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Ticket to rate: antecedents to turnover intention among teachers

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ABSTRACT

Since the millennium, marketization of upper secondary education involving control, accountability, and performance has changed the working life of many teachers in the Western world. The objective of this paper is to examine the relationship between turnover intention and control-oriented HRM, performance appraisal, and heteronomy. Leader-member exchange (LMX) is tested as a possible mediator and moderator. The study is based on quantitative data from a survey of Norwegian high school teachers ($n = 1055$) in three areas. Sample characteristics correspond with characteristics for the overall teacher population in Norway. The main methods of analysis include path analysis and bootstrapping. Analyses uncover positive relationships between turnover intention and all three variables. LMX mediated all relationships. No moderation effects of LMX were found. Direct relationships did not differ with gender, but mediation effects did. Among female teachers control-oriented HRM and heteronomy disturbed the LMX relationship so much that these variables increased their intention to quit. Our study contributes by showing that turnover intention among teachers should be understood in conjunction with marketization and de-regulation reforms, as these have increased the proliferation of control-oriented HRM and heteronomy. We highlight the significance of LMX for understanding turnover intentions, and the practical implications of our findings.

Introduction

Statistics Norway has estimated a shortage of 8,000 full-time teachers in Norway in 2022, which is likely to continue at least until 2030 (NAV, 2021). In light of this, teacher turnover is a considerable problem. Norwegian schools will benefit greatly if they are able to keep their teachers from leaving their jobs, and, possibly, from leaving the teaching profession. One-third of all teachers in the country 'left the teaching profession within 5 years' (Tiplic et al., 2015, p. 452) after entering the profession, mirroring an international trend of teacher attrition (Qin, 2021). In the U.S., up to 40 percent of teachers are found to leave within 5 years (M.-L. Chang, 2009).

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Several factors may explain teacher turnover intention, defined as ‘a conscious and deliberate willfulness to leave one’s organization’ (Poon, 2012, p. 1505). In the present study contextual or situated factors relating to working conditions are examined as potential antecedents to turnover intention, which are regarded as a pre-stage to turnover (Griffeth et al., 2000), defined as teachers exiting their current school (Nguyen et al., 2020). Instead of focusing on school context variables like a marginalized student body, discipline problems, time pressure, and excessive workload (Skaalvik & Skaalvik, 2011, 2020), we study variables like HRM approach, lack of autonomy, performance appraisal (dis)satisfaction, and leader-member exchange.

Such variables deserve more focused attention in the study of the changing working life of Norwegian teachers. In the last 15 years education in Norway has undergone a transition from a regulated to a deregulated system inspired by New Public Management reforms. The transition has been and is most visible in the capital of Oslo, but de-regulation is the norm in the educational system in the whole country. Upper secondary education has been partly marketized, setting up quasi-markets where performance and accountability are promoted through reporting, tests, benchmarking, and performance appraisals (PA) of teachers in the form of rating. PA is defined as ‘a formal process (. . .) by which employees are evaluated by some form of judge (typically a supervisor) who assesses the employee’s performance along a given set of dimensions, assigns a score to that assessment, and then usually informs the employee of his or her formal rating’ (DeNisi & Murphy, 2017, p. 421). With PA organizations aim to review, measure, and improve the performance of employees, and distribute rewards (Aguinis, 2009; Bayo-Moriones et al., 2020). PA is usually part of a human resource management (HRM) system, which may differ in the level and mode of control imposed on employees. While a high-commitment HRM system “aims to create a psychological bond between the employee and the organization to ensure that employees are committed to organizational goals” (Meijerink et al., 2020, p. 2895), a control-oriented system is reminiscent of Taylor’s scientific management in that it seeks to ‘establish order, exercise control and achieve efficiency in the application of the work force’ (Walton, 1985, p. 78). Although the two approaches may be regarded as ‘two different modes of control’ (Wright & Essman, 2021, p. 210), employees facing control-oriented HRM often enjoy less autonomy than colleagues in organizations with a more commitment-oriented approach (Boselie et al., 2021; Lepak & Snell, 2002). This, termed heteronomy, reflects low levels of ‘freedom, independence, discretion to schedule work’ and few opportunities to ‘make decisions, and choose the methods used to perform tasks’ (Morgeson & Humphrey, 2006, p. 1323).

HRM “involves management decisions related to policies and practices that together shape the employment relationship and are aimed at achieving certain goals” (Boselie et al., 2021, p. 484) and can be defined as ‘the management of work and people toward desired ends’ (Boxall et al., 2007, p. 1). Prior studies indicate that HRM has a key role in marketized public organizations eager to improve their competitiveness and reputation. As such, HRM seems to materialize as more control-oriented than commitment-oriented HRM (Wæraas & Dahle, 2020), invoking an instrumental type of performance feedback and less autonomy. In a time where schools need more, not fewer, teachers, understanding the consequences of such control-oriented HRM systems for turnover intention seems to be of the utmost importance, especially given that teachers traditionally have enjoyed a high level of professional autonomy and have not been subjected to rigid performance appraisal systems in the past. Thus, the main research question for the present study is:

To which extent are control-oriented HRM, performance appraisal dissatisfaction, and heteronomy antecedents to turnover intention for teachers?

In the present paper, we make several contributions to scholarship on turnover intention in general, but also in a more specific educational context. First, we provide a quantitative examination of whether de-regulation-related variables such as control-oriented HRM, heteronomy, and performance appraisal affect turnover intention. Second, we analyze our findings in light of social exchange theory. Third, and relatedly, we find that the quality of the relationship between leader and member, referred to as the leader-member exchange relationship (LMX), is a prominent mediator, but not moderator. Fourth, the direct effects of the independent variables on turnover intention do not vary with gender, but two out of three indirect effects – with LMX as a mediator – vary with gender.

To offer insights into these topics, theoretical aspects and methodological choices are presented, followed by presentation, analysis, and discussion of empirical findings, plus suggested avenues for future research.

