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MANAGING EMPLOYEE MOTIVATION: EXPLORING THE CONNECTIONS BETWEEN MANAGERS' ENFORCEMENT ACTIONS, EMPLOYEE PERCEPTIONS, AND EMPLOYEE INTRINSIC MOTIVATION

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ABSTRACT: *A number of studies show that the use of external interventions such as command systems and economic incentives can decrease employee intrinsic motivation. Our knowledge of why the size of “the hidden cost of rewards” differs among organizations is, however, still sparse. In this article, we analyze whether local managers—the primary enforcers of external interventions—affect how employees perceive a command system and thereby affect employee intrinsic motivation. Using a multilevel dataset of 1,190 teachers and 32 school principals, we test whether principals’ use of “hard,” “mixed,” or “soft” actions to enforce a command system (obligatory teacher-produced student plans) is associated with teacher intrinsic motivation. Results show that teachers experiencing “hard” enforcement actions have lower intrinsic motivation than teachers experiencing “soft” enforcement actions. As expected by motivation crowding theory, part of this association is mediated by teachers’ student plan requirement perception. These findings support the motivation crowding argument that employee intrinsic motivation depend on the employees’ need for self-determination.*

INTRODUCTION

External interventions such as command systems and economic incentives are often used in organizations, including in the public sector, to control employee

behavior and optimize performance (Miller 2005; Miller and Whitford 2007). The general belief is that the use of either the stick (command systems) or the carrot (economic incentives) will motivate employees to enhance their performance (Miller and Whitford 2007; Miller 2005; Moe 1984; Huber and Shipan 2000).

Motivation crowding theory, however, argues that while external interventions have the potential for enhancing performance through the disciplining effect, these interventions can also crowd out employees' intrinsic motivation for working, thereby potentially lowering performance (Frey 1997). Building on social psychology, especially the work of Deci and Ryan (Ryan and Deci 2000; Deci and Ryan 1985; 2012; Ryan and Connell 1989), Frey (1997) argues that if employees perceive external interventions as controlling, intrinsic motivation is crowded out, counteracting the disciplining effect of the intervention. Conversely, if employees perceive external interventions as supportive, intrinsic motivation will be enhanced and the intervention will be effective.

While a number of empirical studies have confirmed the crowding mechanism (Andersen and Pallesen 2008; Barkema 1995; Frey and Jegen 2001; Jacobsen, Hvidtved, and Andersen 2014; Jacobsen and Andersen 2014), differences in the sizes of the crowding effects among organizations have been left unexplained. In particular, the influence that local managers—as the primary enforcers of external interventions—may hold over employee intrinsic motivation through employee perceptions is understudied. This article analyzes whether managers' enforcement of a given command system affects employee intrinsic motivation. Due to the inherent demands on employee behavior, any command system runs the risk of being perceived as controlling by employees, with lower employee intrinsic motivation as a result. Thus, analyzing whether managers' choice of enforcement actions is related to how employees perceive the command system and ultimately their intrinsic motivation is essential. If managers, through their enforcement actions, can influence employee perceptions of external intervention, the potential negative crowding out effect might be avoidable.

We hypothesize—drawing on motivation crowding theory—that employees will perceive these demands as less controlling if local managers choose to enforce the given command system using soft actions supporting the employees' need for self-determination (Frey 1997). Moreover, given the expected relationship between employee perception and managers' enforcement actions, we expect higher intrinsic motivation among employees when managers' enforcement actions are supportive of the employees' need for self-determination.

We test these hypotheses by analyzing whether the managers' actions when enforcing a specific command system—obligatory teacher-produced student plans—in Danish primary and lower-secondary schools are associated with teachers' intrinsic motivation and whether this association is mediated¹ by employee perceptions of the student plan requirement.

The requirement that teachers make individualized student plans is a uniform command system implemented nationwide in Denmark in 2006. All school principals are obligated to enforce the same national rules, but the principals' actions differ substantially when they enforce the obligatory student plans (Pedersen et al. 2011). Danish primary and lower-secondary schools therefore constitute an excellent

case for investigating the relationships between managers' enforcement actions, employee perception, and employee intrinsic motivation.

This article adds to the existing empirical literature by making two significant contributions. First, while most empirical research on motivation crowding theory tests how an external intervention may affect individuals, this article investigates why an external intervention can have different effects on individuals in different organizations. Thus, the aim of this article is to help bridge the gap in our knowledge of why there are differences in the sizes of the crowding effects among organizations. Second, by testing whether managers' choice of enforcement actions is associated with employees' level of intrinsic motivation, this article investigates whether managers have a potential for increasing or diminishing a negative crowding effect on intrinsic motivation through their choice of enforcement actions.

The following section presents our theoretical framework, which draws on motivation crowding theory. After briefly describing the command system being studied, we deduce our hypotheses and test them on a combined dataset of two cross-sectional surveys and administrative data from Statistics Denmark. The multi-level dataset consists of 1,190 teachers within 32 schools. The analyses confirm that the principals' actions when enforcing the national requirements are correlated with employee intrinsic motivation. Part of this correlation is mediated by teachers' student plan requirement perception. The last section discusses our findings, their implications, and the need for further research.

MOTIVATION CROWDING, SELF-DETERMINATION, AND MANAGERIAL BEHAVIOR

Command systems are typically intended to make employees behave in accordance with a set of directives specifying required employee behavior. Most command systems also specify how employee behavior should be monitored and how non-compliance should be sanctioned (Jacobsen et al. 2013). While firing can be an effective ultimate threat (Shapiro and Stiglitz 1984), command systems often apply more modest sanctions, such as warnings, cautions, and fines (Frey 1997; Gneezy and Rustichini 2000; Soss, Fording, and Schram 2011).

