

Does Setting Goals and Incentivizing Results Matter for the Psychosocial Work Environment?

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Introduction

With the diffusion of performance management (PM), setting goals, measuring performance, and incentivizing results have become prominent management strategies to increase the efficiency in public organizations (Pollitt & Bouckhart, 2011; Van Dooren, Bouckhart, & Halligan, 2010). But PM is often controversial among the employees subjected to it. From early on Pollitt (1990) noted that it is received with resentment, suspicion, and demoralization. More recent studies, likewise, accentuate that it may be perceived as intrusive and oppressive (Sewell, Barker, & Nyberg, 2012), unjust and at disjuncture with perceived organizational and societal goals (Kick, Fraser, & Davis, 2006), and as mistrust of the professions and professionals (Fitzgerald, 2008). On the other hand, other studies find PM to be associated with positive employee's attitudes such as job satisfaction and organizational commitment (Yang & Kassekert, 2010; Yang & Pandey, 2009; Fletcher & Williams, 1996). Thus, current research point to two contradictory outcomes concerning public employees' psychological reactions. To add more knowledge about this, we examine how two important features of PM, setting goals and incentivizing results, relate to the employees' psychosocial work environment. This is important since the employees' reactions are likely to be critical for whether PM strategies will improve organizational performance or not (Harrison, Newman & Roth, 2006).

Using data from a stratified sample of 63 Danish university departments including 2,115 nested researchers, we find that setting clear organizational goals is associated with higher levels of satisfaction with the psychosocial work environment. We also find that there is a positive relationship between the use of financial rewards and satisfaction with the psychosocial work environment if there is a *fit* with the employees' extrinsic motivation structure. The use of sanctions is negatively correlated with the psychosocial work environment.

Moynihan (2009) calls for further evidence of *how*, *when* and *where* PM works (or does not work). Our article contributes to this gap in several ways. First, we examine *how* two central features of PM are related to the employees' psychosocial work environment. According to Moynihan (2009) we need documentation of a wider variety of dependent variables influenced by PM; both first-order effects, where PM through different mediating variables impact on use of performance information, and second-order effects, where PM also affect the mediating institutional mechanisms (Moynihan, 2009, p. 595). The psychosocial work environment is an important institutional mechanism since it determines both the organizational culture, the employees' general well-being at work and influences on how employees meet the demands of their work (Clausen et al., 2017, p. 17). If PM affects employees' perception of their psychosocial work environment, it may therefore be viewed as a second-order effect. Such effects are furthermore important to understand because they might help explain why PM sometimes end up in passive or even perverse use of performance information (Moynihan, 2009, p. 593).

Second, we also add to the current research by focusing on *when* PM works. Moynihan (2009) argues that it is important to reflect on a variety of variables (both individual and organizational) to determine under which conditions PM will have positive consequences in the organization. We contribute to this discussion by considering how both organizational management tools and individual motivation structures interact and thereby lead to multiple outcomes in the psychosocial work environment. Empirically, we show that employees' response to a single element (financial rewards) differentiates depending upon their individual motivational structure (extrinsic motivation). In this way, contribute to the newly established research agenda on behavioral public administration (Grimmelikhuisen et al., 2017).

Finally, we contribute to the existing literature on *where* PM works by replicating existing findings in a Danish university context and adding new findings. Second-order effects are likely to occur: “where governance mechanisms have been radically reorganized to make performance routines dominant” (Moynihan, 2009, p. 597). This is exactly the case in the Danish university sector. Different top-down driven and contract based PM practices has been widely implemented within a shorter period of time (Kristensen, Nørreklit, & Raffnsøe-Møller, 2011). Therefore, the Danish university sector is a good case to examine possible second-order effects. Furthermore, universities are characterized by highly skilled knowledge work, which makes it harder to evaluate the effort of the researchers and to quantify and measure the outcomes of their work (Alvesson, 2001). Existing research agree, that a one-size-fits-all approach to PM is problematic (Radin, 2009; Moynihan, 2009). However, most arguments in the debate concentrate on problems at the organizational level (e.g. setting up good performance indicators) (Radin, 2009). Still, individual-level explanations may also be important. We contribute to the latter by examining the *fit* between PM and the individual employees’ motivational structure. The university context provides an interesting case in this regard since university researchers have a high degree of autonomy and are assumed to be primarily driven by intrinsic motivation (Frey, 1997).

In the following section, the theoretical framework will be discussed in depth. Next, data and methods are presented. After reporting the results of our analysis, we discuss the implications of our findings.

Performance management and psychosocial work environment

“Performance management goes by many names, is defined in a variety of ways, and includes an array of concepts”, as Behn (2016, p. 5) highlights. All of these concepts, strategies, initiatives etc. has as purpose to improve the performance of public organizations by “move focus from process-oriented and rule-driven management to performance-orientated and result-driven management” (Behn 2016, p. 6). Among the essentials of the PM doctrine, several researchers highlight elements such as: goal clarity, emphasis on results rather than on inputs and procedural compliance, performance monitoring/ measurement, increased autonomy and flexibility at decentralized levels coupled with accountability for results, and incentives and possibly sanctions tied to performance results (Ammons & Roenigk, 2015; Pollit, 2013; Walker, Boyne & Brewer, 2010).