Theoretical observations and hypotheses

Teacher exposure to de-regulation in a social exchange perspective

The present paper represents a novel understanding of the implications of de-regulative practices in public sector schools by critically assessing whether such practices can potentially be problematic for the quality of social exchange relationships, which in turn may encourage turnover intention. By studying the relationships between turnover intention and de-regulation-related variables like control-oriented HRM, heteronomy, and rating satisfaction in light of social exchange theory, their potential effect on intention to quit may be understood as a result of lowered social exchange quality.

First, as leader-member exchange is included in the model, the role of the social exchange, as ‘an exchange of social rewards’ (Blau, 1964, p. 14), between leader and employee is prominent in this research. A social exchange is defined as ‘a series of interactions that generate obligations’ (Cropanzano & Mitchell, 2005, p. 874). The exchange, which applies to intrinsic, not economic, benefits, is regarded to have the following core features: ‘(1) an actor’s initial treatment toward a target individual, (2) a target’s reciprocal responses (both attitudinal and behavior) to the action, and (3) relationship formation’ (Cropanzano et al., 2017, p. 2).

Inherent is the principle of reciprocity, which in reality is about generated perceived obligations to repay intrinsic benefits so that ‘an action by one party leads to response by another’, and ‘something has to be given and something returned’ (Cropanzano & Mitchell, 2005, p. 876). The overall outcome is commonly regarded to be a long-term positive relationship based on a two-way commitment and mutual gratifications between parties, usually leader and employee.

Performance appraisal (Jawahar, 2007; Keeping & Levy, 2000; Pulakos & O’Leary, 2011) and heteronomy (Gagné & Bhave, 2011; Thompson & Prottas, 2006) have been associated with negative employee reactions (Pichler, 2019). Relatedly, control-oriented HRM is linked to perceived injustice (Iqbal et al., 2015), perceived unfairness (Kavanagh et al., 2007) and emotional exhaustion (M. Brown & Benson, 2003) plus other unwanted outcomes like rating halo

(Palmer & Loveland, 2008), rating errors and biases and low rating accuracy (Levy & Williams, 2004).

Relatedly, low-quality social exchanges are linked to several undesirable outcomes, like ‘disrespect, restrained communication, misunderstanding, non-supportiveness and low commitment’ (Othman et al., 2010, p. 341), due to ‘leader’s inaccurate assessment of group members’ and ‘a sense of unfairness’ (Othman et al., 2010, p. 341), and even a higher risk of suicide (Blais et al., 2021). Low-quality social exchanges are also related to turnover intention (Gerstner & Day, 1997). The mechanism behind is the antithesis of reciprocity. When no commitment to reciprocate with appropriate behavior is enabled through the relationship between teachers and their leader, chances are higher that teachers will want to quit their jobs.

Antecedents to turnover intention

Review papers have uncovered antecedents to turnover intention like ambiguity, role conflict (Ghapanchi & Aurum, 2011), role stressors, emotional exhaustion, depersonalization, family-work conflict (Park & Min, 2020), low-quality psychosocial work environment, intense workload, high stress levels (L. J. Hayes et al., 2012), low levels of transformational leadership style (Sun & Wang, 2017), and workplace incivility (Namin et al., 2021).

Identified antecedents among teachers include lack of supervisory, administrative and professional support (Borman & Dowling, 2008; Goddard & O’Brien, 2003; Skaalvik & Skaalvik, 2011; Tiplic et al., 2015) and communication (Borman & Dowling, 2008), little colleague collaboration (Martin et al., 2012), discipline challenges and tough working situations (Falch & Strøm, 2005; Skaalvik & Skaalvik, 2011; Smithers & Robinson, 2003), excessive workload (Smithers & Robinson, 2003), and burnout (Madigan & Kim, 2021).

The HRM approach does not seem to be among the most prevalent antecedents. Yet, several scholars (Arthur, 1994; Guchait & Cho, 2010; Rubel & Kee, 2015; Schopman et al., 2017; Yousaf et al., 2018) found that high-commitment HRM is negatively related to turnover intention. Hence, we expect that control-oriented HRM will be positively related to turnover intention, and hypothesize:

Hypothesis 1: *There is a positive relationship between control-oriented HRM and turnover intention, so that turnover intention is higher with control-oriented HRM than with high-commitment HRM.*

Low levels of autonomy have been identified as having a direct or indirect positive relationship with turnover intention (Dysvik & Kuvaas, 2013; Galletta et al., 2011; Ghapanchi & Aurum, 2011; Kim & Kao, 2014; Kim & Stoner, 2008; E. Wang et al., 2020). We find it likely that non-autonomy, termed heteronomy, will be positively related to turnover intention:

Hypothesis 2: *There is a positive relationship between heteronomy and turnover intention, so that employees’ intentions to quit their jobs are higher the less autonomy and the more heteronomy they have in their jobs.*

According to Kuvaas (2006) and Memon et al. (2019), performance appraisal satisfaction is negatively related to turnover intention. On a similar note, Poon (2004) found that PA dissatisfaction is related to increased turnover intention. We expect to find similar relationships, and hypothesize:

Hypothesis 3: *There is a positive relationship between PA dissatisfaction and turnover intention, so that employees' intention to quit their jobs are higher the less satisfied they are with the PA system.*

Literature reviews (Dulebohn et al., 2012; Gerstner & Day, 1997; L. J. Hayes et al., 2012) show that leader-member exchange quality is related to turnover intention. Several recent studies (Elanain, 2014; Huang et al., 2021; Li et al., 2018; Kim & Yi, 2019; Muldoon et al., 2018) confirm this. Dulebohn et al. (2012) specifically found LMX to be a prominent mediator between independent variables and turnover intention. Thus, we presume a similar mediating effect in our study. The following hypotheses are tested:

Hypothesis 4: *LMX mediates the relationship between control-oriented HRM and turnover intention, so that control-oriented HRM leads to low-quality LMX, which leads to higher turnover intention.*

Hypothesis 5: *LMX mediates the relationship between heteronomy and turnover intention, so that heteronomy leads to low-quality LMX, which leads to higher turnover intention.*