Command systems are expected to have a disciplining effect on employees (Alchian and Demsetz 1972; Boly 2011; Mitnick 1980). However, as employee perceptions of a command system determine the direction of the crowding effect (decreasing or increasing intrinsic motivation), the effect of a command system on employee intrinsic motivation and performance depends on these perceptions (Andersen and Pallesen 2008; Jacobsen and Andersen 2014). Frey (2012) expects all types of external interventions to crowd in intrinsic motivation if the individuals concerned perceive it as supportive. In that case, self-esteem is fostered, and individuals feel that they are given more freedom to act, thus enlarging self-determination. Whether it is empirically possible to make a command system which is seen as so supportive that it crowds in intrinsic motivation still remains to be seen.

Command systems can be specified in national policies, which typically mandate that managers enforce them. However, managers often enforce such requirements in

different ways. For example, a study of mandate design in the state-level land use and development management areas finds substantial variation in regulatory styles (May 2007). This variation was only weakly linked to the mandating tools available from policymakers. Even managers in very similar organizations chose very different enforcement actions (Chenhall and Euske 2007; May 1995; Keiser and Meier 1996).

The implementation literature uses different terminology to distinguish between enforcement actions as either “persuasion” or “punishment” (Braithwaite 1985), “conciliatory” or “legalistic” (May 2007), “cooperative” or “deterrent” (Scholz 1991). Despite the distinct features of each set of opposing terms, they substantially overlap in the way that they distinguish between “hard” enforcement actions in which managers “keep a close watch” and “meticulously enforce the letter of the law” (Scholz 1984) and “soft” enforcement actions that focus on “negotiated compliance” (May 1993). Building on these distinctions, we view enforcement as a continuum from “hard” (based on the use of directives, monitoring, and threats of punishment) to “soft” (based on dialogue and suggestions). This distinction is also in line with the general approach in motivation crowding theory, which differentiates between “hard” regulation based on enforceable requirements backed up by threats of sanctions and “soft” regulation based on agreement but without threats of punishment (Frey 1997).

As managers’ enforcement actions can affect employees’ experiences of self-determination, such actions are likely important for both employee perceptions and employee intrinsic motivation. According to self-determination theory, satisfaction of the individual’s needs for autonomy, competence, and relatedness is necessary for upholding autonomous types of motivation such as intrinsic motivation (Deci and Ryan 2000; Ryan and Deci 2002). Recent contributions also argue that satisfaction of the individual’s needs for autonomy, competence, and relatedness is necessary for upholding public service motivation (Jacobsen et al. 2013; Vandenabeele 2007).

A manager choosing to enforce a given command system using “soft” actions may better support employees’ need for competence by expressing more trust in the employees’ actions. In contrast, managers using “hard” enforcement actions (based on monitoring and sanctioning) signal that they see their employees as unwilling or unable satisfactorily to fulfill the assigned task (Frey 1997). An employee feels autonomous when he or she is the perceived origin of his or her own behavior, and the need for autonomy is highly relevant in relation to employees’ perception of command systems (Ryan and Deci 2002). As “hard” enforcement actions apply directives and monitoring, such interventions tend to limit self-determination, thereby reducing intrinsic motivation even when the requirements are not accompanied by explicit rewards or punishments (Deci and Ryan 1987). Conversely, Deci, Connell, and Ryan (1989) find that employees express higher satisfaction and more trust in management when the manager supports their need for autonomy. Thus, self-determination theory expects that employees who experience command systems as limiting satisfaction of their needs for competence and autonomy will perceive that command as controlling. In contrast, employees will perceive a command system as supportive if it increases their “need satisfaction” (Vansteenkiste et al. 2004).

In line with this argument, Frey expects “hard” regulations to crowd out intrinsic motivation, whereas “soft” ones are expected to leave it unaffected or may even crowd it in (Frey 1997). Managers who enforce a given command system using “hard” actions seek to change behavior by involuntary means; e.g., by monitoring and sanctioning. This reduces employees’ self-determination, and the effect might be a shift to extrinsic motivation and the undermining of intrinsic motivation. The argument is that when employees pay more attention to these external interventions rather than their own enjoyment of the activity, they think that their participation in the activity is the result of the external requirements rather than their own internal enjoyment, and this reduces their actual enjoyment. This mechanism is also called the overjustification effect (Tang and Hall 1995).

Conversely, according to Frey, managers enforcing a given command system using “soft” actions (based primarily on dialogue and negotiation) are unlikely to reduce employees’ self-determination, because this style allows an element of individual choice. Consequently, we expect that when managers enforce an external intervention using “hard” actions, employees will perceive that intervention as more controlling than when managers use “soft” actions. We further expect that using “hard” actions to enforce a command system will lead to lower intrinsic motivation among employees.

RESEARCH DESIGN AND HYPOTHESES

The general expectations derived from motivation crowding theory apply to many different settings. We have chosen to test them for Danish municipal (publicly owned) primary and lower-secondary schools. Choosing Danish public schools as our unit of analysis has three advantages. First, as the following section will discuss in detail, data are available from separate sources for principals and teachers, allowing us to match teacher and principal responses from the same schools. Second, Danish public schools are very similar in that they produce the same type of services. Third, and most importantly, a new command system was implemented in Danish schools in 2006, allowing us to test whether the principals’ different enforcement of this (uniform) requirement is associated with the teachers’ perception of the requirement and with teachers’ intrinsic motivation.

