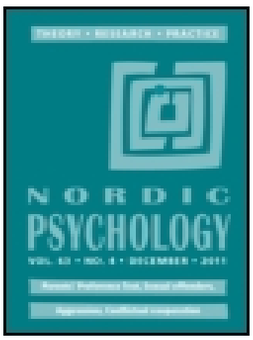

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ARTICLE

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# What makes employees stay? Mastery climate, psychological need satisfaction and on-the-job embeddedness

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## Abstract

Job embeddedness was developed as a new perspective to explain employee retention, and recent research has demonstrated its predictive power of voluntary turnover. However, little is known about factors that might influence job embeddedness. The aim of this study was to examine if a perceived mastery climate at work predicts job embeddedness (i.e., links, fit and sacrifice) and whether satisfaction of the needs for autonomy, relatedness, and competence would mediate this relationship. In a survey of 430 employees from six organizations in Iceland and one in Norway, we found that the needs for autonomy, competence, and relatedness mediated the relationship between a perceived mastery climate and the links, fit, and sacrifice dimensions of on-the-job embeddedness. We discuss theoretical and practical implications as well as directions for future research.

Keywords: mastery climate, basic need theory (BNT), job embeddedness, employee retention

## Introduction

Employee retention has become a popular topic within organizational psychology due to the high cost related to employee turnover (Coetzee et al., 2018) and because of increased competition for talent (Hughes & Rog, 2008). Not surprisingly then, explaining why people leave an organization has recently been widely studied. For decades, turnover models have suggested that employees will stay when they are satisfied, committed, and involved in their jobs, and leave if they are not (Griffeth et al., 2000; Rubenstein et al., 2018). The current evidence shows that attitudes only account for a small part of overall employee retention and turnover (Rubenstein et al., 2018). Instead of focusing on why people leave, Mitchell et al. (2001) suggested that a more useful approach would be to examine why people stay because people have different reasons for staying and leaving (De Lange et al., 2008; Lee & Mitchell, 1994). Mitchell et al. (2001) developed the construct of on-the-job embeddedness, which focuses on how *fit* to the organization, *links* to others, and the *sacrifice* of leaving can influence an employee's decision to stay in the organization. A body of research has been established explaining the theory and revealing the consequences of a

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high or a low level of on-the-job embeddedness (Bambacas & Kulik, 2013; Jiang et al., 2012; Lee et al., 2014). However, scarce research has been conducted on the predictors of on-the-job embeddedness. Therefore, there is a need for studies that examine factors that influence people's decision to stay at their jobs (Lee et al., 2014). By identifying predictor variables of on-the-job embeddedness, we can get a better understanding of why employees want to stay at their job and how we can design the working environment in a way that enhances employees' on-the-job embeddedness.

The social context at work is important, as employees' perceptions of the work climate have been found to be a good predictor of individual and work-related outcomes (Kuenzi & Schminke, 2009; Parker et al., 2003). Accordingly, the social context might predict why people choose to stay at their jobs (i.e., on-the-job embeddedness). A particularly relevant approach is the perceived motivational climate at work, as defined by achievement goal theory, given its focus on the situational determinants of achievement behaviour (Ames, 1992; Nerstad et al., 2013; Roberts, 2012). The perceived motivational climate refers to the criteria of success and failure at work and is divided into a mastery climate, characterized by support, cooperation, learning, and task mastery, and a performance climate, which values social comparison and intra-team competition (Ames, 1992; Nerstad et al., 2013). The current evidence indicates that individuals who perceive a mastery climate at work are more likely to experience positive outcomes, such as engagement, satisfaction, felt trust, creativity, performance, and reduced turnover intentions (Ntoumanis & Biddle, 1999; Harwood et al., 2015; Černe et al., 2014; Nerstad, Searle, et al., 2018). We suggest that by experiencing these positive outcomes at work, employees who perceive a better fit to the organization, have stronger links to others, and have more to sacrifice if leaving, become more embedded. Accordingly, the main purpose of our study was to test the direct and indirect influence—through psychological need satisfaction—of a perceived mastery climate on the three dimensions of on-the-job embeddedness: fit, links, and sacrifice (Figure 1).