Hypothesis 6: *LMX mediates the relationship between PA dissatisfaction and turnover intention, so that PA dissatisfaction leads to low-quality LMX, which leads to higher turnover intention.*

Few studies examine LMX as a moderator of the relationship between antecedents and turnover intention, but LMX is found to moderate between turnover intention and job strain (Harris et al., 2008), person/job-organization fit (Boon & Biron, 2016), and diversity (Nishii & Mayer, 2009). We, thus, expect LMX to have a moderating role in our model. We hypothesize:

Hypothesis 7: *Low-quality LMX moderates the relationship between control-oriented HRM and turnover intention, leading to overall higher turnover intention.*

Hypothesis 8: *Low-quality LMX moderates the relationship between heteronomy and turnover intention, leading to overall higher turnover intention.*

Hypothesis 9: *Low-quality LMX moderates the relationship between PA dissatisfaction and turnover intention, leading to overall higher turnover intention.*

In addition, we find it likely that the hypothesized mediated relationships will vary with HRM approach. This indicates a first-stage moderated mediation (A. F. Hayes, 2018), so that HRM will moderate the mediated relationships between PA dissatisfaction and heteronomy, and consequently, on turnover intention. We hypothesize:

Hypothesis 10: *Control-oriented HRM moderates the indirect relationship between PA dissatisfaction and turnover intention, so that it is stronger with control-oriented HRM than with high-commitment HRM.*

Hypothesis 11: *Control-oriented HRM moderates the indirect relationship between heteronomy and turnover intention, so that it is stronger with control-oriented HRM than with high-commitment HRM.*

Gender differences

Verheul (2007, p. 11) outlines ‘masculine’ and ‘feminine’ leadership styles, with the latter bearing ‘a close resemblance to the commitment-oriented HRM system’. Studies show that women react more positively to high-commitment HRM than men, including the norm of reciprocity (Ayman & Korabik, 2010; Fiske et al., 2002; Shin et al., 2020), while men respond more positively to systems enhancing competition and opportunities (Konrad et al., 2000; Shin et al., 2020; Zhan et al., 2015). We hypothesize:

Hypothesis 12: *The positive relationship between control-oriented HRM and turnover intention is stronger among women than among men.*

Dysvik and Kuvaas (2013) found that women reacted with less turnover intention when given autonomy, but this was less pronounced among men. Job autonomy is generally found to have more positive consequences for women than for men (Halliday et al., 2018; Kalleberg et al., 2009; Lyness et al., 2012; Wheatley, 2017), partly due to ‘their greater household contribution’ (Wheatley, 2017, p. 307). Thus, women may react more negatively to heteronomy than men do. We hypothesize:

Hypothesis 13: *The positive relationship between heteronomy and turnover intention is stronger among women than among men.*

Several studies indicate that women are less dissatisfied and ‘more positive toward performance appraisals, especially lower or negative evaluations’ (Geddes & Konrad, 2003, p. 1497; Rana & Singh, 2021), possibly due to women being more self-critical (Feingold, 1994) and more realistic when evaluating their own performance (Fletcher, 1999). We expect this to be valid for our study, and hypothesize:

Hypothesis 14: *The positive relationship between PA dissatisfaction and turnover intention is stronger among men than among women.*

P. Q. Wang et al. (2017) did not find gender differences in the effect of LMX on turnover.

However, more women than men interrupt their career for family reasons (Lyness & Thompson, 1997), which may trigger low-quality LMX relationships (Frone et al., 1997; Netemeyer et al., 1996). We expect a similar pattern for the mediating role of LMX, and hypothesize:

Hypothesis 15: *The mediating effect of LMX on the relationship between control-oriented HRM and turnover intention is stronger among women than among men.*

Hypothesis 16: *The mediating effect of LMX on the relationship between heteronomy and turnover intention is stronger among women than among men.*

Hypothesis 17: *The mediating effect of LMX on the relationship between PA dissatisfaction and turnover intention is stronger among women than among men.*

Methodology

Research context, sample and procedure

In order to test the theoretical model and hypotheses, survey data from teachers in public sector upper secondary schools in Oslo, Follo, Romerike, and Troms and Finnmark counties were used. Studies on turnover intention and turnover in Norwegian schools generally rely on samples with respondents from different parts of the country; either countrywide (Tiplic et al., 2015), stratified samples based on regions (Skaalvik & Skaalvik, 2011) or single-region samples (Skaalvik & Skaalvik, 2007). The present study is based on a stratified sample with schools from three areas reflecting the dimensions defining Norwegian society in general and schools in particular, namely the urban-rural dimension and the north-south dimension. The areas were the capital of Oslo (urban, south), the areas of Follo and Romerike (suburban) and the county of Troms and Finnmark (rural, north).

A web-based questionnaire was distributed to 3414 teachers. One thousand two hundred and sixty-four responded, which represents a response rate of 37 percent. Excluding incomplete responses and responses from unrated teachers, 1055 responses were used in the analysis. The sample was balanced gender-wise (52.9% women, 47.1% men) as well as age-wise (normally distributed). A total of 58.7 percent held master's degrees or PhDs, 37.5 percent held bachelor's degrees, while 3.8 percent held no degree. These sample characteristics correspond with characteristics for the overall teacher population in Norway (Roksvaag & Texmon, 2012). All respondents were informed that the survey had been approved by NSD – Norwegian Centre for Research Data.

The survey items were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All the applied measures in the survey have been previously validated and published in peer-reviewed papers, showing satisfactory reliability and internal consistency at the time of measurement, including a Cronbach' alpha exceeding .70. A few of

the scales were adapted, resulting in slight changes from their original state. Scales that were originally worded in English were translated into Norwegian and then back to English (Brislin, 1986). Scales and items are shown in Appendix 1.