Since 2006, every publicly employed teacher in Denmark is required to make an individualized student plan for each pupil in each subject (Law no. 170, 28.03.2006). An individual student plan is a written plan describing both the student’s current academic achievements and measures for obtaining improvement if necessary. Thus, the student plan identifies any accommodations and special education services necessary for assisting the student in improving academically. This student plan, which must be updated at least annually, resembles individualized education programs in the US and individual education plans (commonly referred to as IEPs) in Canada and the United Kingdom, except that IEPs are mandatory only for students with disabilities.

In Denmark, school principals are responsible for the teachers’ preparation and use of student plans, and 95% of the principals we studied have taken action to

ensure that teachers use student plans. Although student plans in Denmark constitute a nationwide command system with identical formal rules for all public schools, principals enforce it very differently, thereby making this command system a good case for investigating the association between managers' enforcement, employee perception, and intrinsic motivation.

In line with the theoretical discussion, we expect teachers' intrinsic motivation to be lower when manager enforce student plans using "harder" actions. We further expect the correlation between teacher intrinsic motivation and principal enforcement actions to be mediated by teachers' perception of the student plans as either controlling or supporting. "Harder" student plan enforcement will lead to a more controlling perception of the requirement for student plans among teachers, and thus lower teacher intrinsic motivation. We therefore test the following two hypotheses:

- H1: School principals' enforcement of the student plan requirement is correlated with teachers' intrinsic motivation. The "harder" the enforcement actions, the less intrinsically motivated teachers will be.
- H2: The correlation between school principals' enforcement actions and teachers' intrinsic motivation is mediated by teachers' perception of the student plan requirement as either controlling or supporting.

Figure 1 illustrates our empirical model.

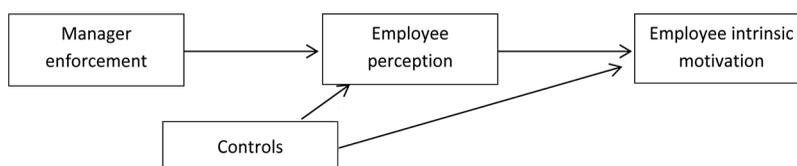


Figure 1. Empirical model.

DATA

Empirically, we test our hypotheses on a merge of two cross-sectional surveys and administrative data from Statistics Denmark. The two surveys, one among teachers at 85 Danish municipal (public) primary schools and one among principals at those same schools, were taken between December 2010 and July 2011. The teacher survey was conducted at school staff meetings. This approach resulted in very high response rates—close to 100% (only a few teachers refused to answer)—at all schools. Teachers absent from the meeting received a questionnaire and a return envelope in their mailbox.

Danish schools are relatively small by international comparison (OECD 2009). Therefore, to find the best options for generalizability and securing enough teachers per school to do multilevel analyses, we chose to focus on the biggest schools in the country. Thirty-eight percent of the schools we contacted participated in the study.

Most of the remaining 62% did not participate only because no staff meeting took place in the data collection period. After a review of the data quality, we had 3,155 usable responses from 85 schools. The principal survey was collected through email questionnaires to principals at all primary schools with ninth grades (ages 15–16 years in Denmark). The response rate was 50%.

The combined data consists of 1,190 teachers from 32 schools for which we have valid information from both principals and teachers on the key variables. Fifty-three schools (1,971 teacher responses) are left out of the sample, either because the principal did not have sufficient time for the survey within the chosen timeframe or because the principal did not hold his or her position before 2006 and was thus not in charge when student plans were adopted.

The number of schools left out of the analysis may raise some concerns about generalizability. However, we find no significant differences in the socioeconomic composition or average performance of students, or the mean number of students in the 32 schools included in this study and the original sample of large schools. Therefore, the schools in our sample resemble the original sample of schools chosen to participate based on observable school characteristics in the study.

Measuring Principal Enforcement Actions

The variable “enforcement of student plans” measures which specific actions, if any, the principals have taken to ensure that teachers actually use student plans. The principals had four options for answering: entering into dialogue with teachers about how to use student plans; making suggestions to teachers about student plans; monitoring whether teachers use student plans; or demanding that teachers use student plans.² We chose these options based on knowledge of the enforcement of student plans from our interviews with six principals. The principal had the option of choosing more than one action. If the principal did nothing to ensure that the teachers used student plans or only entered into dialogue with the teachers or made suggestions about the use of plans, we characterized this approach as “soft” enforcement actions.³ However, if the principal made demands, monitored teachers to ensure the use of student plans, or both, we characterized this approach as “hard” enforcement actions.⁴ Finally, if a principal chose both “hard” and “soft” actions, we characterized this as “mixed” enforcement actions.⁵

Our measure of enforcement actions is arguably less than fine-grained. Finding systematic differences among the three types of enforcement actions can therefore be difficult. Another concern might be that teachers generally perceive principals’ actions as “harder” than principals judge themselves; e.g., while principals perceive their enforcement actions as “soft,” teachers might classify them as “hard” or “mixed.” If such a discrepancy exists in our measure, the differences among the three types of enforcement actions will be less pronounced and finding systematic differences will be more difficult. The reason is that more principals who by teachers are perceived as “hard enforcers” our measure would classify as “soft enforcers,” blurring the differences among the three types of style. The potential attenuation bias in our measure makes our tests, and hence any results, conservative. In contrast, measures of enforcement

actions based on teacher responses could lead to overestimation of relationships due to common source bias (Jakobsen and Jensen 2015; Meier and O'Toole 2013).

