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Citation for published version (APA):

Schreurs, B. H. J., Günter, H., van Emmerik, I. H., Notelaers, G., & Schumacher, D. A. T. (2015). Pay level satisfaction and employee outcomes: the moderating effect of autonomy and support climates. *International Journal of Human Resource Management*, 26(12), 1523-1546. <https://doi.org/10.1080/09585192.2014.940992>

Document status and date:

Published: 04/07/2015

DOI:

[10.1080/09585192.2014.940992](https://doi.org/10.1080/09585192.2014.940992)

Document Version:

Publisher's PDF, also known as Version of record

Document license:

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Download date: 04 Dec. 2019



The International Journal of Human Resource Management

ISSN: 0958-5192 (Print) 1466-4399 (Online) Journal homepage: <https://www.tandfonline.com/loi/rjih20>

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To cite this article: Bert Schreurs, Hannes Guenter, I.J. Hetty van Emmerik, Guy Notelaers & Désirée Schumacher (2015) Pay level satisfaction and employee outcomes: the moderating effect of autonomy and support climates, The International Journal of Human Resource Management, 26:12, 1523-1546, DOI: [10.1080/09585192.2014.940992](https://doi.org/10.1080/09585192.2014.940992)

To link to this article: <https://doi.org/10.1080/09585192.2014.940992>



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Pay level satisfaction and employee outcomes: the moderating effect of autonomy and support climates

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The present study examined autonomy climate (AC) and support climate (SC) as moderators of the relationship between pay level satisfaction (PLS) and employee outcomes (i.e. job satisfaction, affective commitment and intention to stay). Survey data were collected from 5801 Belgian employees, representing 148 units. The hypotheses derived from distributive justice theory and from research on the meaning of money received partial support. Multilevel analyses revealed that AC buffered the negative effects of low PLS on all three outcomes, and that SC exacerbated the negative effects of low PLS on intention to stay. Theoretical and practical implications of this differential moderating effect are discussed.

Keywords: benefits; compensation; meaning of money; multilevel; work climate

Employees who are satisfied with their salary are more productive, more committed and less likely to withdraw from the company (Currall, Towler, Judge, & Kohn, 2005; Kinicki, McKee-Ryan, Schriesheim, & Carson, 2002; Williams, McDaniel, & Nguyen, 2006). Pay level satisfaction (PLS), defined as ‘an individual’s satisfaction with his or her base pay’ (Miceli & Lane, 1991, p. 245), to a large extent results from employees comparing their actual pay level with the pay level they think they are entitled to. What employees think they deserve depends on several factors, including employees’ perceived input (e.g. tenure and work effort) and the perceived input and pay levels of referent others (e.g. coworkers). The fact that PLS depends on different factors explains why pay level and PLS are only modestly correlated (Williams, McDaniel, & Nguyen, 2006). Therefore, companies cannot simply improve PLS by throwing money at the problem, and low PLS may well be an inevitable part of organizational life.

An important question then is: What can companies do to limit the adverse impact of low PLS? In this study, we suggest that low PLS is less detrimental to employees working in units (i.e. departments) that have an autonomous and a support climate (SC). We propose that, similar to pay level, working climates characterized by high levels of autonomy and social support instill a sense of competence and respect in employees, and may therefore compensate for unsatisfying pay levels. We base this proposition on the literature on distributive justice and the meaning of money (Adams, 1965; Hakonen, Maaniemi, & Hakonen, 2011; Lea & Webley, 2006; Mitchell & Mickel, 1999; Zhang, 2009). We focus on three outcomes that have been theorized as important effects of PLS: job satisfaction, affective commitment and turnover intention (Williams, Brower, Ford, Williams, & Carraher, 2008; Williams et al., 2006).

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Our arguments and findings contribute to the literature in three specific ways. First, despite its importance, systematic research on moderators of the relationship between PLS and employee outcomes is scarce (for an exception, see Williams et al., 2006). While it may be difficult for companies to prevent low PLS, companies can limit its negative implications. One means for doing so is to create work environments (i.e. work climates) that reduce the negative effects of low PLS; this would have significant practical value. Second, we make a theoretical contribution by bringing together two streams of literature which have rarely been connected to each other. One is about distributive justice (Adams, 1965); the other about the meaning of money (Hakonen et al., 2011; Lea & Webley, 2006; Mitchell & Mickel, 1999; Zhang, 2009). The integration of both literature allows us to theorize about when low PLS may not be detrimental. Integrating both literature can also further our understanding of the compensatory role of the work environment. Third, with few exceptions, scholars have studied autonomy and social support as perceived characteristics of a person's job. This approach has been criticized for its subjectivity and for its inaccurate reflection of the work environment (Bacharach & Bamberger, 2007; Spector, 1992). In this study, we follow an alternative approach that consists of aggregating individual perceptions of autonomy and social support (Daniels, 2006). To the extent that employees share the same perceptions, aggregated measures of autonomy and social support reflect a work climate. Aggregated measures are considered to be more objective than self-report measures and to more accurately represent the work environment (Kuenzi & Schminke, 2009).

Theoretical background and hypotheses

PLS and employee outcomes

The relationship between PLS and employee outcomes can be theoretically understood by employees' reactions to distributive justice (Tremblay & Roussel, 2001). Distributive justice has been defined as 'the perceived fairness of the resources received' (Cropanzano & Ambrose, 2001, p. 121), and is commonly equated with individuals' reactions to economic allocations, such as pay level, pay raise or job offer. The concept of distributive justice is grounded in equity theory (Adams, 1965). According to equity theory, employees determine whether they have been fairly rewarded in the social exchange relationship with the organization by formulating a ratio of outcomes (e.g. pay level) to inputs (e.g. work effort, tenure, experience and performance). When determining this ratio, employees do not rely on the absolute outcome-to-input ratio, but compare their own ratio against the outcome-to-input ratio of a referent source (e.g. co-workers). If outcome-to-input ratios correspond, employees believe the resources to be fairly distributed. If the ratios are perceived to be unequal, then inequity exists and resource distribution is perceived to be unfair.

When experiencing inequity (distributive injustice), employees may feel distressed and may try to restore the input-to-output ratio. To restore the ratio, employees may try several things, such as trying to increase own outputs, decreasing one's input, increasing other's input or decreasing other's output. While it is theoretically possible to influence all four, it may be most feasible to reduce own inputs. One common way to reduce own inputs and, hence restore the balance, is by psychologically withdrawing from the social exchange relationship with the organization. Psychological withdrawal occurs when individuals mentally distance themselves from a stress-causing work environment (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Psychological distance can take on many forms including negative job attitudes and reduced work effort (Rosse & Miller, 1984). Previous

research has generally supported the relationship between distributive injustice and psychological withdrawal. Distributive injustice, for example, associates with heightened job dissatisfaction, reduced organizational commitment and increased turnover (Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Haar & Spell, 2009). Although distributive justice is not synonymous with PLS, both constructs are strongly related and have similar consequences (Motowidlo, 1983; Tremblay & Roussel, 2001; Vandenberghe & Tremblay, 2008; Williams et al., 2006). Consistent with this prior research, we expect PLS in this study to have a positive association with job satisfaction, organizational commitment and intention to stay.

