced control (Restubog & Rafferty, 2010; Roald & Edgren, 2001). Former studies have also shown that the more employees perceive a merger as a threat, the less creative they are (Zhou, Shin, & Cannella, 2008).

Second, most of the employees at *Hospitalsenhed Midt* belong to various health occupations. Physicians and to some degree nurses and physiotherapists are professional practitioners as they possess specialized theoretical knowledge that cannot be applied in a standardized way and strong internal norms about appropriate professional behavior. Professionalism increases the desire for developing employee practices and move beyond the

status quo (Pierce & Delbecq, 1977), which has also been demonstrated in relation to organizational innovation (Damanpour, 1991). Innovative behavior is, for instance, more widespread and intense in health care compared with public administration (Bysted & Hansen, 2015).

Data

All employees of *Hospitalsenhed Midt* received the questionnaire in late autumn 2012. In the survey, leadership relates to the nearest leadership team of the respondent, which are the section leaders for most respondents. However, for physicians the nearest leadership team is at the ward level. 2,217 questionnaires were received (response rate 48.46 percent). Yet since there were several batteries with missing answers for some items, only responses with answers on the dependent and independent variables were used. The effective response rate for this article is 36 percent.

A test for non-response bias shows that employees responding to the full questionnaire do not differ significantly from those with partial responses (age: $t=-1.8886$, $p=0.059$; marital status: $\chi^2 = 0.0966$; gender: $\chi^2 = 0.0038$). As shown in table 1, the majority of respondents were women (which is normal in the health care sector), middle-aged (the average age is 44.7) and had an average tenure of 7.5 years.

As the data is only cross-sectional, it cannot provide a hard test of the causal relationships depicted in the hypotheses. Without variation across time, the direction of causality simply cannot be determined empirically, i.e. whether innovative behavior actually follows changes in leadership and not the other way around. Still, it seems improbable that leadership, which is directed at many other factors such as results and all kinds of non-innovative behavior, should be mainly determined by the level of innovative behavior.

Furthermore, statistically controls for the most obvious sources of spuriousity that could bias the hypothesis tests were included (see below).

Measures

All measures used are former validated constructs, and all items were translated from English to Danish and back. Innovative behavior is a self-reported measure based on a construct by Janssen (2001, 2004) and Scott and Bruce (1994), which has been employed before in both the private and public sectors (e.g. Bysted & Hansen, 2015) and good validity has been reported. The measure has been shown to correlate with leader ratings of employee innovative behavior and with objective measures (of invention disclosures) (Janssen, 2004). The construct used here consists of nine items (see appendix A) and is combined by three dimensions: idea generation, idea promotion, and idea realization (Janssen, 2001). The Cronbach alphas are above the recommended levels and the confirmatory factor analysis shows a good fit (see appendix A).

To measure leadership, widely used and tested multi-dimensional scales were employed (Judge & Piccolo, 2004; Whittington et al., 2009). Transformational and transactional leadership is measured with the Multifactor Leadership Questionnaire (MLQ) Form 5X (Bass & Avolio, 1997).

Transformational leadership is traditionally a 20-item scale with four sub-dimensions. The sub-dimensions are idealized influence (sample item: “My leader talks about his/her most important values and beliefs”), inspirational motivation (sample item: “My leader articulates a compelling vision of the future”), intellectual stimulation (sample item: “My leader suggests new ways of looking at how to complete assignments”), and individualized consideration (sample item: “My leader spends time teaching and coaching”). Transactional leadership consists of two sub-dimensions: four items of contingent reward (sample item:

“My leader provides me with assistance in exchange for my efforts”) and management-by-exception (sample item: “My leader keeps track of all mistakes”).

Empowering leadership style is measured through Ahearne, Mathieu, and Rapp (2005) construct, which originally consists of four sub-dimensions: (1) enhancing the meaningfulness of work; (2) fostering participation in decision-making; (3) expressing confidence in high performance; and (4) providing autonomy from bureaucratic constraints.