Based on the basic need theory (BNT), we propose that satisfaction of the needs for autonomy, competence, and relatedness can explain how a perceived mastery climate positively influences employees' on-the-job embeddedness (Deci & Ryan, 2002). The theory states that autonomy, competence, and relatedness are the three universal human needs, and their satisfaction is required for psychological growth and well-being at work (Ryan & Deci, 2000; Vansteenkiste et al., 2020). Further, satisfaction of the three needs leads to increased intrinsic motivation and enhanced mental health (Van den Broeck et al., 2016). A number of studies have found positive organizational outcomes resulting from need satisfaction, such as effective performance, job satisfaction, positive work-related attitudes, and organizational citizenship behaviour (Gagné & Deci, 2005; Van den Broeck et al., 2016). To our knowledge, the impact of need satisfaction on on-the-job embeddedness has not yet been established. Because of the enhanced psychological well-being resulting from need satisfaction (Ryan & Deci, 2017), it might also positively influence employee on-the-job embeddedness. Reinboth and Duda (2006) found that a mastery climate enhances satisfaction of psychological needs, which suggests that need satisfaction might mediate the relationship between a perceived mastery climate and on-the-job embeddedness, yet this remains untested. Therefore, we posit that the characteristics of a perceived mastery climate positively influence on-the-job embeddedness (links, fit, and sacrifice) through increased satisfaction of autonomy, competence, and relatedness. Because the antecedents of on-the-job

embeddedness can impact its underlying dimensions in different ways (Bambacas & Kulik, 2013; Halvorsen et al., 2015), we treat on-the-job embeddedness as a multidimensional construct.

Through our study, we intend to contribute to the job embeddedness literature in two ways. First, we respond to the call for more knowledge about predictors of job embeddedness by clarifying the relevance of a perceived mastery climate for employee on-the-job embeddedness (Lee et al., 2014). Our research might clarify what form of social environment (i.e., perceived mastery climate) at work can promote employees' links, fit, and sacrifice in relation to the organization. In practice, this can be beneficial for managers because it may demonstrate how they can design an optimal social environment at work that might enhance employee retention as well as benefit employees through the positive outcomes associated with a perceived mastery climate. Second, we introduce the mediating role of the needs for autonomy, competence, and relatedness in the relationship between a perceived mastery climate at work and on-the-job embeddedness. This is important because just as psychological needs enhance employee well-being, they might be important mechanisms to "secure" employee on-the-job embeddedness.

Moreover, we intend to contribute to the BNT by further clarifying the role of a perceived mastery climate for enhancing psychological needs at work, as well as by examining the role of psychological needs for facilitating employee's links, fit and sacrifice at work. Research on the conditions that promote versus undermine need satisfaction has both theoretical and practical implications as it can contribute to both the knowledge of human behaviour and to the design of social environments that enhance people's development, performance, and well-being (Vansteenkiste et al., 2020). Hence, it is important to investigate what environmental work conditions support employees' psychological need satisfaction. In practice, this research could help leaders to increase employees' on-the-job embeddedness and find ways to manage it through mindfulness concerning achievement criteria at work.

## Theory and hypotheses

### Job embeddedness

To gain a broader understanding of employee retention, Mitchell et al. (2001) developed the concept of job embeddedness to explain why people stay at their jobs (Lee et al., 2014). Job embeddedness has been defined as the combined forces keeping employees at their jobs and consists of two subfactors: on-the-job embeddedness and off-the-job embeddedness (Mitchell et al., 2001). On-the-job embeddedness refers to how bound the employee is to the organization, and off-the-job embeddedness relates to how grounded the employee is in the community. Previous studies have shown that on-the-job and off-the-job embeddedness differently influence employee behaviour and work attitudes (Lee et al., 2004; Porter et al., 2019). Moreover, some studies have failed to find evidence for the impact of community factors in predicting turnover, suggesting that on-the-job embeddedness is a more important factor in explaining why people stay at their jobs (Zhang et al., 2012). Like many previous studies (e.g., Burton et al., 2010), in this study, we only examined on-the-job embeddedness at work, especially because we focused on the perceived mastery climate at work.