Moynihan (2009) points out, that performance information might be used in purposeful, passive or even perverse ways depending on the institutional mechanisms in which the PM tools are implemented. He discusses how PM is supposed to lead to a purposeful use of performance information through a variety of mediating variables, and defines this as the first-order effects of PM (ibid.). A key mediating variable in this sense is the employees’ overall psychological reactions to their work in term of their perception of their psychosocial work environment. Psychosocial work environment is defined as the employees’ psychological perception of (and interaction with) the characteristics of the workplace (Schbracq, Winnubst & Cooper, 2003). A central dimension in the psychosocial work environment is the employees’ reactions to their work situation (Clausen, Madsen, & Christensen et al., 2017). In this article, we focus on this dimension. If employees perceive their psychosocial work environment as overall satisfying (which means that they are overall committed to work, find meaning in their work, are satisfied with their work and are not stressed and insecure in their work) they might also be more likely to

use performance information in a purposeful way in the organization (Fletcher & Williams, 1996). However, Moynihan also point to the possibility of second-order effects, which is the situation where the PM tools will impact on the mediating variables: “*performance routines may come to dominate other routines, be drawnd out, or, more likely both mutata and influence these other routines*” (Moynihan, 2009, p. 594). We still need more knowledge of how different PM tools in this way affect the existing institutional mechanism in an organization (Moynihan, 2009, p. 601). Such knowledge is highly important because these mechanisms might cause frustration among the employees and thereby lead to passive or perverse use of performance information instead of purposeful use: “*Results-based reforms that are at odds with supportive routines or individual beliefs are likely to be met with a passive response*” (Moynihan, 2009, p. 594). Thus, to understand the fully impact of performance regimes, Moynihan argues that we need to document a wider variety of dependent variables influenced by PM (Moynihan, 2009, p. 593–594, 595, 601).

Therefore, in this article, we examine two central features of PM: 1) goal clarity and 2) the incentivizing of results (the use of rewards and sanctions tied to performance results) and the relationship with the employees’ psychosocial work environment.

We thereby contribute to the discussions of possible second-order effects of PM. We do not examine the effect over time; instead we try to disentangle some of the more complex mechanisms leading to a specific second-order effect in a radically reorganized management regime at the Danish universities. Moynihan argues that “*performance routines are influenced by and influences, both other institutions and individual preferences in an ongoing dynamic*” (Moynihan, 2009, p. 594). We focus on both organizational factors (goal clarity and the use of

incentives) and individual factors (the individual employees' motivation structure) and their interactions.

Below, we will clarify our expectations about the relationships between clear goals and incentivizing results and the psychosocial work environment.

Clear goals

According to *goal setting theory* (Locke & Latham, 1990), effective goal setting can impact on employees' psychological reactions and, in turn, individual and organizational performance (Locke, 2004). Goals that are specific, reasonably difficult, perceived as important and unambiguous will motivate and infuse meaning among employees and make it easier for them to assess the amount and type of effort necessary to achieve the objectives (Latham, Borgogni, & Pettita, 2008; Locke & Latham, 2002).

A large number of studies support that the specificity of organizational goals is important for employees' motivation, organizational commitment, job satisfaction and performance (Chun & Rainey, 2005; Jung, 2011; Jung, 2014a; Jung 2014b; Rainey & Rhu, 2004; Wright, 2004; Wright, 2007). Clear goals, also, facilitate the development of shared schemas about the organization and its mission, heighten the employees' organizational identification and commitment and, thus, entail stronger support for other organizational members and the organization (Eccles & Nohria, 1992; Haslam et al., 2011; Weiss & Piderit, 1999). Hence, setting clear organizational goal can be expected to have a positive impact on the employees' psychosocial work environment:

H1: Setting clear organizational goals is positively correlated with employees' satisfaction with the psychosocial work environment.

Incentivizing of results

The basic concepts underlying the use of financial rewards are that employees will perform better when their compensation is more tightly linked to their effort or outputs and that organizational performance will improve with employee incentives more closely aligned with organizational goals (Heinrich & Marschke, 2010).

A dominant model (the effort-reward-imbalance model) within the psychosocial work environment research points out that rewards are highly important for employees' psychosocial work environment. If employees perceive a balance between their effort and the organizational rewards, it will increase their commitment and well-being, while it will increase their stress, on the other hand, if they do not experience to be rewarded for their efforts (Siegrist, 1996). We, therefore, hypothesize that:

H2: The use of financial rewards is positively correlated with employees' satisfaction with the psychosocial work environment.

While pay is an important general motivator, employees, at different margins, have different preferences about the relative value of money to the value of the job (Langbein, 2010). When discussing the use of financial incentives in PM, Boyne (2010, p. 216) proposes that “the impact of monetary rewards is moderated by [the employees'] service motivation”. Congruence between the employees' motives and the incentives given by the organization has long been highlighted as important (Knoke & Wright-Isak, 1982). The core psychological process underlying employees' experience of a match (or mismatch) is their cognitive comparison of the perceived and desired type and amount of rewards experienced (Edwards, 1998). Employees'

will experience more positive job attitudes when their needs are satisfied (Kristof-Brown, Zimmerman, & Johnson, 2005, p. 288).

A large number of studies within organizational psychology have demonstrated how a congruence or *fit* between a person's needs and values and the organizational "supplies" available to fulfill these are important for employees' affective responses and performance (see Hoffman & Woehr, 2006; Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005; Verquer, Beehr, & Wagner, 2003). Moreover, a number of studies within public administration drawing on insights from this literature have shown that the fit between the public sector employees' motives and the organizational work context affect affective attitudes such as job satisfaction, organizational commitment, organizational citizen behavior and turnover intentions (Bright, 2008; Gould-Williams, Mostafa, & Bottomley, 2013; Pandey, Wright, & Moynihan, 2008; Steijn, 2008; Taylor, 2008; Wright & Pandey, 2008;). However, these studies all focus on the concept of public service motivation (see for example Perry, Hondeghem, & Wise, 2009). In this study, we focus on the distinction between intrinsic and extrinsic motivation, since it gives a clear-cut distinction between instrumental and non-instrumental motives (Frey, Homberg, & Osterloh, 2013). According to Deci (1971, p. 105), "one is said to be intrinsically motivated to perform an activity when one receives no apparent reward except the activity itself". In contrast, extrinsic motivation originates not from the activity itself but rather from the extrinsic consequences to which the activity leads (Gagné & Deci, 2005, p. 331).

Financial rewards are by definition an extrinsic motivator. Hence, an organizational "supply" of this type of incentives is more likely to match the motives of more extrinsically motivated employees and, thus, be positively related to the satisfaction with the psychosocial work environment within this group. This leads us to propose the following hypothesis:

H3: The use of financial rewards is positively correlated with employees' satisfaction with the psychosocial work environment, the more extrinsically motivated the targeted employee is.