Measures

HRM approach

An adapted version of the high-commitment HRM scale by Lepak and Snell (2002) was used to measure the HRM approach, that is, the HRM approach through HRM systems or bundles of practices (Dyer & Reeves, 1995; Hauff et al., 2014). The scale was reverse coded to obtain a control-oriented HRM scale. A factor analysis using principal component factoring to determine item retention was performed. We performed the procedure on data from the pilot study using non-orthogonal direct oblimin rotation, followed by varimax rotation (Cattell, 2012; Tabachnick et al., 2007, p. 646). Only items with eigenvalue higher than 1 and a loading of .60 or higher were considered for inclusion. The Kaiser–Meyer–Olkin test for sampling adequacy revealed a value of .89, which Kaiser deemed as ‘meritorious’, meaning very good (Cerny & Kaiser, 1977; Kaiser, 1974, p. 35). The Bartlett’s test of sphericity showed significance at the .000-level. As shown in Table 1, items loaded on five factors, which corresponded with HR practices commonly associated with high-commitment HRM, such as ‘continuous training, high job security, empowerment, job rotation, a focus on learning and developmental feedback, variable pay, and an extensive benefits package’ (Boon & Kalshoven, 2014, p. 405; Lepak & Snell, 2002), termed empowerment, training and development, recruitment, performance appraisal, and compensation. In sum, the rotated factors captured 64.11 percent of the variance. The scale consisted of 16 items with a Cronbach’s alpha of $\alpha = .84$.

PA dissatisfaction

Satisfaction with the performance appraisal system was measured with the three item scale by Giles and Mossholder (1990), with a 5-point Likert scale instead of the original 6-point Likert scale. The scale reflected ‘complexity, implementation and follow-up factors’ measuring ‘system contextual aspects of performance appraisal’ (Giles & Mossholder, 1990, p. 373), and not supervisor behavioral aspects. The scale ranged from 1 (strongly disagree) to 5 (strongly agree). Sample items includes: ‘*Generally, I feel the organization has an excellent performance appraisal system*’. Reverse coding was applied for the scale to reflect dissatisfaction, and not satisfaction, with the PA system. The principal component analysis extracted only one component. The Bartlett’s test was significant at the .000-level, the value for the Kaiser–Meyer–Olkin test was .74, while the scale had a Cronbach’s alpha of $\alpha = .90$.

Heteronomy

Here, we used four items from the autonomy scale by Morgeson and Humphrey (2006), which reflect ‘the extent to which a job allows freedom, independence, and discretion to schedule work, make decisions, and choose the methods used to perform tasks’ (Morgeson & Humphrey, 2006, p. 1323). Reverse coding was applied to reflect heteronomy as the opposite of autonomy, and items were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is as follows: ‘*The job allows me to*

Table 1. Factor loading analysis based on a principal component analysis with varimax rotation performed with SPSS for 17 items from the high-commitment scale by Lepak and Snell (2002).

	Empower- ment	Performance appraisal	Compensation	Training & development	Recruitment
Here, employees can routinely make changes in the way that they perform their jobs.	.80				
Here, employees are empowered to make decisions.	.83				
Here, employees have jobs that include a wide variety of tasks.	.60				
Here, the recruitment/selection process focuses on their ability to contribute to our strategic objectives.					.61
Here, the recruitment/selection process focuses on selecting the best allround candidate, regardless of the specific job.					.76
Here, the recruitment/selection process places priority on employees' potential to learn.					.67
Here, training activities for employees are comprehensive.				.78	
Here, training activities for employees are continuous.				.81	
Here, training activities for employees strive to develop firm-specific skills / knowledge.				.76	
Here, performance appraisals for employees are based on input from multiple sources (peers, subordinates).		.66			
Here, performance appraisals for employees emphasize employee learning.		.71			
Here, performance appraisals for employees focus on their contribution to our strategic objectives.		.77			
Here, performance appraisals for employees include developmental feedback.		.69			
Here, compensation/rewards for employees include an extensive benefits package.			.81		
Here, compensation/rewards include employee ownership programs.			.82		
Here, compensation/rewards for employees provide incentives for new ideas.			.70		

plan how to do my work'. One component was extracted with a principal component analysis. The value for the Kaiser-Meyer-Olkin value was .78, while the Bartlett's test of sphericity revealed significance at the .000-level. The scale had a Cronbach's alpha of $\alpha = .77$.

Turnover intention, operationalized as the intention to quit the job and regarded as 'a direct precursor and an important predictor of employee turnover' (Poon, 2012, p. 1505), was measured with a five-item scale developed by Kuvaas (2008). Items were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A sample item is as follows: *'I will probably look for a new job in next year'*. A principal component analysis extracted only one component. The Kaiser-Meyer-Olkin value was .87, and the

Bartlett's test of sphericity was significant at the .000-level. The scale had a Cronbach's alpha of $\alpha = .91$.

Leader-member exchange (LMX)

The seven-item scale by Graen and Uhl-Bien (1995) was used to measure the dyadic relationship between leader and employee. This scale reflects dimensions like respect, trust, and mutual obligation, and a notion that the building of a 'partnership LMX is based upon these three factors' (Graen & Uhl-Bien, 1995, p. 237), as they are deemed to be core characteristics of a high-quality LMX relationship. A 5-point scale ranging from 'none' to 'very high' was used. A sample item is as follows: *Regardless of the amount of formal authority your leader has, what are the chances that he/she would 'bail you out' at his/her expense.* Two components were extracted by a principal component analysis, which corresponds with Graen and Uhl-Bien's argument that 'the LMX construct has multiple dimensions, but these dimensions are so highly correlated they can be tapped into with the single measure of LMX' (Graen & Uhl-Bien, 1995, p. 237). This was confirmed by the high value for Cronbach's alpha, which was $\alpha = .85$. Bartlett's test of sphericity was significant at the .000-level, while the Kaiser–Meyer–Olkin value was .83.

Control variables

We included control variables like gender, age, and received PA ratings. Age was measured in years, while gender was dummy-coded (female = 1, male = 0). Received PA rating was operationalized, as provided by respondents, with three levels: high, medium, and low. Following recommendations from Becker (2005) other control variables were not included in the model, as they turned out to have no significant effect on the dependent variables.