Ways to alleviate the negative effects of low PLS

PLS is not the only means of building a committed workforce. According to distributive justice theory, companies can use different strategies to build high commitment (see Folger & Cropanzano, 1998), including altering performance requirements (input) and influencing the selection of comparison others. In practice, however, the only feasible option seems to be to increase the wages (outcomes) of dissatisfied employees until they no longer feel disadvantaged. Yet, many companies simply cannot afford to increase wages because of constrained compensation budgets. For those who can, throwing money at the problem may still not solve the problem: granting a pay raise to some employees but not to others is seen as a serious violation of procedural justice (Leventhal, 1980; Leventhal, Karuza, & Fry, 1980), and may generate negative responses in those who have been disregarded. Accordingly, it may be very difficult, if not impossible, for organizations to meet the pay level expectations of all employees; some instances of low PLS therefore may well be an inevitable fact of organizational life.

What then can companies do to attenuate the negative effects of low PLS? To answer this question, we first need to know more about why people care so much about their pay level (Rynes, Gerhart, & Minette, 2004). Two perspectives dominate the field: the instrumental and the symbolic perspective. The instrumental perspective sees pay level, and money in general, as a means to an end (Lea & Webley, 2006). It holds that people care about their pay level because it can be exchanged for desired goods and services (Furnham & Argyle, 1998).

Pay level, however, does not only have an instrumental function, it is also endowed with symbolic meaning (Hakonen et al., 2011; Lea & Webley, 2006; Mitchell & Mickel, 1999; Thierry, 2001; Zhang, 2009). According to the symbolic perspective, money – and hence pay level – may signify its owner's competence (Hakonen et al., 2011; Vohs, Mead, & Goode, 2008; Zhang, 2009). Competence describes the belief in one's own capacity to perform work activities successfully (Seibert, Wang, & Courtright, 2011). In Western society, money is seen as an indicator of a person's competence in providing a comfortable life for himself or herself and his or her family (Prince, 1993). Similarly, pay level can be seen as an indicator of a person's professional competence and career success (Judge, Cable, Boudreau, & Bretz, 1995; Ng, Eby, Sorensen, & Feldman, 2005). This idea is consistent with cognitive evaluation theory (CET, Deci, 1975; Ryan, Mims, & Koestner, 1983). CET hypothesizes that extrinsic rewards, such as pay level, convey competence-related information about the employee and thereby may increase his or her intrinsic motivation.

Money also carries an important value for the assessment of one's standing in a group (Hakonen et al., 2011). Lea and Webley (2006), for instance, argued that money is an indicator of achievement, respect, freedom or power, and a potent symbol of 'power

relationships' (p. 171). Blader and Tyler (2009) recently corroborated this point by demonstrating that economic outcomes, including pay level, inform organizational members about the nature and quality of their group membership. A high pay level leads employees to identify with their group. Conversely, a low pay level indicates that an employee lacks standing among peers (Lind & Tyler, 1988; Tyler & Smith, 1998).

From this it follows that – all else being equal – employees who are dissatisfied with their pay level generally feel less competent and respected than employees who are satisfied with their pay level. It can be further argued that the negative effects of low PLS will be less pronounced for employees who derive their feelings of competence and being respected from another source (Zhang, 2009). The work environment may be one such source.

Work climate as substitute for low PLS

We examine the possibility that characteristics of the work environment compensate for a dissatisfying pay level. This idea is grounded in the assumption that, similar to pay level, one's work environment is endowed with symbolic meaning. To the extent that the work environment signifies that employees are valued and respected, it may act as a substitute for PLS. In this study, we focus on two characteristics of the work environment: autonomy and social support. We treat autonomy and social support as properties of the employee's work unit. That is, individual perceptions of autonomy and social support are aggregated to reflect an autonomy climate (AC) and SC (Schneider, White, & Paul, 1998). Our interest in unit-level AC and social SC is due to the fact that for many years, autonomy and social support have been found to buffer the negative effects of workplace stressors (Schreurs, Van Emmerik, Guenter, & Germeys, 2012; Van Emmerik, Euwema, & Bakker, 2007). However, the majority of this research investigates individuals' perceptions of autonomy and support, which leaves unaddressed the question of how autonomy and support at the unit level (i.e. AC and SC) influence individual-level relationships (Bacharach & Bamberger, 2007). Before discussing the assumed compensating role of AC and SC, we will first define these constructs and explain our rationale behind aggregating individual data to the unit level.

Autonomy climate

Scholars have used different definitions to describe what they mean with autonomy (e.g. Day, Sibley, Scott, Tallon, & Ackroyd-Stolar, 2009; Humphrey, Nahrgang, & Morgeson, 2007; Morgeson & Humphrey, 2006). Most commonly, autonomy is conceptualized, following Hackman and Oldham's (1975) job characteristics model, as 'the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out' (p. 162). Two facets of work autonomy are highlighted in this definition: control over work schedules and work procedures. Work scheduling refers to both the pace and sequencing of work – how fast tasks are done and with which tasks to begin (Breugh, 1985). Work procedures refer to the methods and means to reach work goals – how to go about a task (Breugh, 1985). In essence, autonomy indicates the level of control a job incumbent has in carrying out his or her work. The importance of job control is also evident in other work characteristic models, such as the job demand–control (–support) model (Johnson & Hall, 1988; Karasek, 1979), the vitamin model (Warr, 1987) and, more recently, the job demands–resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

In all these models autonomy is theorized to have beneficial effects on employee outcomes, which is supported by available empirical evidence. For example, Spector (1986), in a meta-analysis of over 100 US samples, demonstrated that job control was associated with higher job satisfaction and commitment, and with lower turnover intentions.

All work characteristics models share the idea that autonomy is less an attribute of individuals than it is a contextual variable. If members of an organization perceive attributes of the environment in the same way (i.e. as providing autonomy), this would indicate that these attributes describe a property of the environment. To the extent that perceptions align, they – once aggregated – would reflect a given work climate. In our case, this would reflect an AC. AC describes a work climate where employees feel encouraged to ‘engage in greater levels of decision-making, enhancing discretion and control’ (Hirst et al., 2008, p. 1344). This involves that employees share the perception that the setting of work goals, scheduling of tasks and prioritization of tasks are somewhat in their hands.

Support climate

Social support is a widely used term that describes the functions that significant others (e.g. supervisors, coworkers, family members and friends) play (Thoits, 1995). Social support refers to respect and consideration from others and typically associates with a sense of being a valuable member of a group (Wu & Hu, 2009). At work, coworkers provide an important source of social support because coworker relationships account for the largest part of workplace interactions (Chiaburu & Harrison, 2008). While coworkers can provide different types of support (e.g. emotional, appraisal and informational support), these various dimensions are highly correlated which is why we assess them together (Thoits, 1995). To the extent that employees share the perception that coworkers provide support, one can speak of a work unit with a high SC. SC, more formally, describes the shared perception that coworkers of a particular unit ‘provide both emotional and instrumental support, or in other words, that help seeking and giving is the norm’ (Bacharach, Bamberger, & Vashdi, 2005, p. 623).