Mitchell et al. (2001) divided job embeddedness into three underlying components: links, fit, and sacrifice. First, *links* are characterized as both formal and informal connections to people or institutions. An employee is more bound to the job and the organization when the number of links is high (Lee et al., 2014). Second, Mitchell et al. (2001) described *fit* as an employee's perceived compatibility or comfort with the organization. The better the perceived fit between an employee's personal values and future plans with the demands of the job and the organizational culture, the more likely it is that he or she will be tied to the organization. Third, *sacrifice* refers to the perceived material and psychological cost of leaving a job. This can include benefits that are currently available or will be available in the future. For example, leaving a job can involve personal losses such as giving up colleagues and interesting projects.

Job embeddedness has been found to be a critical factor in explaining voluntary turnover (Jiang et al., 2012; Peltokorpi et al., 2015; Sender et al., 2018) and explains a variance beyond job satisfaction and commitment (Mitchell et al., 2001). In addition, numerous researchers have found evidence for the importance of job embeddedness to organizational success because it has been positively related to job performance, organizational citizen behaviour (Lee et al., 2014), and innovation (Ng & Feldman, 2010). According to Lee et al. (2014), links, fit, and sacrifice have a positive and direct motivational influence on the decision to perform.

It is important to emphasize that job embeddedness should not be confused with low turnover intentions. First, although previous researchers have focused on explaining why people leave, job embeddedness offers a more useful means of explaining retention since it predicts both employee retention and employee turnover. Second, job embeddedness offers a new perspective on retention because it evaluates the extent to which people feel attached, regardless of their emotional experience toward the organization (Crossley et al., 2007).

## Perceived mastery climate

Work climate research not only examines individuals' perceptions of their working environment, but also how these perceptions determine their behaviour and attitudes (Schneider, 2000). The perceived motivational climate at work, originally defined in the achievement goal theory (Ames, 1992; Nicholls, 1989) refers to employees' perceptions of the criteria of success and failure, emphasized by the policies, practices, and procedures of the work environment (Nerstad et al., 2013). It consists of two distinct climates that lead to different outcomes for employees. A mastery climate refers to structures that support effort and cooperation; emphasizes learning and mastery of skills; and focuses on self-development and building competence (Ames, 1992). A mastery climate has been associated with enjoyment, work engagement, effort, perceived competence, need satisfaction, prosocial moral functioning, and reduced turnover intentions (Ntoumanis & Biddle, 1999; Harwood et al., 2015; Černe et al., 2014; Nerstad et al., 2013; Nerstad, Dysvik, et al., 2018). For example, in the physical education domain, Parish and Treasure (2003) found that a mastery climate was an important predictor of self-determined forms of situational motivation (e.g., intrinsic motivation). On the other hand, a performance climate refers to situations that promote normative comparisons and intra-team competition, with a punitive approach to mistakes

(Nicholls, 1984, 1989). A performance climate has been found to predict less self-determined forms of motivation (e.g., extrinsic motivation). These two different climate structures are interdependent and can exist simultaneously, which indicates that it is important to control for a performance climate when measuring a mastery climate (Ames, 1992; Nerstad, Searle, et al., 2018; Ommundsen & Roberts, 1999).

### Mastery climate and on-the-job embeddedness

One of the key characteristics of a mastery climate is the encouragement of cooperation among team members (Ames, 1992). A cooperative goal structure refers to situations when the chances of succeeding are enhanced by the presence of effective others (Ames, 1984; West et al., 2008). Because employees depend on each other to reach a common goal, they build strong social relationships and are more likely to give each other social support and to engage in prosocial behaviour (Ames, 1984; Johnson, 2003). This in turn results in enhanced helping behaviour and greater individual effort (Ames, 1984). Černe et al. (2014) found support for the positive impact of a mastery climate on social relationships among employees. Their results indicated that a perceived mastery climate outweighed norms of self-interest and facilitated trust and constructive exchange relationships among co-workers. Moreover, Harwood et al. (2015) found in their meta-analysis that a mastery climate was significantly associated with prosocial attitudes, while the performance climate was associated with antisocial attitudes. The positive impact of cooperation among employees has been related to a variety of beneficial organizational outcomes, such as innovation and organizational commitment (West et al., 2008). Moreover, Mossholder et al. (2005) found that employees who help their co-workers have lower turnover tendencies, indicating that an environment emphasizing cooperation could increase embeddedness among employees. We propose that the positive social relationships that are enhanced in a perceived mastery climate are likely to strengthen the links between an employee and his or her co-workers, accelerating his or her embeddedness in the organization. The strong interpersonal relationships that develop between employees can also be a sacrifice factor that would be difficult to replicate in another organization, which can enhance employees' on-the-job embeddedness.