Path analysis was used to test the theoretical model and hypotheses. Path analysis facilitates simultaneous testing of entire models with several regression relationships, including direct and indirect relationships (Kline, 2015; MacKinnon, 2008). The method fits our model well, as it enables testing of both mediating and moderating effects, and, in particular, the mediating and moderating effects of leader-member exchange, and, thus, whether and how independent variables affect turnover intention through the quality of social exchanges.

Indirect effects were confirmed by bootstrapping (95% confidence intervals, $z = 5000$ samples) (Preacher et al., 2007). For mediation analyses, the contemporary approach recommended by Hayes (2018) and Meule (2019) was utilized instead of the causal step approach by Baron and Kenny (1986).

In order to test how well the model fit the data, several goodness-of-fit indices were utilized, including the goodness of fit index (GFI), root mean square error of approximation (RMSEA), and the comparative fit index (CFI) (T. A. Brown, 2015). Results revealed that the model fit was good: GFI = 1.10 (1 *df*), RMSEA = .010, CFI = 1.00 (Hair et al., 2010).

As data for all variables was provided by the same respondents at one point in time, we applied measures to counteract for possible common method bias. In addition to ex ante means like a large sample size, extensive questionnaire, varying measures, and a complex model (S.-J. Chang et al., 2010; Katou & Budhwar, 2006; Kintana et al., 2006), a common latent factor (CLF) test (Podsakoff et al., 2003) was conducted post ante using AMOS. The differences for paths in models with and without the CLF were all below .20, indicating very little common method bias in the data.

Results

Means, standard deviations, and correlations between variables are presented in Table 2. All independent variables are significantly correlated to the dependent variable turnover intention. The correlation is highest between the control-oriented HRM and PA dissatisfaction (Pearson's R -value = 0.43), and control-oriented HRM and low-quality LMX (Pearson's R -value = 0.41). The variance inflation factors (VIF) for the independent variables (1.467, 1.352, 1.261) are well below the recommended threshold value of 4.0 (Hair et al., 2010). Multicollinearity is not a problem in the study. Scores on the items control-oriented HRM ($W = 0.99$, $p = .001$), heteronomy ($W = 0.94$, $p = .001$), PA dissatisfaction ($W = 0.95$, $p = .001$), low-quality LMX ($W = 0.97$, $p = .001$), and turnover intention ($W = 0.87$, $p = .001$) were not normally distributed. However, this is as expected, since Norwegian teachers historically are little accustomed to such de-regulation-related practices.

Standardized regression coefficients for respondents in all schools, as shown in Table 3, show a significant, positive relationship between control-oriented HRM and turnover intention ($\beta = .317$, $p = .000$, adjusted $R^2 = .100$) so that turnover intention is higher with control-oriented HRM than with high-commitment HRM. Similarly, there is a significant relationship between heteronomy and turnover intention ($\beta = .295$, $p = .000$, $R^2 = .086$) so that teachers' intention to quit their jobs increases with heteronomy, as compared to autonomy. The relationship between PA dissatisfaction and turnover intention is significant, as well ($\beta = .222$, $p = .000$, $R^2 = .048$), implying that teachers' intention to quit their job is higher the less satisfied they are with the PA system they face in their schools. Hence, hypotheses 1, 2, and 3 were supported.

Hypotheses 4–11: Mediation, moderation, and moderated mediation

A hypothesized mediating effect of the LMX on the relationship between the independent variable and the dependent variable was tested with bootstrapping (95% confidence intervals, $z = 5000$ samples) in Amos 26.0. Results, as shown in Table 4 and Figure 1, provided support for most of the corresponding hypotheses. In a model with LMX as mediator, there is a significant indirect effect between control-oriented HRM and turnover intention ($\beta = .03$, $p = 011$), between heteronomy and turnover intention ($\beta = .05$, $p = 001$), and between PA dissatisfaction and turnover intention ($\beta = .03$, $p = 001$). LMX has a mediating effect on all three relationships, as each independent variable leads to low-quality LMX, which leads

Table 2. Means, standard errors and correlations.

	M	SD	1	2	3	4	5	6	7
(1) Control-oriented HRM	3.17	0.55							
(2) Rating dissatisfaction	2.19	1.02	.43***						
(3) Heteronomy	3.89	0.99	.49***	.34***					
(4) Low-quality LMX	3.55	0.77	.41***	.31***	.38***				
(5) Turnover intention	2.08	1.08	.32***	.22***	.29***	.29***			
(6) Received rating	2.75	0.41	.15***	.11***	.18***	.18***	-.12***		
(7) Gender (female)	0.53	0.50	.04	-.07*	.04	-.03	-.01	.02	
(8) Age	4.34	1.09	-.04	.07*	.06*	-.02	-.10***	-.09**	-.06*

Correlations = Pearson's R . *** $p < 0.01$ level; ** $p < 0.05$., two-tailed. $N = 1055$.

Table 3. Regression results.

	Control-oriented HRM			Heteronomy			PA dissatisfaction		
	All	Women	Men	All	Women	Men	All	Women	Men
Constant	20.325	21.160	19.518	18.791	19.119	18.441	12.999	12.563	13.577
Turnover intention	.317***	.335***	.299***	.295***	.305***	.283***	.222***	.195***	.256***
Adjusted R ²	.100	.110	.088	.086	.092	.078	.048	.036	.064
N	1055	558	495	1055	558	495	1055	558	495

Table 4. Direct, indirect and total effects. All schools.

Turnover intention		Direct effect	P	CI lower bound	CI upper bound	Indirect effect	P	Total effect	P
All (N = 1055)	PA dissatisfaction	.047	.146	-.016	.111	.031***	.001	.078*	.013
	Control-oriented HRM	.170***	.001	.090	.247	.029*	.010	.198***	.001
	Heteronomy	.123***	.001	.049	.199	.048***	.001	.171***	.001
Women (n = 558)	PA dissatisfaction	.024	.540	-.062	.106	.029*	.012	.053	.218
	Control-oriented HRM	.171***	.001	.069	.268	.056***	.001	.227***	.001
	Heteronomy	.123*	.015	.025	.226	.064***	.001	.187***	.001
Men (n = 497)	PA dissatisfaction	.085	.115	-.024	.189	.030*	.017	.116*	.028
	Control-oriented HRM	.167**	.008	.046	.284	.002	.903	.165**	.007
	Heteronomy	.124*	.044	.007	.234	.026	.060	.149**	.006

to turnover intention. Following Hayes (2018) and Meule (2019), hypotheses 4, 5, and 6 were supported.