The moderating effect of AC and SC

Having defined AC and SC, we now turn to the question of why these climates may influence the relationship between PLS and employee outcomes (i.e. job satisfaction, affective commitment and intention to stay). Drawing from the symbolic perspective of pay (Hakonen et al., 2011; Lea & Webley, 2006; Vohs et al., 2008; Zhang, 2009), we argue that a strong unit AC may increase feelings of competence in employees. This is because autonomy reflects professional status and is experienced as a positive, indirect supervisory appraisal of one’s competence (Schwalbe, 1985). While employees working in units with high autonomy may feel trusted, employees working in low-AC units may feel that their competencies and skills are not adequately appreciated by the organization (Nauta, Liu, & Li, 2010). Seibert et al.’s (2011) meta-analytic findings confirm the idea that work design characteristics (such as autonomy) positively associate with feelings of competence, and more generally, psychological empowerment.

From this it follows that employees working in high-AC units may be less negatively affected by low PLS because high-AC provides employees with a sense of competence. Employees working in units with low-AC, in contrast, lack the indirect, climate-induced

affirmation that the organization appreciates their competence. Employees, working in units that lack autonomy, will thus react more strongly to low PLS, in that their satisfaction, commitment and intention to stay will be more strongly affected. Specifically, we submit the following:

Hypothesis 1: AC moderates the influence of PLS on employee outcomes, so that low PLS is less negatively associated with job satisfaction (H1a), affective commitment (H1b) and intention to stay (H1c) in units characterized by higher AC.

We expect SC to attenuate the effects of low PLS in ways different from AC. In other words, we expect both AC and SC to have significant and unique effects on the association of PLS and employee outcomes. We argue that low PLS may influence employees' outcomes less negatively in units with higher climates of coworker support. In high-SCs, seeking and providing support is taken-for-granted in the respective unit instead of being a privilege granted only to certain employees (Bacharach & Bamberger, 2007). Therefore, high-SCs are likely to instill feelings of being accepted by other unit members. When people feel accepted, they also feel respected (Blader & Tyler, 2009). Accordingly, we submit that employees who feel respected because they work in a high-SC are less likely to question their standing in the group when experiencing low PLS. In contrast, employees working in units poor in SC may feel a stronger sense of disrespect when PLS is low, which may decrease satisfaction, commitment and intention to stay with the organization.

Furthermore, Bacharach and Bamberger (2007) suggest that employees may be more receptive to support offered in a context where providing and receiving support is the norm, not the exception. This may indicate that employees working in units rich in support may find it easier to address colleagues and coworkers when unsatisfied with their pay level. Coworkers, in turn, should be more likely to provide advice and help under such condition of high-SC, which should attenuate the negative implications of low PLS.

This idea that coworker SC can buffer the effects of low PLS is in line with cross-domain buffering reasoning (Duffy, Ganster, & Pagon, 2002). Duffy et al. (2002) suggested and found that social support in one domain (i.e. supervisor) can help alleviate negative effects associated with another domain (i.e. coworkers). Similarly, we expect peer SC to mitigate the negative implications that may arise when employees are not satisfied with their pay level, a factor not in the hands of coworkers. Accordingly, we submit that, by facilitating a sense of being respected and valued, high SC reduces the negative implications of low PLS in terms of job satisfaction, affective commitment and intention to stay. More specifically, we submit the following:

Hypothesis 2: SC moderates the influence of PLS on employee outcomes, so that low PLS is less negatively associated with job satisfaction (H2a), affective commitment (H2b) and intention to stay (H2c) in units characterized by higher SC.

Method

Data and sample

Between 2003 and 2006, a total of 9363 questionnaires were collected in 30 Belgian companies to investigate the quality of working life, including employee well-being and stress. The overall response rate to these surveys was approximately 70%. Participation among employees was voluntary and anonymity was guaranteed. Data collection took

place under supervision of the former Research Directorate for the Improvement of Working Conditions, a research institution of the Federal Department of Work in Belgium.

In 20 of the 30 companies, PLS was added to the survey upon request of both the unions and the employer. The extended version of the questionnaire was administered to 6348 employees. List-wise deletion of respondents with one or more missing values on the study variables ($n = 547$) resulted in a final sample of 5801 respondents (i.e. 91.4% of the individuals who participated), representing 148 departments (division of a larger company dealing with its own specific area of activity, e.g. human resources, sales and marketing) within 20 companies. The average number of respondents per organization was 290 (range = 37–879). The average number of respondents per department was 78 (range = 4–314). The mean age of the respondents was 40.53 years ($SD = 10.42$). Forty-three percent of the respondents in the final sample indicated that they were female. Twenty-two percent indicated that they had supervisory responsibilities. Respondents represented three broad sectors: government (37%), services (34.7%) and industry (28.4%). The sample is not fully representative of the Belgian working population, due to the overrepresentation of white-collar workers. Nevertheless, it is a heterogeneous sample covering a wide range of occupations and industries within Belgium.

Measures

All the scales were presented in Dutch and were taken from the Dutch version of the questionnaire on the experience and evaluation of work (VBBA; Van Veldhoven, & Meijman, 1994). This questionnaire has been used widely in previous research (e.g. Van Veldhoven, 2005; Van Yperen & Snijders, 2000).

Department-level variables

AC was assessed using 11 items asking respondents to rate the degree of latitude they possess in making job-related decisions, such as what tasks to perform and how the work is to be done. A sample item is 'I have freedom in carrying out my work activities' (1, *never*; 4, *always*). A principal components analysis showed that the 11 items represented a single component, explaining 52% of the variance. Cronbach's alpha was 0.90.

We conceptualized AC as individuals' shared perceptions of autonomy within the department. AC is a contextual variable, and is assumed to measurably differ across departments (Bliese & Jex, 2002). In order to meaningfully aggregate individual responses to the department level, sufficient agreement within departments needs to be demonstrated. Prior to aggregating, we first assessed the within-department agreement for autonomy by means of the average deviation ($AD_{MD(J)}$, AD henceforth) (Burke & Dunlap, 2002). The AD index is computed by finding the average absolute deviation of each rating from the mean of the group rating (i.e. department) and then averaging the deviations. Smaller scores indicate better agreement. For a Likert-type four-point scale, scores need to be below the threshold of 0.67 to indicate agreement (Burke & Dunlap, 2002). The mean AD obtained for autonomy was 0.60, indicating sufficient within-department agreement. Next, we assessed the within-department agreement in autonomy by means of the $r_{wg(J)}$ -index (James, Demaree, & Wolf, 1984), using a uniform null distribution. Higher scores indicate better agreement. We obtained an $r_{wg(J)}$ -value of 0.90, which is well above the conventionally accepted value of 0.70 (LeBreton, Burgess, Kaiser, Atchley, & James, 2003). Next, we carried out a one-way analysis of variance (ANOVA) to ascertain whether there were significant mean level differences between departments in

terms of autonomy. The observed F value was significant, $F(147, 5653) = 8.94$, $p < 0.001$. We then applied the intra-class coefficients ICC (1) and ICC (2) to the ANOVA model (Bliese, 2000). ICC (1) was 0.17, indicating that 17% of the variance in individual perceptions of autonomy can be explained by departmental membership. This value represents a medium to large effect (LeBreton & Senter, 2008). ICC (2) was 0.89, well above the critical value of 0.70. This value indicates that departments can be reliably differentiated in terms of average levels of autonomy (Klein & Kozlowski, 2000). Together, these indices provided sufficient justification for aggregating individual autonomy perceptions to the department level.