It is, on the other hand, more unclear how intrinsically motivated employees are likely to react. Use of financial rewards may be perceived by this group to signal organizational values that are at odds with their work motives. But it may also be that they simply find financial rewards to be unimportant. For this reason, we do not hypothesize about how intrinsic motivation may influence on the relationship between an organizational “supply” of financial incentives and employees' satisfaction with the psychosocial work environment.

Another kind of incentives widely debated with regard to PM is the use of sanctions for failure to meet performance expectations (Boyne, 2010, p. 215). Command systems, which are based on the threat of sanctions, are used in many public organizations (Jacobsen & Andersen, 2014). However, studies have shown that when sanctions are included in the incentive structure, PM is likely to be perceived as a direct form of control from the management and thereby also a noticeable reduction of the employees' autonomy and professional discretion (Leithwood, Steinbach, & Jantzi, 2002; Pihl-Thingvad, 2016; Soss Fording & Schram, 2011). Autonomy is a defining character of professional knowledge work (Alvesson, 2004), and a highly important factor in a good psychosocial work environment (Häusser et al., 2010; Karaseks, 1990; Van Doef & Maes, 1999). If sanctions are associated with the reduction of autonomy and perceived as a challenge to the employees' sense of professionalism, it is not surprising that sanctions reduce the employees' satisfaction with their psychosocial work environment. We, therefore, propose the following hypothesis:

H4: Using sanctions is negatively correlated with employees' satisfaction with the psychosocial work environment.

Design and data

We test our hypotheses in a study of 63 Danish university departments and their nested researchers. The governance principles have changed drastically over the recent years at Danish universities. As a result, the management structure and the resource allocation have changed and a number of PM principles have been introduced (Kristensen, Nørreklit, & Raffnsøe-Møller, 2011). All Danish universities are public self-governing institutions run by a board with a majority of external members. The internal management structure is a traditional, hierarchical top-down system (Hansen, 2011). However, within the universities, there are still significant variations in how university departments have embraced PM (Jacobsen & Andersen, 2014) and especially to what extent they use incentives to manage research performance (Andersen & Pallesen, 2008; Opstrup, 2017). This makes for an excellent case to test the proposed hypotheses since there is sufficient variation on key organizational-level explanatory variables (Stoker & Bowers, 2002).

When the study was initiated, there was a total of 179 Danish university departments divided between 32 faculties at eight universities. We randomly selected 66 departments, stratified by faculty; thereby securing an approximate proportional distribution of all Danish universities and all main areas of research in our sample. Minimum two departments were drawn from each faculty¹.

¹ The small university, IT University of Copenhagen, was excluded because it is organized as a single department employing only 63 researchers at the time. Moreover, it was not possible to categorize the use of individual financial incentives to publish for three of the 66 departments in the sample. Consequently, making these three departments drop out of the analysis.

In January 1984 researchers (including PhD students) at the selected departments were asked to fill out an online questionnaire focusing on publication strategies, research behavior, motivation, incentives, organization and leadership, job situation etc. The overall response rate was 53.3 % equaling 2656 respondents. In addition, the Heads of Department were interviewed during the winter 2010-11. From these interviews, specific questions were afterwards coded and quantified (cf. below).

Measurement

The dependent variable, satisfaction with the psychosocial work environment, is measured by a single-item measure: *“Concerning your job in general, how satisfied are you with your psychosocial work environment? By psychosocial work environment, we mean, for example, the social climate, relations with management, demands on your work, your work time, your influence on your work, etc.”* Response categories ranged from “very dissatisfied” to “very satisfied” on a five-point ordinal scale.

The measure is taken from the Copenhagen Psychosocial Questionnaire (COPSOQ), a questionnaire which is highly recognized within international psychosocial work environment research (see for example <https://www.copsoq-network.org>) and has been validated several times. The question is used as a global measure of employees’ perception of their psychosocial work environment. We have chosen it due to the high number of validity and reliability tests made through the years; latest in 2017 (Bjørner & Pejtersen, 2010; Burr, Albertsen, Rugulies, & Hannerz, 2010; Clausen et al., 2017; Kristensen, Hannerz, Høgh, & Borg, 2005; Pejtersen, Kristensen, Borg, & Bjørner, 2010; Rugulies, Aust, & Pejtersen, 2010; Thorsen & Bjørner, 2010). The item has been shown to correlate with all dimensions included in the category “employees’ reactions to their psychosocial work environment” in the expected directions

(Clausen et al., 2017, p. 267). Furthermore, the item is also validated in comparison with a broader range of questions and indexes in the psychosocial work environment literature and all existing test of the item support that this item is a good proxy measure for the employees' psychosocial work environment (ibid.).

Independent variables: We measure the degree to which management formulates clear organizational goals through survey answers from the organizational members. More specifically, we use the aggregated department means of the question: “*The department has clear goals and a strategy for how to reach those goals*”. Response categories ranged from “strongly agree” to “strongly disagree”. The resulting measure reveals that it is somewhat ambiguous to which degree departments set clear organizational goals. On a scale from 0 to 100, the mean score is 52.4 and the standard deviation is 10.9 (see Table 1).

The use of rewards was scored on the basis of the department heads' answers to specific questions in the qualitative interviews about their use of individual financial incentives in connection to research publication. Each department was categorized as having, “very strong financial incentives for researchers to publish”, “strong incentives”, “some incentives”, “little incentives” or “no incentives”. Two departments have very strong incentives, 19 departments have strong incentives, 21 have some incentives, 12 weak incentives and 9 departments have no incentives².