Using the Process macro for SPSS, moderation and moderated mediation effects were tested. Low-quality LMX had no significant moderating effect on the relationship between control-oriented HRM and turnover intention ($.003, p = .263, [-.008, .002]$), between heteronomy and turnover intention ($.006, p = .467, [-.023, .010]$), or between PA dissatisfaction and turnover intention ($.005, p = .553, [-.013, .024]$). No moderation effects were found, which was not consistent with hypotheses 7, 8 and 9.

Testing for indirect conditional effects, termed moderated mediation, results revealed that control-oriented HRM significantly moderated the mediated relationship between PA dissatisfaction and turnover intention (Index of Moderated Mediation = $-.002$, BootSE = $.001$ [$.0001, .0045$]). Hence, hypothesis 10 was supported. The results should be treated with some care, since the lower bound of the bootstrapping-generated confidence interval is very close to zero. Control-oriented HRM did not, however, moderate the mediated relationship between heteronomy and turnover intention (Index of Moderated Mediation = $.001$, BootSE = $.001$ [$-.0008, .0033$]), indicating that hypothesis 11 was not supported.

Gender differences

The direct relationship between turnover intention and control-oriented HRM and heteronomy, respectively, were stronger among women than among men, as shown in Table 4. However, as the differences were minor, they were inside the confidence interval and not statistically significant. Hence, hypotheses 12 and 13 were not supported. As gender differences for the relationship between PA dissatisfaction and turnover intention were larger, the procedure for testing overlapping confidence intervals by Cumming (2009) was applied. Using 95% confidence interval estimates via bias-correlated bootstrapping (1000 re-samples),

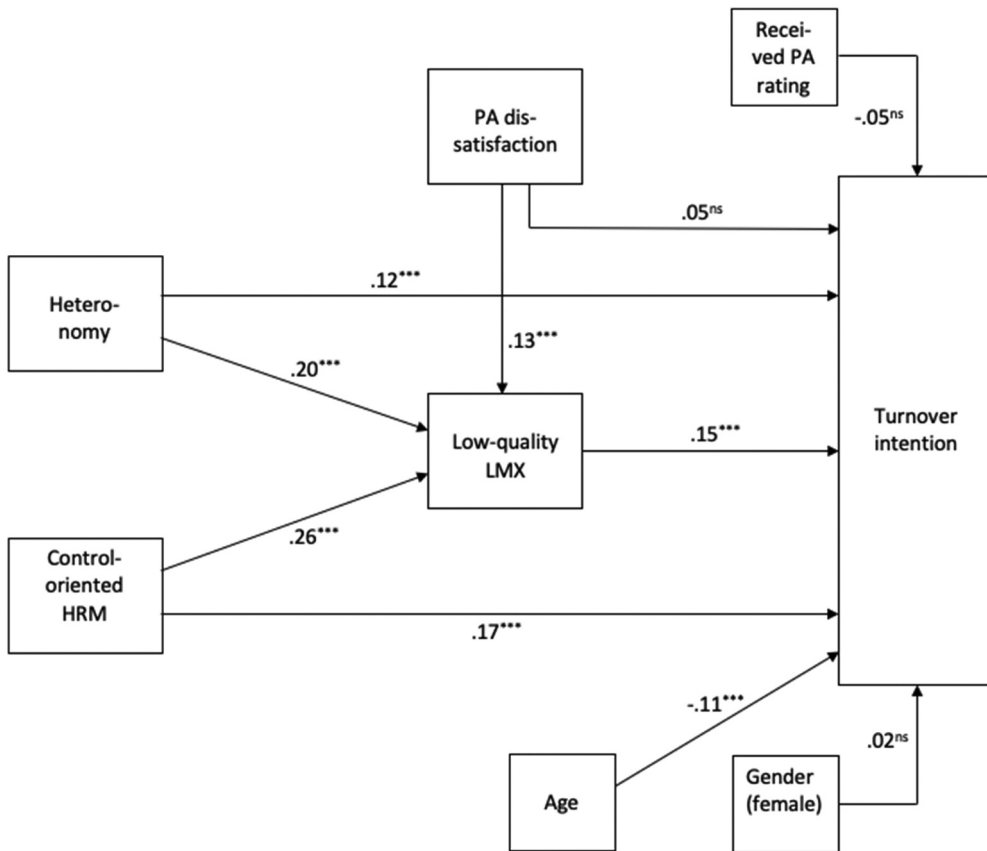


Figure 1. Full model with paths and effects for the whole sample.

the confidence intervals overlapped by more than 50% ($0.106 > 0.024$), implying that hypothesis 14 was not supported.

The indirect effect of control-oriented HRM on turnover intention was significant among women ($.06^{***}$), but not among men ($.003$). Hence, hypothesis 15 was supported. Similarly, the indirect effect of heteronomy was not significant among men ($.03$), but among women ($.007^{***}$), providing support for hypothesis 16. The significant indirect effect of PA dissatisfaction on turnover intention was almost identical for men and women ($.029^*$, $.030^*$), meaning that hypothesis 17 was not supported. [Figures 2 and 3](#) show the model paths and effects for men and women, respectively.