Intrinsic Motivation and Employee Perceptions

Intrinsic motivation is measured with seven questions expressing different levels of enjoyment and interest in an individual's everyday work combined into a sum index. We rescaled the index to create values from one to five. Six of the seven items have been tested earlier in Denmark (Jakobsen 2010; Nielsen et al. 2011). The factor analysis (Table 1) supports all of the items measuring the same dimension, and Cronbach's alpha (0.83) indicates high reliability.

The six items for measuring teachers' student plan requirement perception as either controlling (unnecessary complication, signal of distrust) or supportive (opportunity

TABLE 1
Factor Matrix: Dimensions and Loadings

<i>Questions</i>	<i>Cronbach's alpha</i>	<i>Loadings</i>
<i>Teachers' perception of student plans</i>		
Student plans make me feel that I am not trusted to do my work	0.90	0.526
Student plans are good tools for continuous assessment of individual student learning		0.832
Student plans contribute to making the work interesting		0.695
Student plans create a good overview of the students' progress		0.838
A says: Student plans are useful tools, helping me in my daily work as a teacher (supportive).		0.895
B says: Student plans are unnecessary, and I only fill them out because it is obligatory (controlling).		
A says: The time I use filling out student plans is well spent (supportive).		0.885
B says: It is a waste of time to fill out student plans (controlling).		
<i>Intrinsic motivation</i>		
I very much enjoy my daily work	0.83	0.819
A rather large part of my tasks at work are boring (reversed)		0.469
I always look forward to going to work in the mornings		0.786
My work is very exciting		0.813
I like performing most of my work processes		0.769
Doing my job, I feel a great personal satisfaction		0.832
If I won 5 million DKK in the lottery I would still keep my present job		0.650

Note:

1. Extraction method: Principal axis factoring. Only one factor with an Eigen value higher than 1 extracted for all indexes.
2. For question with two statements, the respondents answer the one with which they agree.

for doing a better job and demonstrating competence) were selected from a previous study of Danish teachers (Nielsen et al. 2011). The questions are combined in a reflexive sum index of student plan requirement perception, creating a continuum from 0 (maximum supportive) to 100 (maximum controlling). A factor analysis (Table 1) indicates that all items measure the same dimension and the reliability measured by Cronbach's alpha (0.90) is highly acceptable.

Control Variables

As principals and teachers choose on their own to apply for jobs and are selected from among a number of applicants, one cannot assume that principals and teachers are randomly selected into schools. Thus, one concern might be that any correlation between enforcement actions and intrinsic motivation is due to selection of teachers and principals into schools. Teachers with high intrinsic motivation might choose schools using soft enforcement actions, and teachers with high ability, who need less hard enforcement actions and have higher intrinsic motivation, might also choose to work at certain schools. Table A4 in the appendix further shows that larger schools and schools with higher GPA enforce student plans using "softer" actions than smaller schools and schools with lower GPA, suggesting that enforcement actions are not randomly selected. To control for these potential confounding selection patterns, we have added a number of principal, teacher, and school controls to our models. The descriptive statistics for these variables, as well as for the independent, the mediating, and the dependent variables, appear in Table 2. Previous studies have determined that working conditions for teachers measured by the students' socioeconomic status (SES) and the performance of students are very important for teachers' choice of workplace (Hanushek et al. 1999; 2004). Salary also matters, but to a smaller degree (Hanushek et al. 2004). Thus, teachers generally seek to work at schools with high-performing students from stable families and schools offering a high salary. As teachers with high abilities are more likely to get the most desirable jobs, we can expect schools with high-performing students and high student SES and schools with high wages to have more able teachers. Salary and working conditions are likely important for both teachers' and principals' choice of workplace. Thus, in our models we control for student SES, the grade point average (GPA) of students, the number of students, and principals' performance-related bonuses.

Personal characteristics such as gender and education are also important for teacher selection into schools; e.g., female teachers are more likely to switch to a school with better working conditions (Hanushek et al. 1999; 2004). Therefore, we also control for the following four personal characteristics: principal education (master degree); principal length of service; teacher gender; and teacher education. To capture the teachers' own assessment of their ability, we control for self-efficacy. Self-efficacy is measured by a sum index of five items measuring teachers' self-reported ability to perform their work tasks. These items closely resemble items from the generalized self-efficacy scale (Schwarzer and Jerusalem 1995), but have been modified to fit the work task of teachers (Table A1 in the appendix). We expect teachers with higher self-efficacy to be more likely to switch to schools with better working conditions.

TABLE 2
Descriptive Statistics

	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Principal-level variables					
Enforcement of student plans	32	2.031	0.594	1	3
General enforcement of command systems	32	2.000	0.672	1	3
Tenure of principal (years)	32	13.344	4.618	6	29
Principal with MBA	32	0.188	0.397	0	1
Performance-related pay (\$ per year)	32	378.950	1390.082	0	7240
School-level variables					
School GPA in 2006	32	6.056	0.715	4.615	7.699
SES of students ¹	32	0.720	0.117	0.338	0.896
Number of students ²	32	441.866	64.045	318.438	571.171
Teacher-level variables					
Teachers' perception of student plans ³	1190	46.160	25.233	0	100
Intrinsic motivation	1190	4.219	0.603	1	5
Female teacher	1190	0.656	0.475	0	1
Two-year teaching degree ⁴	1190	0.054	0.226	0	1
Additional teaching degree ⁵	1190	0.140	0.347	0	1
Self-efficacy	1190	3.323	0.488	0.75	4

Note:

1. Average percent of students with affluent socioeconomic background from 2005–2008. Affluent student background is defined as having none or only one of the following four characteristics: parents' income below the median, parents' education below the median, being an immigrant, living with only one parent.