Even though transformational, transactional and empowering leadership are distinct styles of leadership, previous literature has shown conceptual and empirical overlap between these three leadership styles (Hartog, Muijen, & Koopman, 1997; Jacobsen & Andersen, 2015; Judge & Piccolo, 2004; Wofford, Goodwin, & Whittington, 1998; Yukl, 2013, 316; Van Knippenberg & Sitkin, 2013). Therefore, former studies have recommended focusing on the core of the leadership styles (Jacobsen & Andersen, 2015). Following Wright, Moynihan, and Pandey (2012) the three transformational dimensions inspirational motivation, idealized influence and intellectual stimulation are used for this study. Hereby individual consideration which has been classified as a transactional and not a transformational practice is left out, because its focus on individual needs is seen as a key element of an exchange relationship (Trottier, van Wart, & Wang, 2008; Wright & Pandey, 2010). Another grey area is the dimension on enhancing the meaningfulness of work within the concept of empowering leadership, as meaningfulness also is a key element of transformational leadership (Yukl, 2013, 316). For the purpose of this article, a reduced scale of empowering leadership is therefore used where “enhancing the meaningfulness of work” is excluded which is in line with former work where meaningfulness of work is not included (see Fernandez & Moldogaziev, 2013a, 2013b).

Similar to previous studies (Hur, van den Berg, & Wilderom, 2011; Zhu, Riggio, Avolio, & Sosik, 2011), the sub-dimensions of transformational and transactional leadership have

been combined to form two additive indexes rescaled to range from 0-100, and the same has been done with empowering leadership. In appendix A, the alphas for the sub-dimensions and the fit statistics for each scale are shown. For empowering leadership an additive scale from 0-100 was constructed. Items, together with alphas and fit statistics, can be seen in appendix A. All scales have acceptable levels of model fit statistics. Furthermore, the empirical relationships between the leadership styles are analyzed by following Jensen et al. (2016). Among other things, the average variance extracted was compared to the shared variance, computed Jöreskog's rho and interfactor correlations followed by a series of confirmatory factory analyses using the reflective subscale. Overall, the analyses of the styles exhibit satisfactory discriminant validity and reliability. Details on these analyses are available in Appendix A.

The control variables are gender (women=1); age; tenure (measured as number of years employed at the current unit); management position; and the hospital ward in which respondents are employed. Since innovative behavior and susceptibility to leadership practices might vary between occupational groups, a control for these groups (e.g. physician, nurse, health assistant, physiotherapist, support staff, administrator, etc.) is also included in the analysis. Furthermore, the degree to which an employee has been affected by the merger through new tasks (which is based on the question "How has the merger affected you?" – "Have you been given new work tasks?") has been added as a control variable in the analysis.

Results

The correlations in table 1 show a relatively strong and significant, positive relationship between all three types of leadership. Employees who experience a high degree of transactional leadership are also likely to experience higher degrees of transformational and empowering leadership. The three styles are not substitutes but rather complements. Table 1

also shows strong positive correlations between transformational leadership, empowering leadership, and innovative behavior. It shows a weaker yet positive correlation between transactional leadership and innovative behavior, which contrasts with the hypothesized negative impact of transactional leadership. There are low correlations between the control variables and both innovative behavior and the three leadership styles. This indicates that these factors are not strong confounders.

TABLE 1 AROUND HERE

The multivariate regression models are shown in table 2. In all models, control for occupation type (there are 16 job categories and therefore 15 dummy variables) and wards (with dummy variables for the wards) are included, which are not reported. Furthermore, there are no problems of multi-collinearity between the main independent variables detected with all VIF < 3.0. To avoid inflated standard errors in the interaction models, the main predictors are mean centred before the analysis. For the sake of interpretation, the original scales are kept for the graphical analysis of the interaction effects in Figures 1A and 1B.

TABLE 2 AROUND HERE

Model 1 is a baseline model with only the control variables. This model explains 10.1 percent of the variation in innovative behavior. It also shows that formal leaders report both statistically and substantially significant, higher levels of innovative behavior than non-formal leaders. This could be the result of the greater autonomy, stronger competences, and stronger organizational responsibilities and motivation for organizational development of leaders vis-a-vis non-leaders. Moreover, it is also found that employees that have been directly affected by the merger at the hospital have the highest level of innovative behavior, although these employees should have experienced the strongest uncertainty. One explanation could be that being involved in the merger also provides opportunities for innovation.