SC was assessed via five items measuring the extent to which a job provides opportunities for getting assistance and advice from coworkers (Karasek, 1979) and for making friends at work (Sims, Szilagyi & Keller, 1976). A sample item is 'I can count on my colleagues when I come across difficulties in my work' (1, *never*; 4, *always*). A principal components analysis showed that the five items represented a single component, explaining 50% of the variance. Cronbach's alpha was 0.75. We conceptualized SC as individuals' shared perceptions of social support within the department. Similar to autonomy, social support was treated as a contextual variable, and assumed to significantly differ across departments (Bliese & Jex, 2002). Aggregation statistics were computed to validate aggregation to the department level. The mean AD obtained for social support was 0.54, which is lower than the critical value of 0.67 for a Likert-type four-point scale, indicating sufficient within-department agreement. (Burke & Dunlap, 2002). Using a uniform null distribution, we obtained a $r_{wg(J)}$ value of 0.89, which is well above the conventionally acceptable value of 0.70 (LeBreton et al., 2003). An ANOVA with department as factor had a significant F value for social support, $F(147, 5653) = 3.49$, $p < 0.001$. ICC (1) was 0.06, representing a small but substantial effect (LeBreton & Senter, 2008). ICC (2) was 0.71, just above the critical cut-off of -0.70 . Together, these indices provided sufficient justification for aggregation of individual perceptions of social support to the department level.

Individual-level variables

PLS was measured using five items on a Likert-type four-point scale (1, *never*; 4, *always*). Item content goes back to Smith, Kendall, and Hulin (1985) and Hackman and Oldham (1975). Respondents were asked to evaluate their current salary in several ways, including social comparison. The items read as follows: (1) 'I think that my company pays good salaries' (2) 'I can live comfortably on my pay' (3) 'I think that my salary is satisfactory for the work that I do' (4) 'I think that I am fairly paid in comparison with others within this department' (5) 'I think that the pay in my company is lower than in comparable firms'. A principal components analysis showed that the five items represented a single component, explaining 62% of the variance. Cronbach's alpha was 0.83.

Job satisfaction was measured using nine items tapping the extent to which respondents find pleasure in their job. Items were rated using a dichotomous answering category (0, *no*; 1, *yes*) and were summed to form an index ranging from 0 to 9, with high scores reflecting more job satisfaction. A sample item is 'I really enjoy my work'. For a scale composed of dichotomous items, the most appropriate index of internal consistency is the Kuder-Richardson formula 20 (KR-20; Nunnally & Bernstein, 1994). In the present sample, this equivalent to Cronbach's alpha was 0.85.

Affective commitment was assessed using five items asking respondents to rate their emotional attachment to, identification with, and involvement in the organization (Allen &

Meyer, 1990). Items were rated using a dichotomous answering category (0, *no*; 1, *yes*) and were summed to form an index ranging from 0 to 5, with high scores reflecting more affective commitment. A sample item is 'I really feel very closely involved with this organization'. KR-20 was 0.72.

Intention to stay was assessed using five items asking respondents to rate the likelihood that they will permanently leave their organization at some point in the near future. Items were rated using a dichotomous answering category (0, *no*; 1, *yes*). All items were reversed to reflect intention to stay, and were summed to form an index ranging from 0 to 5, with high scores reflecting higher intention to stay. A sample item reads 'Next year, I plan to look for a job outside this organization'. KR-20 was 0.76.

Control variables

In all analyses, gender, age, supervisory responsibility (i.e. whether one has subordinates or not), sector (industrial sector as reference category) and department size were controlled for because of their potential link with the outcome variables considered in this study (e.g. Bedeian, Ferris, & Kacmar, 1992).

Data analyses

We used multilevel random coefficient modeling for analyzing the data, because it accounts for the dependent nature of the measurements at the lower level (Hox, 2010). Specifically, we employed R version 2.13.1 to estimate three models (one for each outcome variable) with two levels: individuals (Level 1) and departments (Level 2). We also tested a three-level model with individuals nested within department and departments nested within companies. However, there was no substantial intercept variation in the outcomes across companies, probably because of the limited number of companies in our dataset. Therefore, a two-level model instead of a three-level model was adopted. The independent (i.e. PLS) and dependent variables in this study (i.e. job satisfaction, affective commitment and intention to stay) were Level 1 variables. The moderating variables (i.e. AC and SC) were Level 2 variables. Furthermore, the assumption that AC and SC will moderate the relationship between PLS and outcomes is a cross-level interaction hypothesis (Klein, Dansereau, & Hall, 1994).

For all outcome variables, we first built an unconditional means model (Bliese, 2012), and compared this unconditional means model (i.e. a random intercept model) with a fixed intercept model. In step 1, we entered the individual-level variables into the equation: gender, age and supervisory responsibility. The slopes of the control variables were fixed (i.e. set equal for all departments). In the second step, we entered PLS into the equation. PLS was centered around the department mean (i.e. group-mean centering) to get an undistorted estimate of the moderating influence that both climate variables exert on the Level 1 association between PLS and the outcomes (Enders & Tofghi, 2007; Hofmann & Gavin, 1998). To examine whether the slopes of PLS should be specified as random or fixed, we compared a model with fixed slopes with a model with random slopes. We treated PLS as random effects at Level 2 in all three models, because estimating variance and covariance components for its slopes increased the models' fit. In the third step, we entered the Level 2 variables into the equation. We added sector and department size as Level 2 control variables, together with the Level 2 explanatory variables AC and SC. Both climate variables were centered around their sample means (i.e. grand-mean centering), to reduce the possible problems with multicollinearity

(Enders & Tofghi, 2007; Hofmann & Gavin, 1998). In the fourth and final step of our analysis, we entered the two cross-level product terms PLS*AC and PLS*SC to examine the cross-level interaction hypothesis that a Level 2 climate would moderate the effects of Level 1 PLS.

We estimated the models using restricted maximum likelihood estimation method. We calculated pseudo R^2 's after each step indicating the within-firm and between-firm variance explained by the variables in that step (Snijders & Bosker, 1994). We tested the multivariate significance of effects in each step by computing the increase in model fit compared with the previous step. We relied on deviance statistics ($-2 \log$ likelihood) for comparing models that did not differ in the number of fixed effects, and on pseudo R^2 statistics where models differed in the number of fixed effects.

Results

Preliminary analyses

Means, standard deviations (SDs), intraclass correlations and intercorrelations of all variables on both the individual and department level are presented in Table 1. The group (department)-level correlations are the correlations between the department means. PLS was positively correlated with autonomy, social support, job satisfaction and affective commitment at the individual and department level, and with intention to stay at the individual level. Social support was positively correlated with job satisfaction, affective commitment and intention to stay at the individual and department level. Autonomy was positively correlated with all three outcomes at the individual level, but only with job satisfaction and affective commitment at the department level.