2. Based on an average from 2005–2008.

3. 0 = maximum supportive perception, 100 = maximum controlling perception.

4. As opposed to a traditional four-year teaching degree.

5. Teachers with teaching degree above the traditional four-year degree.

Finally, we also control for how principals generally enforce command systems. While the number of teachers switching schools due to the principal's actions when enforcing student plans must be expected to be small, the principal's general way of enforcing external intervention might be known to teachers prior to the choice of workplace and could therefore potentially be important for teachers' self-selection into schools. To measure how principals generally enforce command systems, we asked them which specific actions they took when enforcing two other nationwide requirements adopted prior to student plans, "national tests" and "shared goals."⁶ The four options for actions were the same as those for enforcing student plans, and the variable "general enforcement" is coded the same way as student plan

enforcement; e.g., principals choosing only “soft” actions when enforcing the two commands are characterized as using “soft” enforcement.

Model

We use a multilevel estimation strategy to estimate our models, as an empty multilevel model (consistent of only the dependent variable intrinsic motivation) confirms that the hierarchical structure of our data leads to auto-correlation (i.e., teachers who work with the same students and are part of the same organizational culture tend to have similar student plan requirement perceptions). By controlling for such factors as the socioeconomic composition of students, some problems of auto-correlation can be avoided. However, as many factors are unobservable and therefore cannot be controlled for, using standard OLS regression may result in biased standard errors and significance tests (Hsiao 2003; Rabe-Hesketh and Skrondal 2008). Therefore, we use a random intercept model, which takes the hierarchical structure into account by allowing for correlation of errors (Rabe-Hesketh and Skrondal 2008). All analyses have also been performed with OLS regression with cluster robust standard errors. As using OLS regression only strengthens the findings, we show only the estimates from the multilevel models.

The use of the random intercept model is appropriate and effective when school-level unobservables can be expected to be uncorrelated with the error term (Rabe-Hesketh and Skrondal 2008). To test this assumption we perform a Hausman test (Hausman 1978), which confirms that the use of the random effects model is appropriate in our study.

Our model has the following mathematical expression:

$$y_{ij} = \beta_0 + \beta_1 x_{ij1} + \dots + \beta_n x_{ijn} + \zeta_j + e_{ij}$$

The usual error term ε_{ij} has been split into two terms: $\varepsilon_{ij} = \zeta_j + e_{ij}$. ζ_j is assumed random between teachers and schools, while e_{ij} is assumed to be random between schools but the same within a school (Rabe-Hesketh and Skrondal 2008). Hence, each school has its own random intercept.

RESULTS

Model 1.1 in Table 3 shows a positive and significant relationship between principals' action when enforcing student plans and teachers' intrinsic motivation, with principal, teacher, and school controls. Teachers experiencing “hard” or “mixed” enforcement actions thus have lower levels of intrinsic motivation compared to teachers experiencing “soft” enforcement actions, thereby confirming Hypothesis 1. This result indicates that using “hard” actions to enforce a command system is associated with lower intrinsic motivation even if a manager combines these actions with “soft” ones. The estimate of “mixed” enforcement is marginally larger than that for “hard” enforcement; however, this difference is not significant.

In addition to enforcement actions, Model 1.1 identifies three other variables as correlated with teachers' intrinsic motivation: number of students at the school; gender of the teacher; and teacher self-efficacy.

TABLE 3
Multilevel Regressions of Teacher Intrinsic Motivation; Random Intercept; Unstandardized Regression Coefficients

	<i>Model 1.1</i>		<i>Model 1.2</i>	
Principal variables				
Enforcement of student plans				
<i>Soft</i>	(reference)		(reference)	
<i>Mixed</i>	-0.165*	(-2.36)	-0.124	(-1.84)
<i>Hard</i>	-0.136*	(-2.00)	-0.0815	(-1.24)
General enforcement of command systems				
<i>Soft</i>	(reference)		(reference)	
<i>Mixed</i>	-0.0299	(-0.55)	-0.00582	(-0.11)
<i>Hard</i>	-0.0193	(-0.28)	-0.0391	(-0.60)
Tenure of principal (years)	0.00130	(0.20)	0.00462	(0.75)
Principal with MBA	-0.0381	(-0.78)	-0.0584	(-1.25)
Performance-related pay (\$1000 per year)	-0.0000101	(-0.00)	-0.00211	(-0.70)
School-level variables				
School GPA in 2006	-0.0135	(-0.39)	-0.0326	(-0.97)
SES of students ¹	-0.285	(-1.04)	-0.278	(-1.06)
Number of students	-0.000607**	(-2.69)	-0.000424	(-1.93)
Teacher-level variables				
Teachers' perception of student plans ²			-0.00352***	(-5.23)
Female teacher	0.0821*	(2.42)	0.0518	(1.51)
Two-year teaching degree	0.00546	(0.08)	-0.00736	(-0.10)
Additional teaching degree	0.0713	(1.53)	0.0469	(1.01)
Self-efficacy	0.485***	(14.67)	0.469***	(14.16)
Constant	5.636***	(18.50)	5.694***	(19.30)
Random effects				
/sigma_u (Variance between schools)	0.042		0.033	
/sigma_e (Variance within schools)	0.548		0.542	
Rho	0.006		0.004	
Observations	1190		1190	
Number of schools	32		32	
R ² (within)	0.169		0.187	
R ² (between)	0.303		0.429	
R ² (total)	0.178		0.199	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, t statistics in brackets.