To measure the *fit* between financial rewards and extrinsic motivation, we apply an interaction-term. The measurement of the researchers' motivational structure is based on the initial question: “*If you consider the ideal job, how important do you find the following*

² It was not possible to categorize the use of financial incentives for three of the 66 departments in the sample. Two Heads of Department abstained from being interviewed and in one interview the relevant questions were not asked due to time constraints.

attributes?” Eight different job attributes were mentioned with five response categories: “very important”, “important”, “less important”, “unimportant”, and “very unimportant”. The researchers’ answers load on two factors and was used to calculate two indices of respectively “intrinsic” and “extrinsic” motivation (see appendix A). The index for extrinsic motivation is based on the items “a high salary and material benefits”, “financial rewards for high-quality research” and “good career opportunities” and has a Cronbach’s Alpha-score of 0.722 and accounts for 31.65 percent of the total variance in eight items.

Finally, the use of sanctions is measured by the department’s mean score to the question “*Researchers who do not publish enough have their research time reduced and are instead allocated additional tasks within teaching and administration*”. Here, options ranged from “not at all” to “to a very high degree”. In general, this type of sanction is not widely used at Danish university departments. On a scale from 0 to 100, the mean score is 23.9. However, there is some variation between departments. The standard deviation equals 15.6 (see Table 1).

Control variables: In order to better isolate the relationship between PM and the satisfaction with the psychosocial work environment, we include a number of control variables in our analysis: age, gender, position, main field of research, average weekly working hours, percentage of time used on research, and the perceived supportiveness of management (as a aggregated department mean). Table 1 provides descriptive statistics for all the included variables.

Insert table 1 around here

In our analysis, we apply multilevel mixed-effects ordered logistic regression since 1) our dependent variable is a five-point ordinal scale (cf. above) and 2) our data structure is hierarchical (we study researchers who are *nested* within departments with a specific use of PM). We apply a random intercept model, thus making it possible to assess the relationship between departmental features (goal setting and incentivizing of results) and the individual researchers' satisfaction with the psychosocial work environment. In the subsequent analysis, survey responses are used both at the individual level and aggregated to departmental measures.

To test for the problem of multicollinearity, we calculated Variance Inflation Factors (VIF). VIF scores are generally low (mean VIF=1.76) indicating that multicollinearity should not be a threat to our results. Since most of our measures come from the same source, there is moreover a risk of problems with common method bias (Favaro & Bullock, 2015; George & Pandey, 2017; Meier & O'Toole, 2013). This is a potential threat to the analysis of H1 and H4. It is, however, less problematic with regard to the analysis of H2 and H3 for two reasons. Firstly, the measure of the departments' use of financial rewards does not stem from the survey but from the qualitative interviews with Heads of Department. Secondly, common method variance is found not to inflate interaction effects (Jacobsen & Jensen, 2015).

Results

Danish university researchers are on average quite satisfied with the psychosocial work environment at their department. Only three percent is "very unsatisfied", 12 percent is "unsatisfied", 19 percent is "neither satisfied or unsatisfied", 49 percent are "satisfied" and 18 percent is "very satisfied". There are some interesting variations between subgroups, however. Female researchers are on average less satisfied than their male colleagues, full professors are typically more satisfied than those at lower career levels, and researchers within the humanities

are on average less satisfied than their colleagues within the social-, natural/technical-, and health sciences (see table 2). Furthermore, working hours and job composition is important. The more hours the researchers work pr. week, the less satisfied they are on average with the psychosocial work environment. However, the higher the percentage of time they use on research, the more satisfied they on average are with the psychosocial work environment.

In order to test our hypothesis about the relationship between PM and the psychosocial work environment, we estimate three multilevel regression models. The results of these are presented in table 2 below. Models 1 only enter the independent variables; model 2 includes the control variable, and model 3 adds the interaction effects between the use of financial rewards/sanctions and the individual researcher's motivational structure.

Insert table 2 around here

In both model 1 and 2, setting clear organizational goals is associated with a higher satisfaction with the psychosocial work environment. Thus, giving support to hypothesis 1. There is no direct relationship between the department's use of financial rewards and the researchers' satisfaction with the psychosocial work environment. Thereby, we find no support for hypothesis 2. There is, on the other hand, a significant association between the use of sanctions and the level of satisfaction with the psychosocial work environment; the more the department uses sanctions, the less satisfied the researchers on average are with the psychosocial work environment. This lends support to hypothesis 4.

In model 3, our last independent variable is added to the analysis: the interaction between the departments' use of financial rewards and the individual researcher's level of extrinsic

motivation. As expected in hypothesis 3, the researchers' motivational structure is important for the relationship between the use of financial rewards and the psychosocial work environment. The stronger use the department has of financial rewards and the higher the individual researcher's extrinsic motivation is, the more satisfied he or she on average are with the psychosocial work environment. On the other hand, the researcher's intrinsic motivation does not moderate the relationship between the department use of financial rewards and his or her satisfaction with the psychosocial work environment.

Discussion and conclusion

The intention of PM is to increase performance; which is a continuing issue for most modern organizations. Our study provides new information by investigating how key elements of PM, setting goals and incentivizing results, are associated with the psychosocial work environment within the setting of Danish universities.

In line with a range of studies which find that organizational goals promote positive affective reactions among employees, we find that setting goals is associated with higher satisfaction with the overall psychosocial work environment. As explained above, organizational goals are said to develop shared understandings of the organization and its mission and heighten the employees' organizational identification. This is especially important in the type of knowledge work conducted at the universities. According to Alvesson (2001, p. 869), knowledge work is characterized by a persistent uncertainty and high degree of ambiguity which also makes it very difficult to evaluate the work and determine what defines a good (or even adequate) effort. This ambiguity, inherent in knowledge work, places high demands on the employees to continuously provide convincing accounts of their work to secure their legitimacy, status and identity in the organization. As Alvesson (2001, p. 877) highlights, can demands be mentally

challenging: “many knowledge-intensive workers must struggle more for the accomplishment, maintenance and gradual change of self-identity, compared to workers whose competence and results are more materially grounded. [...] people in knowledge-intensive companies are thus vulnerable to frustrations contingent upon ambiguity of performance and confirmation.” Seen from this perspective, clearly stated organizational goals can be a bastion against perceptions of ambiguity in the researchers’ daily work at the universities and thereby help the employees accomplish and sustain a growing feeling of self-esteem. However, this positive influence of clear goals on the researchers psychosocial work environment may depend on whether the individual researchers consider the goals as meaningful and important and whether the researchers have been involved in the process of setting the goals. Our data does not allow us to analyze these aspects of goal setting but future studies should look into how different implementations of setting goals might impact on employees’ reactions to this management tool.