The results of the multilevel analyses with job satisfaction, affective commitment and intention to stay as dependent variables are presented in Tables 2–4. First, we ran unconditional means models to examine whether there was systematic between-department variance in the dependent variables. The ICC (1) values estimated based on the unconditional means models were 0.13 for job satisfaction, 0.09 for affective commitment and 0.08 for intention to stay. These values may be considered small to medium effect sizes, indicating that there is sufficient variance in the dependent variables accounted for by the department level (LeBreton & Senter, 2008). (Note that the ICC values based on the unconditional means model are slightly higher than the values based on an ANOVA model reported in Table 1, see Bliese, 2012). For all outcomes we then compared a model with a random intercept with a model without a random intercept (Bliese, 2012). The $-2 \log$ likelihood values for the model with the random intercept were significantly lower than for the model without a random intercept (results can be obtained from the first author), indicating that there is significant intercept variation in the outcomes across departments and that a random intercept model therefore better fits the data than does the model without a random intercept.

As is shown in Step 2 of the different models (Tables 2–4), when controlling for age, gender and supervisory responsibility, job satisfaction ($\gamma_{40} = 0.65, p < 0.001$), affective commitment ($\gamma_{40} = 0.42, p < 0.001$) and intention to stay ($\gamma_{40} = 0.47, p < 0.001$) increased with PLS. Step 3 of the different models (Tables 2–4) showed that AC was positively related to job satisfaction ($\gamma_{04} = 1.66, p < 0.001$) and affective commitment ($\gamma_{04} = 0.69, p < 0.001$), but not to intention to stay ($\gamma_{04} = -0.11, ns$). SC was positively related to job satisfaction ($\gamma_{05} = 1.45, p < 0.001$), affective commitment ($\gamma_{05} = 0.89, p < 0.001$) and intention to stay ($\gamma_{04} = 0.80, p < 0.001$).

Table 1. Descriptive statistics, intraclass correlations (ICC's) and correlations for explanatory and outcome variables.

	M	SD	ICC (1)	ICC (2)	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Gender	0.57	0.50	-	-	-	0.00	0.18*	-0.10	0.26**	0.03	-0.32**	0.09	-0.09	-0.04	-0.10	-0.09	-0.15
2 Age	40.53	10.42	-	-	0.09**	-	0.13	0.10	-0.01	-0.32**	0.35**	-0.12	0.24**	-0.11	0.20**	0.12	0.50**
3 Supervisory responsibility	0.22	0.42	-	-	0.17**	0.17**	-	-0.04	-0.09	0.08	0.01	0.26**	0.35**	-0.07	0.26**	0.28**	-0.02
4 Department size	99.26	85.50	-	-	-0.14**	0.07**	0.02	-	-0.17*	-0.07	0.23**	0.03	0.07	0.14	0.13	0.11	0.08
5 Industry	0.28	0.46	-	-	0.15**	-0.03*	-0.02	-0.24**	-	-0.61**	-0.43**	-0.34**	-0.43**	-0.39**	-0.45**	-0.42**	-0.14
6 Services	0.35	0.48	-	-	0.04**	-0.20**	-0.02	-0.17**	-0.46**	-	-0.44**	0.47**	0.26**	0.34**	0.26**	0.28**	-0.19*
7 Government	0.37	0.48	-	-	-0.18**	0.23**	0.04**	0.39**	-0.48**	-0.56**	-	-0.15	0.19*	0.05	0.21*	0.16	0.36**
8 PLS	1.42	0.72	0.15	0.87	0.07**	-0.01	0.12**	-0.06**	-0.04**	0.21**	-0.17**	-	0.32**	0.26**	0.42**	0.47**	0.05
9 Autonomy	1.65	0.60	0.17	0.89	0.02	0.14**	0.21**	-0.01	-0.07**	0.02	0.04**	0.17**	-	0.26**	0.72**	0.55**	0.10
10 Social support	2.23	0.50	0.06	0.71	0.00	-0.10**	-0.06**	-0.03	-0.05**	0.11**	-0.06**	0.17**	0.22**	-	0.36**	0.40**	0.17*
11 Job satisfaction	7.04	2.34	0.09	0.79	0.02	0.11**	0.14**	0.01	-0.07**	0.03*	0.03*	0.21**	0.34**	0.25**	-	0.74**	0.38**
12 Affective commitment	3.21	1.57	0.06	0.73	0.04**	0.05**	0.15**	0.00	-0.04**	0.04**	0.00	0.24**	0.25**	0.21**	0.50**	-	0.35**
13 Intention to stay	3.65	1.47	0.07	0.75	-0.02	0.30**	0.05**	0.05**	-0.06**	-0.06**	0.12**	0.21**	0.18**	0.18**	0.49**	0.40**	-

Notes: Numbers below the diagonal represent individual-level correlations; $N_1 = 5801$. Numbers above the diagonal represent group (department)-level correlations; $N_g = 148$. Means and SDs are at the individual level. Gender: female, 0; male, 1. Supervisory responsibility: no supervisory responsibility, 0; supervisory responsibility, 1. ICC values are based on an analysis of variance.

* $p < 0.05$, ** $p < 0.01$.

Table 2. Fixed effects estimates (top) and variance-covariance estimates (bottom) for models predicting job satisfaction.

	<i>Unconditional means model</i>			
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 4</i>
Intercept	6.93 (0.08)	5.70 (0.19)	5.65 (0.21)	5.63 (0.21)
Gender (γ_{10})	-0.09 (0.07)	-0.12 (0.07)	-0.10 (0.07)	-0.10 (0.07)
Age (γ_{20})	0.02*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Supervisory responsibility (γ_{30})	0.77*** (0.08)	0.68*** (0.08)	0.65*** (0.08)	0.67*** (0.08)
PLS (γ_{40})		0.65*** (0.06)	0.61*** (0.06)	0.61*** (0.05)
Services (γ_{01})			0.17 (0.14)	0.16 (0.14)
Government (γ_{02})			0.14 (0.15)	0.13 (0.15)
Department size (γ_{03})			0.00 (0.00)	0.00 (0.00)
AC (γ_{04})			1.66*** (0.19)	1.86*** (0.19)
SC (γ_{05})			1.45*** (0.36)	1.34*** (0.37)
PLS * AC (γ_{44})				-1.13*** (0.20)
PLS * SC (γ_{45})				0.38 (0.37)
Fixed effects				
<i>Level 2</i>				
Intercept/intercept	0.79	0.75	0.25	0.25
PLS/intercept		-0.84	-0.50	-0.68
PLS/PLS		0.21	0.17	0.06
<i>Level 1</i>				
Intercept/intercept	5.41	5.07	5.07	5.07
-2 x log likelihood	26497.21	26168.17	26089.46	26061.26
Difference of -2 x log (df)		202.75*** (3)	78.72*** (5)	28.19*** (2)
Pseudo R ² (between)		9%	67%	67%
Pseudo R ² (within)		3%	13%	14%
Random parameters				

Notes: Numbers in parentheses are robust standard errors. Gender: female, 0; male, 1. Supervisory responsibility: no supervisory responsibility, 0; supervisory responsibility, 1. PLS, pay level satisfaction; AC, autonomy climate; SC, support climate.
 * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3. Fixed effects estimates (top) and variance-covariance estimates (bottom) for models predicting affective commitment.