Models 2 to 4 show the associations of the three leadership types separately. Model 2 shows that transformational leadership has a significant positive relationship with innovative behavior. This corresponds with Hypothesis 1, which predicted a positive relationship. Model 3 shows that transactional leadership has a significant positive relationship with innovative behavior. This contradicts Hypothesis 2, which predicted a negative relationship. Finally, Model 4 shows a significant positive relationship between empowering leadership and innovative behavior. This corresponds with Hypothesis 3, which predicted a positive relationship. Empowering leadership thus has the strongest (positive) association, while transactional leadership seems to have the weakest association and in a direction at odds with the hypothesis.

In Model 5, which includes all three leadership styles, only significant results for empowering leadership is found while transactional and transformational leadership are insignificant, when all leadership styles are included simultaneously. This indicates only support for Hypothesis 3 while Hypotheses 1 and 2 are not supported in this model.

In Model 6, there is no significant effect for the interaction between empowering and transactional leadership and therefore no support for Hypothesis 5. Figure 1B with the marginal effects of transactional leadership, however, shows that at very high levels of empowering leadership there is a weak but significant positive association between transactional leadership and innovative behavior. This contrasts with Hypothesis 3 predicting a negative association.

FIGURE 1 AROUND HERE

In Model 7, the interaction between empowering and transformational leadership is included and a positive association of this interaction term is found. This indicates a positive moderation of empowering leadership on the association between transformational leadership and innovative behavior, which supports Hypothesis 4. Figure 1A shows the marginal effects

of transformational and empowering leadership, where they jointly increase. The association of transformational leadership with innovative behavior becomes significantly negative when empowering leadership is less than approximately 40 (on a 1-100 scale), while it is positive when empowering leadership exceeds approximately 75 (on a 1-100 scale).

Discussion

What are the important findings based on this analysis? One finding is that empowering leadership is a strong predictor of innovative behavior. This corroborates the results from Fernandez and Moldogaziev's (2013a, 2013b) pioneering work in a U.S. context. It seems that helping employees to lead themselves is an important factor behind innovative behavior in the public sector. Publicness is thus compatible with innovative behavior, and empowering leadership in particular can strengthen such behavior. It may also be that empowering leadership is particularly well suited to organizations that, like many other public organizations, have a high degree of professionalism and goal ambiguity, which requires a high level of employee discretion. Still, the finding here are only based on one hospital, and the impact of empowering leadership could differ in other settings. *Hospitalsenhed Midt* is dominated by health professionals who are engaged in non-routine, long-term relationships, which makes it a quite favorable case within the public sector for empowering leadership practices.

Another interesting finding comes from the result showing that transactional leadership does not have a strong, significant negative relationship with innovative behavior. In this specific case, transactional leadership is hence not detrimental to innovative behavior as hypothesized, although it only has a very limited positive association with innovative behavior. One reason for this could be that innovative behavior is sometimes the very goal toward which transactional leadership is directed, and employees are hence rewarded and

punished for being (or not being) innovative. Such situations could make up for other situations in which transactional leadership has a negative impact by, for example, limiting creativity. Innovative behavior has indeed been a goal of the Central Jutland Region and could thus in some instances have been pursued through transactional leadership.

A broader interpretation of the lack of relationship is, however, that the very mechanism behind transactional leadership – providing in-role leadership with orders, sanctions and rewards – is not in itself something that reduces innovative behavior. Both theories and empirical studies have indicated that the effect of hierarchy, rules, and incentives on employee performance is contingent on whether rules and incentives are enabling or constraining (Adler, 2012), or whether they are perceived as supportive or controlling (Frey, 1997; Günzel-Jensen, Jain, & Kjeldsen, *forthcoming*). Problem-solving and task motivation can indeed be hindered by rules, penalties, and control, but also be supported by them. If this is the case, the one effect outweighs the other and results in no relationship in the aggregate, while there are strong conditional effects when looking at specific leaders, employees, and tasks.

A further important finding relates to the non-relationship between transformational leadership and innovative behavior when controlling for empowering leadership. This indicates that, unlike the private sector, transformational leadership might not be such a uniformly strong driver of innovative behavior in the public sector (e.g. Mumford et al., 2002; Sosik et al., 1998) unless combined with empowerment. This is especially remarkable given that *Hospitalsenhed Midt* should be a favorable case for transformational leadership due to its ongoing merger process. Other studies have found transformational leadership to be effective in the public sector, but these studies did not control for empowering leadership when testing transformational leadership. Another interpretation is that transformational leadership needs time to unfold. As this study took place only a year after a merger, which

led to numerous new team and leader-follower constellations, transformational leadership might not have been able to impact employees' innovative behavior.