1. Average percent of students with affluent socioeconomic background from 2005–2008. Affluent student background is defined as having none or only one of the following four characteristics: parents' income below the median; parents' education below the median; being an immigrant; living with only one parent.

2. Student perception: 0 = maximum supportive perception to 100 = maximum controlling perception.

Model 1.2 includes as a control teachers' student plan requirement perception as either controlling or supporting. As we hypothesize that teachers' student plan requirement perception will mediate the relationship between principal enforcement actions and teacher intrinsic motivation, we expect that adding teachers' student plan requirement perception to our model will eliminate the correlation between enforcement actions and intrinsic motivation. Model 1.2 supports this hypothesis: When controlling for teachers' student plan requirement perceptions, estimates of "hard" and "mixed" enforcement actions are no longer significant. While the estimate for "mixed" enforcement actions is only partially reduced, the estimate for "hard" enforcement actions is almost reduced to zero. These results indicate that the difference in teacher intrinsic motivation between schools with "soft" and "hard" enforcement actions, in particular, is explained by employee perceptions, while the difference in teacher intrinsic motivation between "soft" and "mixed" enforcement actions is less explained by employee perceptions.

To investigate the mediated relationship further, we conduct a revised Sobel–Goodman mediation test (Sobel 1986; see also Belle 2013 for empirical use of the Sobel–Goodman test). Due to the categorical nature of our independent variable, most tools for mediation analysis are inappropriate; however, we can revise the Sobel–Goodman test to fit a categorical independent variable. This test gives us an estimate of how much of the correlation between enforcement actions and intrinsic motivation is mediated by employee perception and to what extent the inclusion of employee perception significantly changes the estimates of the variable "enforcement of student plans."

Table 4 shows that 35% of the difference in intrinsic motivation between teachers experiencing "hard" enforcement actions compared to "soft" enforcement actions can be explained by teachers' student plan perceptions as either controlling or supporting. Adding teacher student plan requirement perception to the model significantly diminishes the correlation between enforcement actions and intrinsic motivation (by 0.044). Nineteen percent of the difference in intrinsic motivation between teachers experiencing "mixed" enforcement actions compared to "soft" enforcement actions can be explained by teachers' student plan requirement perception. Adding teacher perceptions to the model significantly reduces the correlation between enforcement actions and intrinsic motivation by 0.03.

TABLE 4

Percentage of Association between Principal Enforcement and Teacher Intrinsic Motivation Meditated by Teacher Student Plan Perception; Sobel–Goodman Test

<i>Mediator</i>	<i>Difference in estimate</i>	<i>P-value</i>	<i>Percentage</i>
"Soft"	(reference)	(reference)	(reference)
"Mixed"	−0.029	0.048	19
"Hard"	−0.044	0.010	35

Number of observations: 1,190; number of schools: 32.

Note: The test does not allow for random intercept estimation, thus the test is performed with cluster robust standard errors.

While the percentage change in the estimate for “mixed” enforcement is small, teacher student plan perception explain more than one-third of the relationship between enforcement actions and intrinsic motivation. Furthermore, the significance levels indicate that the coefficients for “hard” and “mixed” enforcement actions significantly change when teachers’ student plan requirement perceptions are included in the study. We therefore conclude—consistent with motivation crowding theory—that part of the relationship between principal actions when enforcing student plans and teacher intrinsic motivation is mediated by teacher perceptions. Managers’ action when enforcing student plans may also have an independent effect on teacher intrinsic motivation, but this effect is not significant at the conventional level in the multilevel model.

Given the cross-sectional nature of our analysis, an obvious concern is that managers may take into account their employees’ existing levels of intrinsic motivation or student plan requirement perception when choosing their enforcement actions. Certainly, “hard” enforcement actions are more costly for principals in terms of effort and trouble.⁷ If principals consider teachers’ intrinsic motivation or student plan requirement perception when enforcing student plans, it is therefore likely that principals will choose “soft” enforcement actions when teachers have relatively low motivation or perceive the command system as controlling. Such an association is the direct opposite of the causality assumed in this study. If principals soften their enforcement actions in response to teachers’ *ex ante* intrinsic motivation and/or student plan requirement perception, our results are likely conservative.

However, principals could also be more inclined to choose “hard” enforcement actions when their employees have relatively low motivation or see command systems as controlling because they feel a need to exert more managerial authority. Principals may be inclined to enforce command systems using “hard” actions in the hope that this behavior will lead to a higher teacher work effort. If principals adopt this approach, our results will suffer from reverse causality bias.

While we cannot rule out the possibility that principals choose their enforcement actions in response to teachers’ levels of intrinsic motivation or student plan requirement perception, we can test the plausibility of this possibility. In our sample, we have 15 schools in which the principal started work after 2006. As the principal was not present during the initial adoption of student plans, we expect that these principals are more inclined to choose to enforce student plans based on teacher perceptions (as these were already partly formed when the principal arrived) or teachers’ levels of intrinsic motivation. These schools, therefore, are left out of the main analyses. If reverse causality is indeed a problem in our study, we would expect that including these schools in our model would enhance the correlation between enforcement actions and intrinsic motivation, and we expect a significant correlation between enforcement actions and student plan requirement perception.