We also analyzed the relationship between the use of financial rewards and sanctions and the researchers’ psychosocial work environment. No direct relationship was found between the use of financial rewards and the researchers’ satisfaction with their psychosocial work environment. University researchers are assumed to be predominantly intrinsically motivated (which our data also show (cf. Table 1)). This might explain why we did not find a direct relationship between financial rewards and satisfaction with the psychosocial work environment. A meta-study of pay-for-performance schemes’ benefits and (hidden) costs in the public sector concludes that financial rewards are most likely to be successful in areas of public service where intrinsic motivation plays less of a role in the employees’ motives for work (Weibel, Rost, & Osterloh, 2010). It suggests that even though financial rewards are a key element in PM it may not function equally well in every work context.

However, when there is a *fit* with the individual employees' motivational structure, the results suggest a positive relationship between the use of financial rewards and satisfaction with the psychosocial work environment; financial rewards are on average associated with higher satisfaction, the more extrinsically motivated the individual researcher is. On the other hand, the level of intrinsic motivation does not seem of importance.

These psychological mechanisms on the individual level may be important for many of the potential unintended consequences related to PM that a growing research have identified (see for example Pihl-Thingvad, 2016; Koning & Heinrich, 2013; Heinrich & Marschke, 2010; van Thiel & Leuw, 2002) and, hence, the actual performance. Of course, we cannot conclude whether the financial rewards improve performance or not based on our study. But as shown by Andersen and Pallesen (2008), the use of financial rewards may affect the number of scientific articles produced differently depending on the employees' perception of the reward system.

Contrary to what was the case with financial rewards, we found a direct negative association between using sanctions and the researchers' satisfaction level. Sanctions, thus, seem to function differently than financial rewards in this respect. The results resonate well with insights from experimental research which highlight that people generally are more sensitive toward losses than gains (Bregm, 2010). As Behn (2016) points out one of the psychological barriers to PM, is that "public-employee thinking focuses on avoiding mistakes that will produce certain punishment rather than producing successes that might generate a little praise" (2016, p. 12). It also resonates with studies showing that negative outcomes from sanctions (increased stress and effort) outweigh the more positive outcomes, such as personal satisfaction from meeting the goals (Finnigan & Gross, 2007; Keley Heneman, & Milanowski, 2002). Therefore, our results suggest that sanctions should not only be understood as the negative counterpart to

rewards. It is important to differentiate between the use of rewards and sanctions to get a better understanding the psychological reactions to PM at the individual level. Future studies could benefit from disentangling these psychological mechanisms and investigating how they function in different work contexts and how they might affect performance.

Many management reforms in the public sector flow from a one-size-fits-all approach to PM. Radin (2009, p. 39) has argued that the one-size-fits-all approach is the reason why these reforms often fail to increase effectiveness in the public sector and instead cause a range of unintended consequences which impair the quality of the services. Radin primarily argues on an organizational level and problematize how the public sector continually models itself on private sector management ideals without taking into account the different interests and values on which our modern democracy is built (ibid.). In addition, our results suggest that it is also problematic to impose PM reforms from a one-size-fits-all approach with regard to the individual level. Overall, our results suggest that employees' reactions should neither be taken for granted or assumed universal. Rather, the employees' reactions to financial rewards are likely to depend on the type of work performed (Weibel, Rost, & Osterloh, 2010) and the employees' individual motivational structure.

There are of course limitations to this study that need to be taken serious when interpreting the results. First of all, the study's cross-sectional design prevents us from determining the causal direction between elements of PM and the researchers' perception of their psychosocial work environment with any certainty. Therefore, the current conclusions could benefit from longitudinal studies to develop a more comprehensive understanding of the complex causal relation between the different elements in PM and the employees' perception of their psychosocial work environment.

Furthermore, some of our measures of PM practices are single-items. It would have been preferable with multidimensional measures that would provide more reliable measures of goal setting and sanctions. For example are other important aspects of goals not included such as whether these are “high” or “challenging”, whether individual researchers consider the goals as meaningful and important, or to which extent they been involved in the process of defining the goals (see Latham, Borgogni, & Petitta, 2008). Likewise, the measure of sanctions focuses only on one way of disciplining the university researchers. Furthermore, only the measure of financial rewards is based on a different source than the measure of the dependent variable. More exogenous measures of goal setting and the departments’ use of sanctions would have been preferable as well.

Finally, even though this study points to broader theoretical and practical implications in the discussion, the study reflects a particular regional reality at Danish universities and the specific results should therefore only be directly generalized to other contexts with great caution. To expand further on our understanding of how PM functions as a management strategy at the individual level, the next step would be to compare the results from this study to similar studies in other countries and other professions.