While the findings for each leadership style are individually important, the most important finding in this article is the support for the hypothesis that transformational leadership together with empowering leadership has a strong positive influence on innovative behavior. It indicates the importance of investigating these leadership styles in combination. This calls for theorizing and empirical examination, within the public and private sectors, of the relative importance of value-change vis-a-vis making employees their own masters in fostering innovative behavior. In this specific case, it is not only common goals but rather that you also have freedom and ability to lead oneself that seems to matter. Without empowering leadership, transformational leadership does not have a strong association with innovative behavior. In the general leadership literature, transformational and empowering leadership styles are rarely examined together, and thus little is known about their relative importance. Future studies need to consider multiple leadership styles simultaneously as their effects may be dependent on each other.

This article has some limitations, especially in terms of establishing causal effects with a high degree of certainty. First, only self-perceived innovative behavior was examined. Even though this has been shown to correlate with actual measures of innovative behavior, future studies could benefit from using direct measures of innovative behavior. Second, only leaders with formal authority were considered. Particularly in a hospital setting, where professional knowledge and status matter greatly, this might leave out important parts of the puzzle. Future studies should aim at studying both formal and informal leaders, e.g. by investigating distributed leadership practices (see for example Günzel-Jensen, Jain, & Kjeldsen, *forthcoming*). Third, in this study both leadership variables and innovative behavior come from a common source. Though newer literature finds that the common source problem is

often overstated (Richardson, Simmering, & Sturman, 2009), the suggestion for future studies is to try to separate measures of leadership styles and innovative behavior. In spite of the fact that post hoc testing is a questionable solution (Richardson, Simmering, & Sturman, 2009), following Podsakoff and Organ (1986) Harman's one-factor test was used which did not indicate any major problems. Moreover, the key hypotheses are interaction hypothesis for which previous literature has argued that common source is of less concern as potential common source bias actually reduces potential interaction effects (Siemsen, Roth, & Oliveira, 2010). Future studies on the relationship between leadership styles and their impact (e.g. on innovative behavior) could also consider other conceptualization and operationalization of leadership styles as the traditional ones tested here have been challenged (Van Knippenberg & Sitkin, 2013, Jensen et al., 2016) and some have also argued for the need for more concepts and measures that better match public organizations (Jensen et al., *forthcoming*). Finally, future studies would also benefit from data with time separation between leadership evaluation and the reporting of innovative behavior.

Conclusion

This article has investigated whether three leadership styles affect innovative behavior among public sector employees. The analysis clearly supported the hypothesis that empowering leadership positively affects innovative behavior. Surprisingly, transactional and transformational leadership are not statistically significant related to innovative behavior when controlling for empowerment leadership. However, the results do not indicate that transformational leadership is unimportant but rather that its relationship with innovative behavior is conditional on empowerment. There is a strong, positive moderation of empowerment leadership on the relationship between transformational leadership and

innovative behavior. Transformational leadership becomes more positively related to innovative behavior the higher the level of empowerment leadership.

The main contribution of this article to the public management literature is the finding that leadership is related to innovativeness of public sector employees in ways that indicates a causal effect. Consequently, leadership should be a point of focus in future public management studies of innovation. Furthermore, the combined effect of empowering and transformational leadership is likely to be a fruitful starting point both theoretically and empirically. The relationship uncovered in this article indicates that seeking continuous change in the public sector requires both energy (motivation) but also that someone helps you to be able to pave the way (capacity). With these results, the article also provides relevant input to the more general literature on leadership styles and innovative behavior which have not examined the association of impact of transactional, transformational and empowering leadership with innovative behavior alongside each other. Finally, for practitioners the main message of the article is that they should consider using a two-pronged approach to promote innovative behavior where they combine transformational and empowerment leadership.

Acknowledgements

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Appendix A. Measurement of Variables

Innovative behavior (Janssen, 2001)

Index of a) idea generation, b) idea promotion, and c) idea realization indexes, theoretical range: 0-100, CFA for the three-factor model reports the following fit statistics: $\chi^2 (SB) = 419$, $df=24$, RMSEA = 0.100, SRMR = 0.030, CFI = 0.964.