When we include the principals most likely to choose enforcement based on intrinsic motivation, however, the correlation between enforcement actions and intrinsic motivation is reduced and no longer significant (model A1.1 in Table A2 in the appendix). Furthermore, we find no significant relationship between enforcement actions and student plan requirement perception (model A1.2 in Table A2 in the appendix). This result suggests that if principals consider teachers’ levels of intrinsic motivation

or their student plan requirement perception when enforcing student plans, principals are more inclined to choose “soft” actions’ when teachers are unmotivated or perceive student plans as controlling. The test thus proposes that our results can be interpreted in line with the causality implied in the motivation crowding argument.

DISCUSSION AND CONCLUSION

In the pursuit of democratically determined goals, the use of external intervention to discipline employees or focus employee energy on specific tasks can be necessary despite the potential cost of lower intrinsic motivation and lower performance due to motivation crowding. Thus, more knowledge of whether the potential crowding effect can be diminished is warranted. In particular, the influence that local managers—as the primary enforcers of external interventions—may hold over employee intrinsic motivation through employee perceptions is understudied.

This article expands our knowledge on this issue in two ways: First, while most empirical research on motivation crowding theory tests how an external intervention may affect individuals, this article investigates why an external intervention can have different effects on individuals in different organizations. Thus, the aim of this article is to help bridge the gap in our knowledge of why there are differences in the sizes of the crowding effects among organizations. Second, our analyses show that schools where principals enforce student plans using “hard” or “mixed” actions, teacher intrinsic motivation is lower compared to schools where principals choose “soft” actions. Consistent with the motivation crowding argument, we find that the correlation between principal enforcement actions and teacher intrinsic motivation is partly mediated by teachers’ student plan requirement perception as either controlling or supporting.

This result thus suggests that local managers may play a significant role in the implementation process by determining, through their actions, the size of the crowding effect. As autonomous motivation is positively related to performance, this is an important result for all managers (Gagné and Deci 2005; Ryan and Deci 2002). Nonetheless, the disciplining effect of a command system might also increase performance, and this effect via extrinsic incentives may be stronger than a potential crowding effect. The key implication is therefore that public managers should be aware of the potential negative consequences of “hard” enforcement actions on intrinsic motivation and potentially other on-the-job factors such as job satisfaction, self-esteem, and mental well-being (Gagné and Deci 2005).

The study’s research design does not allow for causal interpretation. While we find robust correlations between principals’ enforcement actions and teacher intrinsic motivation, mediated by teachers’ perceptions, we cannot conclude with certainty that principals’ enforcement is part of the cause of teachers’ level of intrinsic motivation. The direction of causality may be the opposite; principals may choose to enforce student plans based on teachers’ intrinsic motivation or teachers’ student plan requirement perception.

Given our results, reverse causality bias is only a problem if principals tend to use “hard” enforcement actions in response to teachers low levels of intrinsic motivation or teachers’

perception of student plans as controlling. We test this claim and find that if principals take teacher intrinsic motivation or perceptions into account when enforcing student plans, they will likely choose “softer” enforcement actions, when teachers have low levels of motivation or perceive student plans as controlling. The test thus suggests that our results can be interpreted in line with the causality implied in the motivation crowding argument. Nonetheless, new studies utilizing experimental or panel data are necessary for providing stronger evidence for the causal relationship suggested in this study.

The results from this study pose a number of additional questions for the relationship between management enforcement actions or leadership styles and employee intrinsic motivation. First, while this study investigates how actions chosen when enforcing a command systems is related to intrinsic motivation, much of the motivation crowding literature focuses on financial incentives. Thus, future studies analyzing the relationship between enforcement actions and intrinsic motivation for incentive systems would be beneficial. According to motivation crowding theory, such systems are perceived as less controlling than command systems because they allow more choice and autonomy for the affected employees (Frey 1997). However, we really have no empirical knowledge as to which is the more controlling.

Second, studies on how enforcement actions affects performance would be valuable for obtaining a more complete picture of the overall effects of command systems. Given our findings, we expect “harder” enforcement actions to be associated with lower autonomous motivation and lower performance (depending on the size of the disciplining effect). More empirical studies that test these propositions would, however, be welcome.

NOTES

1. Motivation crowding theory expects the effect of external interventions (incentive and command systems) on intrinsic motivation and ultimately performance to be *moderated* by employee perceptions. As this study focuses on the importance of principal enforcement for teacher intrinsic motivation for a given command system (obligatory student plans) and not on the effect of this command system, we keep the intervention constant (all schools are subject to the same command system). Given that the command system does not vary, the relationship between manager enforcement and intrinsic motivation can be modeled as mediated by employee perceptions. We will, throughout the article, describe the relationship between enforcement and intrinsic motivation as mediated by employee perceptions. However, the authors acknowledge that this terminology is only appropriate when there is no variation in the external intervention.

2. While the authors recognize that managers may use different enforcement towards different teachers as hypothesized by Leader–Member Exchange Theory (Schriesheim et al. 1999), this study, like a number of other studies on managerial behavior or leadership (see, e.g., Bass 1990; Fernandez 2005), focuses on managers’ overall behavior in order to study organizational differences in employee perceptions and intrinsic motivation.

3. Only one school chose to do nothing to ensure that teachers used the student plans. Results do not change if this school is left out of the analyses.

4. Most of the principals choose both of the two hard actions. We redid the regressions to check whether significant changes could be found between schools choosing both hard actions and schools choosing only one. However, no significant changes could be identified.

5. If a combination of “soft” and “hard” enforcement actions is associated with a more supportive employee perception and higher intrinsic motivation than either “hard” or “soft” actions independently, as suggested by the two-factor theory (Herzberg 1959), our model will thus identify such a relationship.