	<i>Unconditional means model</i>			
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 4</i>
Intercept	3.16 (0.05)	2.22 (0.12)	2.16 (0.14)	2.15 (0.14)
Gender (γ_{10})	0.04 (0.05)	0.01 (0.04)	0.02 (0.04)	0.02 (0.04)
Age (γ_{20})	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)
Supervisory responsibility (γ_{30})	0.57*** (0.05)	0.50*** (0.05)	0.49*** (0.05)	0.50*** (0.05)
PLS (γ_{40})		0.42*** (0.04)	0.42*** (0.04)	0.42*** (0.04)
Services (γ_{01})			0.16 (0.10)	0.16 (0.10)
Government (γ_{02})			0.12 (0.11)	0.13 (0.11)
Department size (γ_{03})			0.00 (0.00)	0.00 (0.00)
AC (γ_{04})			0.69*** (0.13)	0.69*** (0.14)
SC (γ_{05})			0.89*** (0.26)	0.87*** (0.26)
PLS * AC (γ_{44})				-0.45*** (0.13)
PLS * SC (γ_{45})				0.19 (0.25)
Random parameters				
<i>Level 2</i>				
Intercept/intercept	0.21	0.21	0.13	0.13
PLS/intercept		-0.23	0.01	0.00
PLS/PLS		0.05	0.04	0.03
<i>Level 1</i>				
Intercept/intercept	2.31	2.15	2.15	2.15
- 2 X log likelihood	21516.95	21361.06	21126.70	21118.80
Difference of - 2 X log (df)		155.89*** (3)	195.67*** (3)	38.69*** (5)
Pseudo R ² (between)		6%	6%	39%
Pseudo R ² (within)		3%	4%	9%

Notes: Numbers in parentheses are robust standard errors. PLS, pay level satisfaction; AC, autonomy climate; SC, support climate. Gender: female, 0; male, 1. Supervisory responsibility: no supervisory responsibility, 0; supervisory responsibility, 1.
 * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Table 4. Fixed effects estimates (top) and variance-covariance estimates (bottom) for models predicting intention to stay.

	<i>Unconditional means model</i>			
	<i>Step 1</i>	<i>Step 2</i>	<i>Step 3</i>	<i>Step 4</i>
Intercept	3.61 (0.04)	2.40 (0.11)	2.64 (0.12)	2.36 (0.12)
Gender (γ_{10})	-0.17***	-0.20*** (0.04)	-0.19*** (0.04)	-0.19*** (0.04)
Age (γ_{20})	0.04***	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)
Supervisory responsibility (γ_{30})	0.04 (0.05)	-0.04 (0.04)	-0.04 (0.04)	-0.03 (0.04)
PLS (γ_{40})		0.47*** (0.04)	0.47*** (0.04)	0.47*** (0.03)
Services (γ_{01})			-0.01 (0.09)	-0.02 (0.09)
Government (γ_{02})			0.19* (0.09)	0.20* (0.09)
Department size (γ_{03})			0.00 (0.00)	0.00 (0.00)
AC (γ_{04})			-0.11 (0.12)	-0.03 (0.12)
SC (γ_{05})			0.80*** (0.22)	0.66*** (0.23)
PLS * AC (γ_{44})				-0.44*** (0.12)
PLS * SC (γ_{45})				0.74*** (0.22)
<i>Level 2</i>				
Intercept/intercept	0.17	0.11	0.10	0.10
PLS/intercept		-0.32	-0.48	-0.45
PLS/PLS		0.05	0.05	0.03
<i>Level 1</i>				
Intercept/intercept	2.01	1.76	1.76	1.76
- 2 X log likelihood	20684.63	19976.32	19980.76	19963.75
Difference of - 2 X Log (df)		297.54*** (3)	4.44 (5)	17.02*** (2)
Pseudo R^2 (between)		36%	41%	41%
Pseudo R^2 (within)		9%	14%	14%

Note: Numbers in parentheses are robust standard errors. PLS, pay level satisfaction; AC, autonomy climate; SC, support climate. Gender: female, 0; male, 1. Supervisory responsibility: no supervisory responsibility, 0, supervisory responsibility, 1.
 * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Tests of hypotheses

Hypothesis 1 predicted that AC would moderate the effects of PLS, such that low PLS is less negatively associated with job satisfaction (H1a), affective commitment (H1b) and intention to stay (H1c). As is shown in Step 4 of the different models, AC significantly moderated the effects of PLS on job satisfaction ($\gamma_{44} = -1.13, p < 0.001$), affective commitment ($\gamma_{44} = -0.45, p < 0.001$) and intention to stay ($\gamma_{44} = -0.44, p < 0.001$).

We plotted the interactions at three levels of AC (i.e. +1 SD, average, and -1 SD; Bauer & Curran, 2005), and conducted simple slope tests to examine the nature of the interactions. These interactions are graphically represented in Figures 1–3. A visual inspection of the graphs and the simple slope test showed that increases in PLS had stronger effects at low levels of AC (job satisfaction: $b = 0.91, t = 13.57, p < 0.001$; affective commitment: $b = 0.54, t = 12.26, p < 0.001$; intention to stay: $b = 0.59, t = 14.75, p < 0.001$) than at high levels of AC (job satisfaction: $b = 0.32, t = 4.83, p < 0.001$; affective commitment: $b = 0.30, t = 7.07, p < 0.001$; intention to stay: $b = 0.36, t = 9.10, p < 0.001$). These findings are in line with what we hypothesized (Hypothesis 1), suggesting AC to attenuate the negative implications of low PLS.

Hypothesis 2 predicted that SC would moderate the effect of low PLS, such that the negative effects of low PLS on job satisfaction (Hypothesis 2a), affective commitment (Hypothesis 2b) and intention to stay (Hypothesis 2c) would be less pronounced in work climates characterized by high social support. Step 4 of the different models showed that SC moderated the effect of low PLS on intention to stay ($\gamma_{45} = 0.74, p < 0.001$), but not on job satisfaction ($\gamma_{45} = 0.38, ns$), and affective commitment ($\gamma_{45} = 0.19, ns$). The interaction is graphically represented in Figure 4. A visual inspection of the graph and a

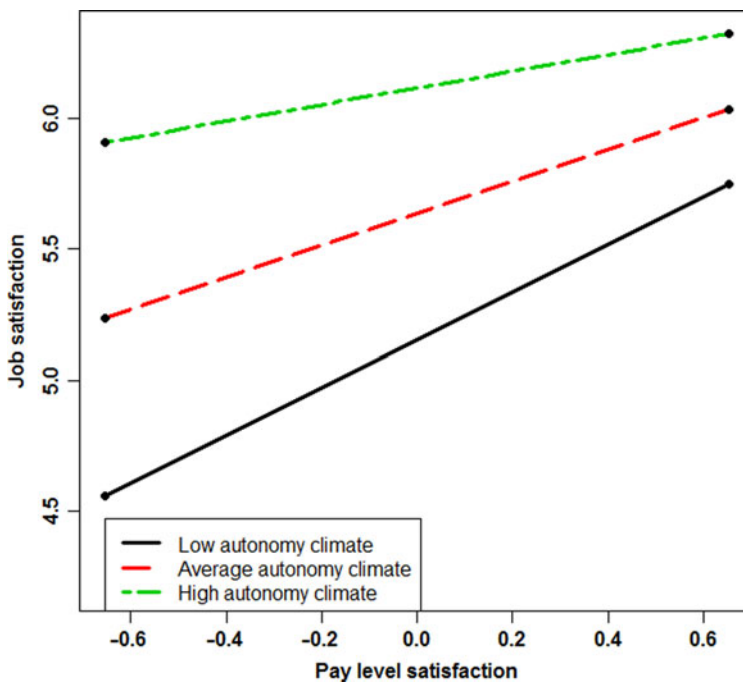


Figure 1. Interactive effects of AC and PLS on job satisfaction.