References

- Alvesson, M. (2001). Knowledge work: Ambiguity, image and Identity. *Human Relations*, 54(7), 863–886.
- Alvesson, M. (2004). *Knowledge work and knowledge intensive firms*. Oxford: Oxford University Press.
- Ammons, D. N., & Roenigk, D. J. (2015). Performance Management in Local Government: Is Practice Influenced by Doctrine? *Public Performance & Management*, 38(3), 514–541.
- Andersen, L. B., & Pallesen, T. (2008). Not Just for the Money? How Financial Incentives Affect the Number of Publications at Danish Research Institutions. *International Public Management Journal*, 11(1), 28–47.
- Behn, R. D. (2016). The Psychological Barriers to Performance Management. Or Why Isn't Everyone Jumping on the Performance-Management Bandwagon. *Public Performance & Management Review*, 26(1), 5–25.
- Bjørner, J., & Pejtersen J. H. (2010). Evaluating construct validity of the second version of the Copenhagen Psychosocial Questionnaire through analysis of differential item functioning and differential item effect. *Scandinavian Journal of Public Health*, 38(3), 90–105.
- Boyne, G. A. (2010). Performance Management: does it work? In R. M. Walker, G. A. Boyne & G. A. Brewer (Eds.), *Public Management and Performance. Research Directions* (pp. 207–226). Cambridge: Cambridge University Press.
- Bregn, K. (2008). Management of the new pay systems in the public sector – some implications of insights gained from experiments. *International Review of Administrative Science*, 74(1), 79–93.
- Bright, L. (2008). Does Public Service Motivation Really Make a Difference on the Job Satisfaction and Turnover Intentions of Public Employees? *The American Review of Public Administration*, 38(2), 149–166.
- Burr, H., Albertsen, K., Rugulies, R., & Hannerz, H. (2010). Do dimensions from the Copenhagen Psychosocial Questionnaire predict vitality and mental health over and above the job-strain and effort reward imbalance models? *Scandinavian Journal of Public Health*, 38(3), 59–68
- Chun, Y. H., & Rainey, H. G. (2005). Goal ambiguity and organizational performance in U.S. federal agencies. *Journal of Public Administration Research and Theory*, 15(4), 529–557.
- Clausen, T, Madsen, I. E. H., Christensen, K. B., Bjørner, J. B., Poulsen O. M., Maltesen, T., ... Rugulies, R. (2017). *Dansk Psykosocialt Spørgeskema. Et spørgeskema om psykosocialt arbejdsmiljø: Dokumentationsrapport*. København: Det Nationale Forskningscenter for Arbejdsmiljø.

- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18(1), 105–115.
- Eccles, R. G., & Nohria, N. (1992). *Beyond the hype: Rediscovering the essence of management*. Boston, MA: Harvard Business School Press.
- Edwards, J. R. (1998). An Examination of Competing Versions of the Person-Environment Fit Approach to Stress. *Academy of Management Journal*, 39(2), 292–339.
- Favero, N., & Bullock, J. (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.
- Finnigan, K. S., & Gross, B. (2007). Do Accountability Policy Sanctions Influence Teacher Motivation? Lessons From Chicago's Low-Performing Schools. *American Educational Research Journal*, 44(3), 594–629.
- Fitzgerald, T. (2008). The continuing politics of mistrust: performance management and the erosion of professional work. *Journal of Educational Administration and History*, 40(2), 113–128.
- Fletcher, C., & Williams R. (1996). Performance Management, Job Satisfaction and Organizational Commitment. *British Journal of Management*, 7(2), 169–179.
- Frey, B. S. (1997). *Not Just for the Money. An Economic Theory of Personal Motivation*. Cheltenham: Edward Elgar Press.
- Frey, B. S., Homberg, F., & Osterloh, M. (2013). Organizational Control Systems and Pay-for-Performance in the Public Service. *Organizational Studies*, 34(7), 949–972.
- Gagné, M., & Deci, E. L. (2005). Self-determination Theory and Work Motivation. *Journal of Organizational Behavior*, 26(4), 331–362.
- George, B., & Pandey, S. K. (2017). We Know the Yin—But Where Is the Yang? Toward a Balanced Approach on Common Source Bias in Public Administration Scholarship. *Review of Public Personnel Administration*, 37(2), 245–270.
- Gould-Williams, J. S., Mostafa, A. M. S., & Bottomley, P. (2013) Public Service Motivation and Employee Outcomes in the Egyptian Public Sector: Testing the Mediating Effect of Person-Organization Fit. *Journal of Public Administration Research and Theory*, 25(2), 597–622.
- Grimmelikhuijsen, S., Jilke, S., Olsen, A. L., & Tummers, L. (2017). Behavioral Public Administration: Combining Insights from Public Administration and Psychology. *Public Administration Review*, 77(1), 45–56.
- Hansen, H. F. (2011). University Reforms in Denmark and the Challenges for Political Science. *European Political Science*, 10, 235–247.

- Harrison, D. A., Newman, D., & Roth P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49(2), 305–325.
- Haslam, A. S., Reicher, S. D., & Platow, M. J. (2011). *The New Psychology of Leadership. Identity, Influence and Power*. New York: Psychology Press, Taylor & Francis Group.
- Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the Job Demand-Control (-Support) model and psychological well-being. *Work & Stress: An International Journal of Work, Health & Organisations*, 24(1), 1–35.
- Heinrich, C. J., & Marschke, G. (2010). Incentives and Their Dynamics in Public Sector Performance Management Systems. *Journal of Policy Analysis and Management*, 29(1), 183–208.
- Hoffman, B. J., & Woehr, D. J. (2006). A Quantitative Review of the Relationship Between Person-Organization Fit and Behavioral Outcomes. *Journal of Vocational Behavior*, 68(3), 389–399.
- Hox, J. J. (2010). *Multilevel Analysis. Techniques and Applications* (2nd ed.). Quantitative Methodology Series. New York: Routledge
- Jacobsen, C. B., & Andersen, L. B. (2014). Performance Management for Academic Researchers: How Publication Command Systems Affect Individual Behavior. *Review of Public Personnel Administration*, 34(2), 84–107.
- Jakobsen, M., & Jensen, R. (2015). Common Method Bias in Public Management Studies. *International Public Management Journal*, 18(1), 3–30.
- Jung, C. S. (2011). Organization Goal Ambiguity and Performance: Conceptualization, Measurement and Relationships. *International Public Management Journal*, 14(2), 193–217.
- Jung, C. S. (2014a). Organizational Goal Ambiguity and Job Satisfaction in the Public Sector. *Journal of Public Administration Research and Theory*, 24(4), 955–981.
- Jung, C. S. (2014b). Why Are Goals Important in the Public Sector? Exploring the Benefits of Goal Clarity for Reducing Turnover Intention. *Journal of Public Administration Research and Theory*, 24(1), 209–234.
- Karasek, R., & Theorell, T. (1990). *Healthy work: stress, productivity and the reconstruction of working life*. New York: Basic Books.
- Kelley, C., Heneman, H., III, & Milanowski, A. (2002). Teacher motivation and school-based performance awards. *Educational Administrative Quarterly*, 39(5), 603–634.
- Kick, E. L., Fraser J. C., & Davis, B. L. (2006). Performance Management, Managerial Citizenship and Worker Commitment: A Study of the United States Postal Service