Discussion and conclusion

The findings, which are summed up in [Table 5](#), confirm our assumptions that control-oriented HRM, heteronomy, and PA dissatisfaction are antecedents to turnover intentions among teachers. As such, the study contributes to previous work on teachers' turnover intention. Turnover rates are typically high in public schools, and Norwegian schools are no exception (Tiplic et al., 2015). If we are concerned about these rates, we should make every effort to provide knowledge about the antecedents to turnover intention. It is only when we

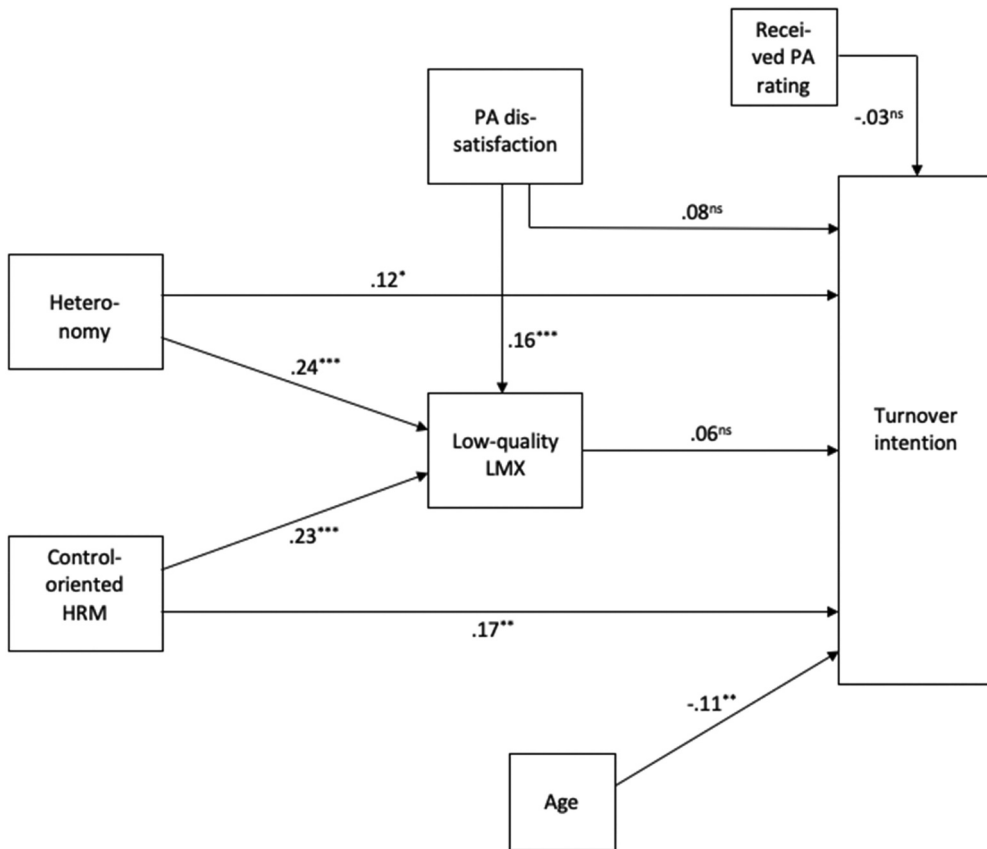


Figure 2. Full model with paths and effects for men only.

understand which factors affect turnover intention changes can be made that could make teachers want to stay longer in their jobs. In this respect, the findings highlight the significance of variables relating to de-regulation and marketization reforms. Whereas previous studies have focused on school context variables (Borman & Dowling, 2008; Martin et al., 2012; Skaalvik & Skaalvik, 2011; Smithers & Robinson, 2003), including collaborative cultures and the leadership styles of school principals (Sun & Wang, 2017), our study points to the need to consider the effects of the changes that have occurred in teachers' job situation following marketization and de-regulation reforms.

Certain theoretical implications of the findings should be emphasized. Firstly, the findings stand in some contrast to the underlying assumptions of strategic HRM. This type of HRM should contribute strongly to organizational goal achievement through a macro level focus, strong fit between HRM practices, and emphasis on organizational performance outcomes (Lepak & Shaw, 2008). Although employee well-being is given less attention, strategic HRM is meant to improve the management of human resources and actually promote employee retention (Legge, 1995). Our study, however, suggests the opposite scenario when teachers perceive the HRM approach to be control-oriented: They are more likely to think about leaving their jobs when they perceive the HRM approach to be control-oriented rather than commitment-oriented. Similarly, turnover intention increases the more teachers experience

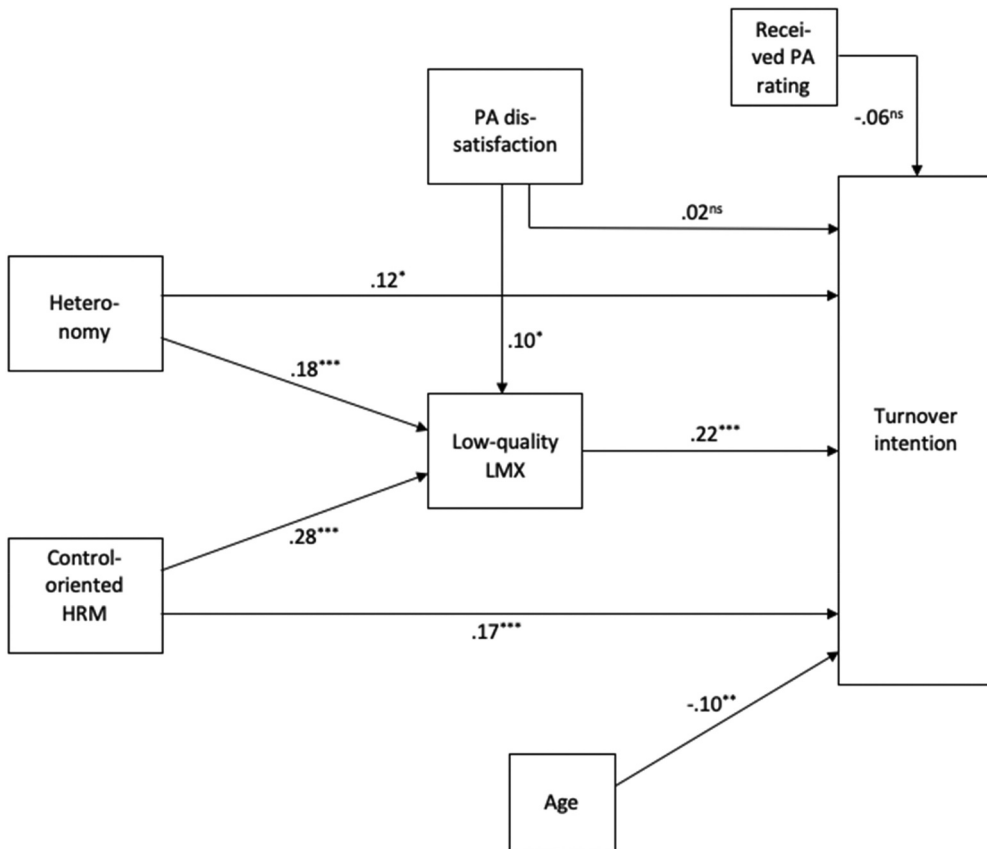


Figure 3. Full model with paths and effects for women only.