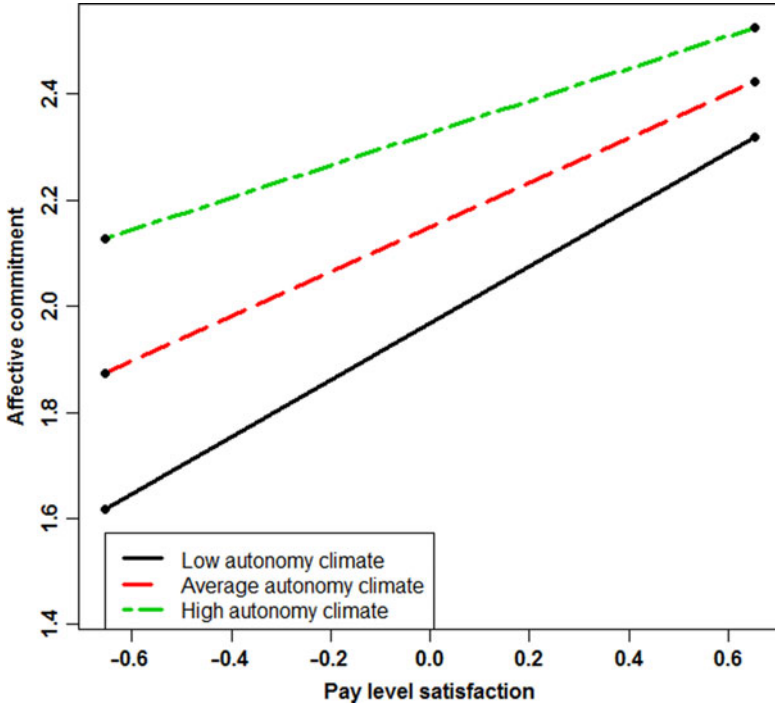


Figure 2. Interactive effects of AC and PLS on affective commitment.

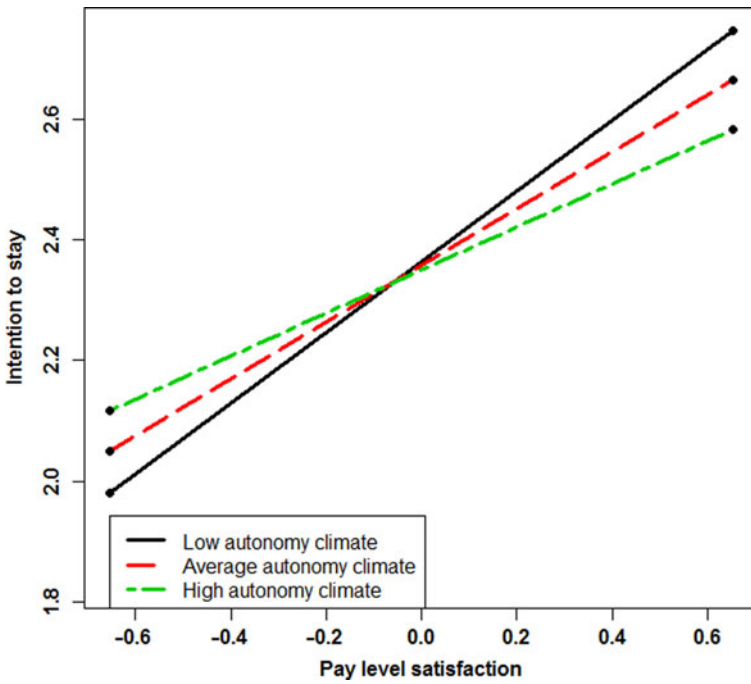


Figure 3. Interactive effects of AC and PLS on intention to stay.

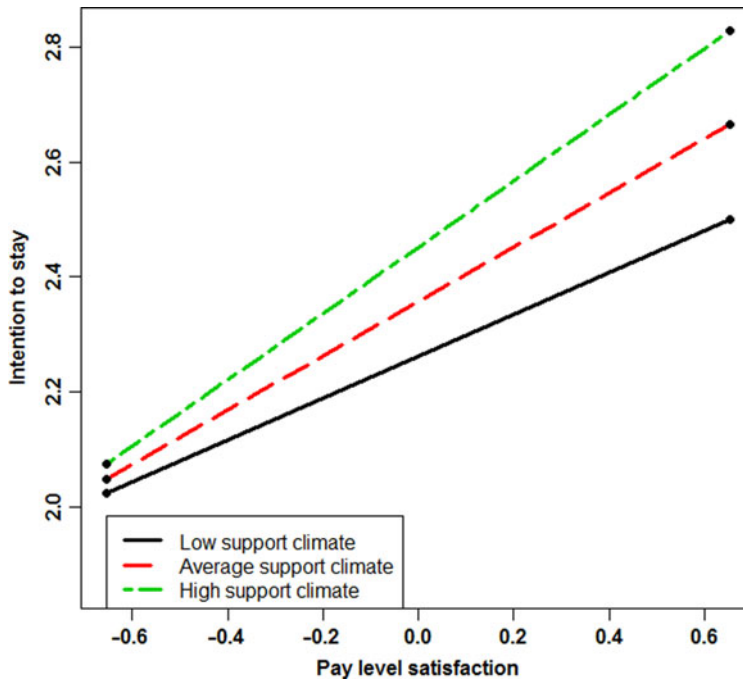


Figure 4. Interactive effects of SC and PLS on intention to stay.

simple slopes test showed that increases in PLS had stronger effects at high levels of SC ($b = 0.58, t = 14.38, p < 0.001$) than at low levels of SC ($b = 0.36, t = 9.41, p < 0.001$). Overall, while finding a significant interaction effect, results are opposite to what we hypothesized. Hence, we need to reject Hypothesis 2.

Discussion

This study was designed to examine the moderating role of AC and SC in the relationship between PLS and three outcomes: job satisfaction, affective commitment and intention to stay. Drawing from the literature on distributive justice and the meaning of money, we reasoned that work climates characterized by high levels of autonomy and social support would compensate for low PLS.

As predicted, we found AC to buffer the effects of low PLS on all three outcomes, such that the negative consequences of low PLS were less pronounced in high- as opposed to low-AC departments. Apparently, the lack of one can be, at least in part, compensated by the other. Consistent with the literature on the symbolic meaning of money (Hakonen et al., 2011; Lea & Webley, 2006; Mitchell and Mickel, 1999; Zhang, 2009), we interpret this finding as evidence that pay level supports feelings of competence, as does having autonomy (Nauta et al., 2010). We suggest that it is because of their similar psychological meaning that working in a climate of autonomy can act as a substitute for low PLS, and vice versa.