- with Some Global Implications. *Economic and Industrial Democracy*, 27(1), 137–172.
- Knoke, D., & Wright-Isak, C. (1982). Individual Motives and Organizational Incentive Systems. *Research in the Sociology of Organizations*, 1(2), 209–254.
- Koning, P., & Heinrich, C. J. (2013). Cream-Skimming, Parking and Other Intended and Unintended Effects of High-Powered, Performance-Based Contracts. *Journal of Policy Analysis and Management*, 32(3), 461–483.
- Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire – a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment and Health*, 31(6), 438–449.
- Kristensen, J. E., Nørreklit, H., & Raffnsøe-Møller, M. (2011). University Performance Management at Danish Universities. In J. E. Kristensen, H. Nørreklit & M. Raffnsøe-Møller (Eds.), *University Performance Management. The Silent Managerial Revolution at Danish Universities* (pp. 7–18). Copenhagen: DJØF Publishing.
- Kristof, A. L. (1996). Person-Organizational Fit: An Integrative Review of its Conceptualizations, Measurement and Implications. *Personnel Psychology*, 49(1), 1–49.
- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of Individuals' Fit at Work: A Meta-Analysis of Person-Job, Person-Organization, Person-Group, and Person-Supervisor Fit. *Personnel Psychology*, 58(2), 281–342.
- Langbein, L. (2010). Economics, Public Service Motivation and Pay for Performance: Complements or Substitutes? *International Public Management Journal*, 13(1), 1–15.
- Latham, G. P., Borgogni, L., & Petitta, L. (2008). Goal Setting and Performance Management in the Public Sector. *International Public Management Journal*, 11(4), 385–403.
- Leithwood, K., Steinbach, R., & Jantzi, D. (2002). School leadership and teachers' Motivation to Implement Accountability Policies. *Educational Administrative Quarterly*, 38(1), 94–119.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705–719.
- Meier, K. J., & O'Toole, L. J. (2013). Subjective Organizational Performance and Measurement Error: Common Source Bias and Spurious Relationships. *Journal of Public Administration Research and Theory*, 23(2), 429–456.

- Moynihan, D. P. (2009). Through A Glass, Darkly. *Public Performance & Management*, 32(4), 592–603.
- Opstrup, N. (2017). When and why do university managers use publication incentive payments? *Journal of Higher Education Policy and Management*, 39(5), 524–539.
- Pandey, S. K., Wright, B. E., & Moynihan, D. P. (2008). Public service motivation and interpersonal citizenship behavior: Testing a preliminary model. *International Public Management Journal*, 11(1), 89–108.
- Pejtersen, J. H., Kristensen, T. S., Borg, V., & Bjørner, J. B. (2010). The second version of Copenhagen Psychosocial Questionnaire (COPSOQ-II). *Scandinavian Journal of Public Health*, 38(3), 8–24.
- Perry, J. L., Hondeghem, A., & Wise, L. R. (2009). Revisiting the Motivational Bases of Public Service: Twenty Years of Research and an Agenda for the Future. *Public Administration Review*, 70(5), 681–690.
- Pihl-Thingvad, S. (2016). The Inner Workings of Performance Management in Danish Job Centers: Rational Decisions or Cowboy Solutions? *Public Performance and Management*, 40(1), 48–70.
- Pollitt, C. (1990). *Managerialism and Public Service. The Anglo-American Experience*. Oxford: Basil Blackwell.
- Pollitt, C. (2013). The logics of Performance Management. *Evaluation*, 19(4), 346–363.
- Pollitt, C., & Bouckaert, G. (2011). *Public Management Reform: A Comparative Analysis* (3rd ed.). Oxford: Oxford University Press.
- Radin, B. (2009). *Challenging the Performance Movement Accountability, Complexity, and Democratic Values*. Washington DC: Georgetown University Press.
- Rainey, H. G., & Ryu, J. E. (2004). Framing high performance and innovativeness in government. In P. W. Ingraham & L. E. Lynn (Eds.), *The art of governance: Analyzing management and administration* (pp. 20–45). Washington, DC: Georgetown University Press.
- Rugulies, R., Aust, B., & Pejtersen, J. H. (2010). Do psychosocial work environment factors measured with scales from the Copenhagen Psychosocial Questionnaire predict register-based sickness absence of 3 weeks or more in Denmark? *Scandinavian Journal of Public Health*, 38 (3), 42–51
- Schbracq, M., Winnubst, J. A. M., & Cooper, C. L. (2003). *The Handbook of Work & Health Psychology* (2nd ed.). Chichester: John Wiley & Sons.
- Sewell, G., Barker, J. R., & Nyberg, D. (2012). Working under intensive surveillance: When does measuring everything that moves' become intolerable? *Human Relations*, 65(2), 189–215.