6. The command system “National tests” made it mandatory to use standardized IT tests in public schools in order for teachers to better follow the progress of students and better plan teaching according to the needs of the student. With the command system “Common goals,” national end goals for each subject in public schools were specified.

7. Given the higher cost for principals of using “mixed” or “hard” enforcement actions, principals may also choose “soft” enforcement actions when they are indifferent to whether or not student plans are implemented. If “soft” enforcement actions lead to lower teacher compliance with the intentions behind student plans, our results could be explained by the fact that teachers experiencing “soft” enforcement actions comply less with student plans and their motivation is thus less affected by the command system. As a new study shows that “softer” enforcement actions do not lead to lower teacher compliance with student plans, we, however, do not consider this alternative explanation of the results as probable (Mikkelsen 2013).

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APPENDIX

TABLE A1
Factor Matrix: Dimensions and Loadings

	<i>Loadings</i>
<i>Self-efficacy (teacher)</i>	
I believe I'm making a significant difference in the lives of my students	0.638
If I really try, I can get even the most difficult and unmotivated student to improve	0.580
I usually know how to get through to my students	0.802
I am a successful teacher	0.779
I have the ability to create a quiet working environment in class when it is necessary	0.740

Note:

1. Extraction method: Principal axis factoring. Only one factor with an Eigen value higher than 1 extracted.

2. Cronback's alpha is 0.72.

TABLE A2

Multilevel Regressions of Teacher Intrinsic Motivation (Including Principals, Who Started Working after 2006); Random Intercept; Unstandardized Regression Coefficients

	<i>Model A1.1 Intrinsic motivation</i>	<i>Model A1.2 Student plan perception</i>
Principal variables		
Enforcement of student plans		
<i>Soft</i>	(reference)	
<i>Mixed</i>	-0.0862 (-1.54)	5.490 (1.39)
<i>Hard</i>	-0.00715 (-0.15)	6.013 (1.25)
General enforcement of command systems		
<i>Soft</i>	(reference)	
<i>Mixed</i>	0.00157 (0.04)	-4.590 (-1.29)
<i>Hard</i>	-0.0306 (-0.52)	-5.202 (-1.07)
Tenure of principal (years)	0.00610* (2.02)	-0.389 (-1.57)
Principal with MBA	0.00116 (0.03)	-4.548 (-1.25)
Performance related pay (\$1000 per year)	-0.00580 (-0.54)	-0.0715 (-0.81)
School-level variables		
School GPA in 2006	-0.0158 (-0.54)	-2.187 (-0.91)
SES of students ¹	-0.201 (-0.80)	4.368 (0.21)
Number of students	-0.000236 (-1.40)	0.0339* (2.46)
Teacher-level variables		
Female teacher	0.0908** (3.13)	-8.967*** (-7.39)
Two-year teaching degree	0.0550 (0.98)	-0.922 (-0.39)
Additional teaching degree	(-0.05)	-3.002 (-1.89)
Self-efficacy	0.476*** (16.94)	-3.583** (-3.05)
Constant	2.325*** (9.24)	63.260*** (3.37)
Random effects		
/sigma_u (Variance between schools)	0.057	8.158
/sigma_e (Variance within schools)	0.550	22.883
Rho	0.011	0.113
Observations	1699	1702
Number of schools	47	47
R ² (within)	0.162	0.046
R ² (between)	0.257	0.256
R ² (total)	0.166	0.078

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, t statistics in brackets.

1. Average percent of students with affluent socioeconomic background from 2005–2008. Affluent student background is defined as having none or only one of the following four characteristics: parents' income below the median; parents' education below the median; being an immigrant; living with only one parent.

TABLE A3
Correlation Table for Teacher-Level Variables; Unstandardized Regression Coefficient

<i>Teacher-level variables</i>	<i>Intrinsic motivation</i>	<i>Teachers' perception of student plans³</i>	<i>Female teacher</i>	<i>Two-year teaching degree</i>	<i>Additional teaching degree</i>	<i>Self-efficacy</i>
Intrinsic motivation	1					
Teachers' perception of student plans ³	-0.2144*	1				
Female teacher	0.1281*	-0.1890*	1			
Two-year teaching degree	-0.0064	-0.0069	0.0235	1		
Additional teaching degree	0.0816*	-0.1263*	0.0632*	-0.0749*	1	
Self-efficacy	0.4072*	-0.1370*	0.1487*	-0.0289	0.0851*	1

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; number of observations: 1,190 teachers.

TABLE A4
Correlation Table for School-/Principal-Level Variables; Unstandardized Regression Coefficient

<i>School-/principal-level variables</i>	<i>Enforcement of student plans</i>	<i>General enforcement of command systems</i>	<i>Tenure of principal (years)</i>	<i>Principal with MBA</i>	<i>Performance-related pay</i>	<i>School GPA in 2006</i>	<i>SES of students</i>	<i>Number of students</i>
Enforcement of student plans	1							
General enforcement of command systems	0.189	1						
Tenure of principal (years)	0.2062	0.2494	1					
Principal with MBA	0.0000	-0.1210	-0.1596	1				
Performance-related pay	0.1020	0.1750	0.5911*	-0.1331	1			
School GPA in 2006	-0.4399*	-0.0501	0.003	0.0128	-0.0348	1		
SES of student	0.2626	0.4471*	0.3682*	-0.1450	0.1134	-0.4345	1	
Number of students ²	-0.5644*	-0.1495	-0.0596	-0.0341	-0.1625	0.4676*	-0.3221	1

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; number of observations: 32 schools/principals.