Idea generation (Cronbach alpha = .84)

1. I am creating new ideas for improvements.
2. I am often searching out new working methods, techniques, or instruments.
3. My ideas generate original solutions to problems.

Idea promotion (Cronbach alpha = .91)

4. I mobilize support for innovative ideas.
5. I acquire approval for innovative ideas.
6. I make important organizational members enthusiastic for innovative ideas.

Idea realization (Cronbach alpha = .85)

7. I am transforming innovative ideas into useful applications.
8. I am trying to introduce innovative ideas into the work environment in a systematic way.
9. I am working actively trying to test the new ideas.

Transactional leadership styles (MLQ scale by Bass & Avolio, 1997)*

Index of a) contingent reward and b) management-by-exception indexes, theoretical range: 0-100, CFA for the two-factor model reports the following fit statistics: $\chi^2 (SB) = 389$, $df = 19$, RMSEA = 0.114, SRMR = 0.065, CFI = 0.947.

Contingent reward (sub-dimension consists of four items; Cronbach alpha .90)

Management-by-exception (sub-dimension consists of four items; Cronbach alpha .87)

Transformational leadership styles (adjusted from MLQ scale by Bass & Avolio, 1997)*

Index of a) idealized influence, b) inspirational motivation, c) intellectual stimulation and d) individualized consideration indexes, theoretical range: 0-100, CFA for the three-factor model reports the following fit statistics: $\chi^2 (SB) = 1407$, $df=101$, $RMSEA = 0,092$, $SRMR = 0,032$, $CFI = 0,940$.

Idealized influence (sub-dimension consists of eight items; Cronbach alpha .93)

Inspirational motivation (sub-dimension consists of four items; Cronbach alpha .92)

Intellectual stimulation (sub-dimension consists of four items; Cronbach alpha .90)

* The specific items for transformational and transactional leadership are not shown as they are protected by copyright, but all items can be seen in Bass & Avolio, 1997. Sample items are shown in the text describing the measures.

Empowering leadership style (adjusted from Ahearne et al. 2005)

Index of a) fostering participation in decision-making, c) expressing confidence in high performance, and d) providing autonomy from bureaucratic constraints indexes, theoretical range: 0-100, CFA for the three-factor model reports the following fit statistics: $\chi^2 (SB) = 222$, $df=24$, $RMSEA = 0,067$, $SRMR = 0,031$, $CFI = 0,976$.

Fostering participation in decision-making (Cronbach alpha = .86)

1. My leader makes many decisions together with me.
2. My leader often consults me on strategic decisions.
3. My leader solicits my opinion on decisions that may affect me.

Expressing confidence in high performance (Cronbach alpha = .87)

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 (Cronbach alpha = .75)

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.
-

Discriminant validity of leadership styles

To assess discriminant validity between the leadership styles, a table similar to one suggested by Jensen et al. (2016) is produced. The used leadership styles discriminate well as the average variance extracted for any two factors is larger than the shared variance between them. Jöreskog's rho is above the 6.0 threshold suggesting internal consistency among the leadership scales. Although interfactor correlations are moderately high, they still support discriminant characteristics of the three leadership types.

Intercorrelations and Estimates for Discriminant Validity and Reliability

	1	2	3
1. Transformational	(0.604)/(0.521)	0.382	0.150

2. Transactional	0.618***	(0.916)/(0.785)	0.398
3. Empowering	0.388***	0.631***	(0.788)/(0.553)

Note. Subdiagonal entries are correlations between latent constructs. Entries above the diagonal are the squared correlation estimates (shared variance). The first entry on the diagonal is Jöreskog's rho for reliability. The second entry in the diagonal is the average variance extracted (average of squared factor loadings) for each latent construct.

*** $p < .001$.

Finally, a series of confirmatory factor analyses for the three-factor model using the reflective subscales are performed. A model allowing for correlation between the residuals of three subscale pairs resulted in fit statistics showing an acceptable fit ($\chi^2 (SB) = 172, df = 14, RMSEA = 0.089, SRMR = 0.077, CFI = 0.977$). One caveat is that the models exhibited problems with convergence due to their complexity. Thus, to explore and compare this model to alternative model specifications, several model alternatives varying the number of factors and number of subscales included are conducted. The alternative models include a model with all subscales loading on one factor, also three different two-factor models (excluding one of the three leadership factors at a time), and different combinations of three-factor models where the full number of subscales were included (one model where one of the scales include all subscales and another model where the other scale include all subscales – and finally a model where both scales include all subscales). The model using the dimension described in this appendix outperformed all of these alternatives in terms of both traditional fit statistics (e.g. RMSEA, SRMR, CFI) and a better complexity-fit balance (AIC).