- Siegrist, J. (1996). Adverse Health Effects of High-Effort/Low-Reward Conditions. *Journal of Occupational Health Psychology*, 1(1), 27–41.
- Soss, J., Fording, R., & Schram, S. (2011). The organization of discipline: From performance management to perversity and punishment. *Journal of Public Administration Research and Theory*, 21(Suppl 2): i203–i232.
- Steijn, B. (2008). Person-Environment Fit and Public Service Motivation. *International Public Management Journal*, 11(1), 13–27.
- Stoker, L., & Bowers, J. (2002). Designing multi-level studies: sampling voters and electoral contexts. *Electoral Studies*, 21(2), 235–267.
- Taylor, J. (2008). Organizational influences, public service motivation and work outcomes: An Australian study. *International Public Management Journal*, 11(1), 67–88.
- Thorsen, S. V., & Bjørner, J. B. (2010). Reliability of the Copenhagen Psychosocial Questionnaire. *Scandinavian Journal of Public Health*, 38(3), 25–32.
- Van der Doef, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: A review of 20 years of empirical research. *Work & Stress: An International Journal of Work, Health & Organisations*, 13(2), 87–114.
- Van Dooren, W., Bouckaert, G., & Halligan, J. (2010). *Performance management in the Public Sector*. London & New York: Routledge & Taylor and Francis Group.
- van Thiel, S., & Leeuw, F. (2002). The Performance Paradox in the Public Sector. *Public Performance and Management Review*, 25(3), 267–281.
- Verquer, M. L., Beehr, T. A., & Wagner, S. H. (2003). A Meta-Analysis of Relations Between Person-Organization Fit and Work Attitudes. *Journal of Vocational Behavior*, 63(3), 473–489.
- Walker, R. M., Boyne, G. A., & Brewer, G. A. (2010). Introduction. In R. M. Walker, G. A. Boyne & G. A. Brewer (Eds.), *Public Management and Performance. Research Directions* (pp. 1–33). Cambridge: Cambridge University Press.
- Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for Performance in the public sector – Benefits and (Hidden) Costs. *Journal of Public Administration Research and Theory*, 20(2), 387–412.
- Weiss, J. A., & Piderit, S. K. (1999). The value of mission statements in public agencies. *Journal of Public Administration Research and Theory*, 9(2), 193–223.
- Wright, B. E. (2004). The role of work context in work motivation: A public sector application of goal and social cognitive theories. *Journal of Public Administration Research and Theory*, 14(1), 59–78.
- Wright, B. E. (2007). Public service and motivation: Does mission matter? *Public Administration Review*, 67(1), 54–64.

- Wright, B. E., & Pandey, S. K. (2008). Public service motivation and the assumption of person-organization fit: Testing the mediating effect of value congruence. *Administration and Society*, 40(5), 502–21.
- Yang, K., & Kassekert, A. (2010). Linking Management Reform with Employee Job Satisfaction: Evidence from Federal Agencies. *Journal of Public Administration Research and Theory*, 20(2), 413–436.
- Yang, K., & Pandey, S. K. (2009). How Do Perceived Political Environment and Administrative Reform Affect Employee Commitment? *Journal of Public Administration Research and Theory*, 19(2), 335–360.

Table 1. Descriptive statistics

	Obs.	Mean	Std.dev.	Min	Max
Goals	63	52.42	10.916	25.00	87.50
Financial rewards	63	47.22	27.353	0	100
Sanctions	63	24.50	15.566	0	61.67
Supportive management	63	58.01	9.557	35.90	87.50
Work environment ¹	2,115	66.60	24.94	0	100
Female	2,115	0.38	0.486	0	1
Age	2,115	41.02	11.82	23	73
Associate professor	2,115	0.33	0.47	0	1
Assistant professor/ postdoc	2,115	0.18	0.38	0	1
PhD student	2,115	0.34	0.47	0	1
Social sciences	2,115	0.19	0.39	0	1
Natural/ technical sciences	2,115	0.50	0.50	0	1
Health sciences	2,115	0.13	0.33	0	1
Average weekly working hours	2,115	45.96	8.33	30	100
Research time (pct.)	2,115	46.73	23.96	0	100
Intrinsic motivation	2,115	83.16	12.83	25	100
Extrinsic motivation	2,115	53.98	18.98	0	100

¹ The measure “satisfaction with the psychosocial work environment is ordinal and coded 0 “very unsatisfied“, 25 “unsatisfied“, 50 “neither satisfied or unsatisfied“, 75 “satisfied” and 100 “very satisfied”.

Table 2. Multilevel mixed-effects ordered logistic regression predicting satisfaction with the psychosocial work environment. Unstandardized regression coefficients.

	Model 1	Model 2	Model 4
Goals	0.028** (0.006)	0.014* (0.006)	0.013* (0.006)
Financial rewards	-0.006 (0.056)	-0.016 (0.044)	-0.010 (0.044)
Sanctions	-0.004 (0.033)	-0.008* (0.003)	-0.007* (0.004)
Financial rewards x Intrinsic motivation			-0.003 (0.003)
Financial rewards x Extrinsic motivation			0.005* (0.002)
Female		-0.384** (0.088)	-0.390** (0.089)
Age		0.001 (0.006)	-0.000 (0.006)
Associate professor		-0.691** (0.139)	-0.674** (0.139)
Assistant professor/ postdoc		-0.695** (0.184)	-0.674** (0.185)
PhD student		-0.579** (0.195)	-0.534** (0.197)
Social sciences		0.293* (0.149)	0.277+ (0.149)
Natural/ technical sciences		0.252+ (0.134)	0.257+ (0.134)
Health sciences		0.563* (0.163)	0.568* (0.163)
Average weekly working hours		-0.023** (0.005)	-0.025** (0.005)
Research time (pct.)		0.009** (0.002)	0.010** (0.002)
Supportive management		0.029** (0.007)	0.029** (0.008)
Intrinsic motivation			0.016 (0.009)
Extrinsic motivation			-0.015 (0.006)
cut1	-2.176 (0.341)	-2.602 (0.587)	-2.150 (0.978)
cut2	-0.452 (0.324)	-0.846 (0.577)	-0.392 (0.942)
cut3	0.642 (0.323)	0.275 (0.576)	0.730 (0.941)
cut4	2.039 (0.330)	2.638 (0.579)	3.101 (0.944)
N (individual level)	2115	2121	2121
N (organizational level)	63	63	63

+ p < 0.10, * p < 0.05, ** p < 0.01 (Standard errors in parentheses)