a lack of autonomy in their jobs. Because heteronomy is likely to exist in schools dominated by control-oriented HRM approaches, our study extends previous research by suggesting that turnover intention should be understood in light of the type of prevailing HRM approach as well as the degree of autonomy afforded to teachers. And given that both the control-oriented HRM approaches and heteronomy arguably result from marketization and de-regulation reforms in public school systems, the findings point to an important connection between these reforms and turnover intention.

Secondly, and perhaps most importantly, the findings highlight the pivotal role of leader-member exchange relationships in producing turnover intentions. Consistent with previous studies from non-school settings (Elanain, 2014; Huang et al., 2021; M. H. Kim & Yi, 2019; Muldoon et al., 2018), we find that control-oriented HRM, heteronomy, and dissatisfaction with performance rating systems stimulate turnover intention because they first generate low-quality social exchange relationships between teachers and leaders. In fact, the role of the social exchange may *explain* why these variables get teachers to want to quit their jobs. If treated well, they should reciprocate with what management see as desirable behavior, for example, keeping their jobs. In this case, teachers probably perceive that they are not being treated well when they, in the name of de-regulation and marketization, are being controlled, rated, and stripped of autonomy. As a result, they do not reciprocate with desirable behavior, such as

Table 5. Hypothesis testing summary.

Hypothesis 1	Control-oriented HRM → turnover intention	Confirmed
Hypothesis 2	Heteronomy → turnover intention	Confirmed
Hypothesis 3	PA dissatisfaction → turnover intention	Confirmed
Hypothesis 4	Control-oriented HRM → LMX → turnover intention	Confirmed
Hypothesis 5	Heteronomy → LMX → turnover intention	Confirmed
Hypothesis 6	PA dissatisfaction → LMX → turnover intention	Confirmed
Hypothesis 7	Control-oriented HRM → turnover intention	Not confirmed
	↑ LMX	
Hypothesis 8	Heteronomy → turnover intention	Not confirmed
	↑ LMX	
Hypothesis 9	PA dissatisfaction → turnover intention	Not confirmed
	↑ LMX	
Hypothesis 10	Control-oriented HRM moderates the indirect relationship between PA dissatisfaction and turnover intention	Confirmed
Hypothesis 11	Control-oriented HRM moderates the indirect relationship between heteronomy and turnover intention	Not confirmed
Hypothesis 12	The positive relationship between control-oriented HRM and turnover intention is stronger among women than among men.	Not confirmed
Hypothesis 13	The positive relationship between heteronomy and turnover intention is stronger among women than among men.	Not confirmed
Hypothesis 14	The positive relationship between PA dissatisfaction and turnover intention is stronger among men than among women.	Not confirmed
Hypothesis 15	The mediating effect of LMX on the relationship between control-oriented HRM and turnover intention is stronger among women than among men.	Confirmed
Hypothesis 16	The mediating effect of LMX on the relationship between heteronomy and turnover intention is stronger among women than among men.	Confirmed
Hypothesis 17	The mediating effect of LMX on the relationship between PA dissatisfaction and turnover intention is stronger among women than among men.	Not confirmed

staying in their jobs. Hence, through the principle of reciprocity, the teacher–leader relationship may arguably be seen as a social exchange.

The relationship between each of the independent variables is not significantly stronger among women than among men. The mediating effect of LMX, however, is significantly stronger among women than men, indicating that control-oriented HRM and heteronomy disturb the social exchange relationships more strongly for female than for male teachers. When facing de-regulation and marketization, female teachers' relationship with their leader may deteriorate more easily than is the case for male teachers. This, too, may be explained by the principle of reciprocity. Female teachers may arguably be more sensitive to the nature of the relationships with their superiors than male teachers are and may to a greater extent perceive that they are not treated well when exposed to control and lack of autonomy. Consequently, they will not reciprocate with desirable behavior such as staying in their jobs.

In addition to these theoretical implications, the study also has important practical implications for schools that want to prevent turnover. Above all, the findings suggest that schools should make an effort to emphasize commitment-oriented rather than control-oriented HRM, teacher autonomy rather than heteronomy, and satisfaction with rating systems rather than dissatisfaction. By doing so, turnover intention should be reduced both directly and indirectly through the formation of high-quality leader-member exchange relationships. Leaders should particularly be aware of the importance attached by female teachers to such relationships. Making these changes might seem somewhat counter to prevailing conceptions of what currently constitutes 'good' management practices, as control-oriented philosophies have become dominating not only within marketization and de-

regulation paradigms in the public sector, but also in business settings (Beer et al., 2015). However, in the competitive Oslo school system where funding is directly related to the number of admitted students, schools should have strong incentives to retain as many talented teachers as possible.

Limitations and future research

This study has limitations, including possible validity issues due to self-reported data collected at one point in time. Relatedly, a common method bias might affect the data, but was not found. Reverse causality regarding LMX cannot be ruled out: We found that the independent variables affect LMX quality, but LMX quality might affect employees' perception of the HRM approach, PA system, and autonomy level.

Other scholars are encouraged to conduct studies including actual turnover, as the ratio between turnover intention and turnover among teachers is little explored. Other options are to include different classifications of HRM systems or different types of PA as possible antecedents to turnover intention.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Ethics approval

The collection of the survey data used in the present paper was approved by NSD – Norwegian center for research data. The project number is 53,462.

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