Table 1. Descriptive Statistics and Correlations

	Mean	Std.	1	2	3	4	5	6	7	8
1. Innovative Behavior	61.3	16.1								
2. Transactional	46.8	18.4	0.16*							
3. Transformational	57.2	21.0	0.26*	0.62*						
4. Empowering	63.0	16.5	0.35*	0.39*	0.63*					
5. Gender (1= male)	0.13	0.34	0.09*	0.00	-0.06*	0.00				
6. Age	44.7	10.3	0.12*	-0.11*	-0.04	0.02	0.07*			
7. Tenure	7.5	7.6	0.04	0.01	-0.01	0.06*	-0.03	0.47*		
8. Leader (1= leader)	0.18	0.39	0.27*	0.05*	0.10*	0.19*	0.21*	0.20*	0.08*	
9. Change (1= new tasks)	0.32	0.47	0.10*	0.01	-0.04	-0.03	0.02	0.10*	0.01	0.11*

Table 2. Regression models

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender	4.592** (1.417)	4.166** (1.209)	4.200** (1.325)	3.575* (1.290)	3.524** (1.248)	3.379* (1.229)	3.251* (1.213)
Age	0.076 (0.075)	0.112 (0.071)	0.129 (0.076)	0.114 (0.065)	0.130 (0.068)	0.130 (0.069)	0.126 (0.071)
Tenure	0.005 (0.079)	-0.018 (0.078)	-0.020 (0.084)	-0.046 (0.069)	-0.050 (0.072)	-0.053 (0.074)	-0.058 (0.077)
Leader	7.654*** (1.522)	6.675*** (1.528)	7.226*** (1.635)	4.930** (1.496)	5.011** (1.523)	5.022** (1.522)	4.964** (1.469)
New tasks	3.282** (0.915)	3.647*** (0.935)	3.084** (0.935)	3.763*** (0.846)	3.677*** (0.799)	3.713*** (0.795)	3.857*** (0.794)
Transformational		0.181*** (0.022)			0.017 (0.032)	0.018 (0.033)	0.028 (0.029)
Transactional			0.161*** (0.026)		0.053 (0.034)	0.048 (0.037)	0.037 (0.032)
Empowering				0.314*** (0.028)	0.278*** (0.032)	0.282*** (0.032)	0.300*** (0.035)
Empowering × Transactional						0.002 (0.001)	
Empowering × Transformational							0.005*** (0.001)
Constant	60.634*** (3.484)	57.376*** (2.858)	60.623*** (2.972)	56.372*** (3.316)	56.553*** (3.039)	56.134*** (3.000)	55.059*** (3.104)
<i>n</i>	1,178	1,178	1,178	1,178	1,178	1,178	1,178
R ²	0.136	0.182	0.165	0.223	0.227	0.229	0.240
Adj. R ²	0.104	0.150	0.133	0.193	0.196	0.197	0.208

Note: Robust standard errors clustered on wards in parentheses. Dummy variables for occupation and department included but not reported.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure 1. Marginal Effects of Leadership Styles

Figure 1A

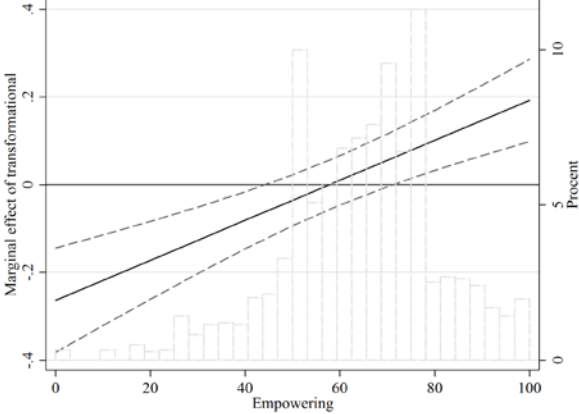


Figure 1B