Consistent with CET (Deci, 1975; Ryan et al., 1983), the results provide indirect support for the idea that extrinsic rewards, such as pay level, may convey meaningful information about competence. Autonomy, which is known to be intrinsically rewarding (Fisher, 1978), also provides information about competence. This study shows that

autonomy can compensate for the lack of extrinsic rewards. Employees derive their sense of competence from the working environment rather than from the reward. So, what is to be learnt from this study is that AC plays a compensatory role because money also has a symbolic function, not only an instrumental function.

The results were less clear-cut with respect to the moderating role of SC. Contrary to our expectations, we found SC to exacerbate (rather than to mitigate) the effect of low PLS on intention to stay, such that the negative effect of low PLS on intention to stay was more pronounced in high- as opposed to low-SC departments. While unexpected, this finding is not implausible in hindsight. Evidence is emerging that there is a 'dark side' to social support and that social support may be a double-edged sword (Beehr, Bowling, & Bennett, 2010; Cheng, Chen, & LuoKogan, 2008; Nahum-Shani & Bamberger, 2011).

We offer two tentative explanations as to why also SCs can sometimes be harmful. Further research is of course needed to determine the validity of these explanations. First, in high SCs stressful situations are more likely to be discussed among coworkers than in low SCs. Coworkers are more likely to share their aversive feelings and to sympathize with each other's distress. Sympathy often takes the form of agreeing that the situation is indeed stressful. Hence, co-workers can 'support' a worker by agreeing that the worker is getting a raw deal in terms of pay, which might 'confirm' a worker's perception that he or she is in fact getting a bad deal and therefore should consider quitting. Second, in SCs not only do employees receive support from coworkers, they are also expected to reciprocate the support received (Nahum-Shani & Bamberger, 2011). Accordingly, SCs may foster feelings of obligations and induce self-imposed pressures on employees. From an equity perspective, these feelings constitute an additional demand (input) required from the employee. Feelings of obligations may be particularly taxing to employees whose input-output ratio is already out of balance, that is, to employees who are dissatisfied with their pay level.

Concerning the direct effects of PLS, for which we did not formulate hypotheses, our study found that an increase in PLS was associated with increases in job satisfaction, affective commitment and intention to stay. These findings corroborate previous studies (Kinicki et al., 2002; Williams et al., 2006), suggesting that for most people salary is an important motivator (Rynes et al., 2004). Additional findings, however, also point to motivators other than pay level. Specifically, we found AC and SC – operationalized as individual's shared perceptions of autonomy and co-worker support within the department – to exert a powerful influence on job satisfaction and affective commitment. Furthermore, SC was positively associated with employees' intention to stay with the company. Previous studies have primarily emphasized the motivational benefits of individual-level autonomy and support perceptions (e.g. Humphrey et al., 2007; Spector, 1986). This study reveals that the work environment (in terms of employees' shared perceptions of autonomy and social support) has a similar beneficial influence on employees' attitudes and intentions toward the company. Post-hoc analyses (not reported here) even showed that AC significantly explained variance in all three outcomes above and beyond that already explained by individual perceptions of autonomy. Cumulatively, these findings highlight that employee attitudes and intentions toward the company are determined by job characteristics as well as by work unit properties.

Potential limitations and suggestions for future research

Like any study, our study has potential limitations. First, it is important to recognize that our study relied on a cross-sectional survey design. The implication is that we cannot make any definite inferences about causality. Note, however, that our predictions are in line with

theory and that causal relationships from PLS and work climates to employee outcomes have been demonstrated in previous studies (e.g. Griffeth, 1985). Nevertheless, future research could use longitudinal designs to study the development of PLS over time and could focus on the dynamic effects of climate and individual attitudes. By monitoring how PLS deteriorates over time, we will learn more about how to furnish our pay policies and how we can bring autonomy into action to counteract these effects.

A second limitation could be that our data were based on self-reports, which may present some risks associated with common method variance. To reduce this possibility of common method variance, we followed the recommendations for questionnaire design proposed by Podsakoff, MacKenzie, Lee, and Podsakoff, (2003). In addition, we aggregated autonomy and social support to the department level. The design strategies, plus the fact that some of our hypotheses included cross-level moderation, suggest that common method bias may be of less concern in our study than in other studies relying on self-respondent questionnaires (Evans, 1985; McClelland & Judd, 1993).

Third, we aggregated direct consensus measures, asking respondents about their autonomy and support from their own perspective ('I have freedom'), to assess department-level AC and SC. Some scholars (e.g. Chan, 1998; Liao & Rupp, 2005) have argued that theoretically it may be more appropriate to use referent-shift consensus measures, that is, to ask department members to evaluate the level of autonomy and support in the department as a whole ('In this department, employees have freedom'), before aggregating responses to the department level. Both measurement approaches have been widely used in climate research, both across and within types of climate, and a standard has not yet emerged (Kuenzi & Schminke, 2009). In this study, a direct consensus approach seems to be justified because it is very likely that members of larger units, such as organizational departments, are unaware of the work of their fellow department members (Van Mierlo, Vermunt, & Rutte, 2009).

Fourth, our sample was exclusively composed of Belgian employees. Due to government regulations, salaries are probably less negotiable in Belgium than in many other countries, including the USA. Hence, before generalizing our findings to employees from other countries and cultures, replicating the results with a more cultural diverse sample would be preferable. Future research may also consider cross-cultural comparative studies of the interplay between PLS and work climates.

Fifth, we have argued that pay level, AC and SC provide a sense of competence and being respected. For this study, however, it was not possible to gather the data required to directly examine these explanatory mechanisms. Accordingly, more research is needed to more directly investigate the mechanisms through which work climates and pay level jointly influence employee outcomes.

Practical implications

We found support for the rather straightforward assumption of compensation research that high PLS is good, and low PLS is bad (Deckop, 1992). However, more important for HRM practice, we found that a high-autonomy work climate can compensate for the negative effects caused by low PLS. This finding adds to the other beneficial effects that arise when providing employees with autonomy and authority (Bakker, Van Emmerik & Euwema, 2006; Froese & Xiao, 2012). In this respect, the introduction of autonomous work teams may constitute an effective way of recognizing employees' value to the company.

What we can also learn from this study is that a SC has some unintended and undesirable side effects. Specifically, high-support work climates worsened the negative effects of low PLS on intention to stay with the company. We believe this may be the case because SCs facilitate information sharing about stressful working conditions (i.e. dissatisfaction with salary). If so, what can management do about this? From a justice perspective, companies could adopt a transparent pay system and provide honest and timely feedback to their staff on compensation issues (Till & Karren, 2011). An open communication strategy may reduce pay dissatisfaction, but only if the underlying system for determining pay is seen as fair. Transparency will only be advantageous if the pay system is truly fair, or if the employer is clearly seen as trying hard to make it fair (McFarlin & Sweeney, 1992).

Conclusion

We contributed to the literature on the meaning of money by identifying different types of climate affecting the associations between PLS and employee outcomes. Specifically, we found that a high-AC lessened, whereas a high-SC exacerbated the negative effects of low PLS. From this, we conclude that nurturing a climate of autonomy may be particularly beneficial for companies when their employees are dissatisfied with their wages.

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