The impact of a mastery climate in work settings has further been examined in relation to a variety of employee outcomes. Empirical findings show that it is positively associated with engagement, high quality of work, and high work effort (Nerstad et al., 2013, 2018). In addition, a perceived mastery climate has been negatively associated with turnover intentions, indicating that it influences employees' willingness to stay (e.g., Nerstad et al., 2013; Nerstad, Searle, et al., 2018). As Nerstad et al. (2013) argued, employees might think about staying due to the benefits of a mastery climate for improving their work. For example, when employees are encouraged to build competence and develop themselves, they will be more intrinsically motivated and experience more well-being at work (Ryan & Deci, 2000). As Nguyen et al. (2017) argued, when employees are interested in their work, they are likely to experience more fit and hence be more embedded. Employees are more likely to stay when they experience that their skills and abilities fit with the demands of the job (Mitchell et al., 2001). Because a mastery climate emphasizes mastery of skills, learning, and development of competence (Ames, 1992), the mastery climate might enhance employees'

fit because employees might be more likely to experience that their skills and abilities fit with the demands of their job and the working environment. When the organizational environment focuses on providing opportunities for employee development, employees are more likely to be embedded (Nguyen et al., 2017). In turn, leaving such an environment might be a sacrifice factor for employees. Additionally, a mastery climate can influence employees' perceptions and understanding of what is valued and expected at the workplace (Kopelman et al., 1990), which should lead to a greater organizational fit because it is easier for employees to meet the demands of the organization when they know what is expected of them.

Based on the above arguments, a perceived mastery climate will likely enhance employee's on-the-job embeddedness due to the positive benefits employees' experience through its emphasis on cooperation, effort, learning, and individual development. Therefore, we hypothesized the following:

> *Hypothesis 1:* Perceptions of a mastery climate will be positively related to on-the-job embeddedness (i.e., links, fit, and sacrifice).

## The mediating roles of autonomy, competence, and relatedness

One theory that could be useful in explaining the positive influence of a mastery climate on job embeddedness is the BNT, a sub theory of the self-determination theory (Deci & Ryan, 2002; Vansteenkiste et al., 2020). According to the BNT, there exist three fundamental human needs: autonomy, relatedness, and competence (Van den Broeck et al., 2016). Autonomy means a personal authentic endorsement of one's behaviour (Deci & Ryan, 2000). Being autonomous also refers to acting out of one's own interest and values (Ryan & Deci, 2000). Relatedness refers to feeling connected and close in one's everyday interactions, having a sense of belongingness, and being cared for and caring for others (Baumeister & Leary, 1995; Bowlby, 2005; Deci & Ryan, 2000). Finally, competence involves feelings of effectiveness and mastery over one's environment and having opportunities to use and express capacities (Deci, 1975; Deci & Ryan, 2000). The theory argues that variations in psychological need satisfaction will predict variations in psychological and physical well-being (Ryan & Deci, 2000). For an individual to experience well-being, satisfaction of all three needs is required. Satisfaction of these needs has been related to a number of positive organizational outcomes, including work engagement (Deci et al., 2001), work performance, and psychological adjustment (Baard et al., 2000). Additionally, Kasser et al. (1992) found that the degree to which participants' three needs were satisfied on the job predicted the amount of time they spent at work in a voluntary work setting. These results indicate that satisfaction of all three needs is essential for enhancing intrinsic motivation at work and hence well-being. In turn, the fulfilment of these needs that result from acting out of personal interest, feeling connected, and having a sense of mastery over one's tasks might make an individual more likely to stay because employees who have more connections to others at work and experience a match between their skills and their job (i.e., experience mastery over their work) are more embedded (Mitchell et al., 2001).

The BNT also argues that social contextual factors can facilitate or thwart need satisfaction (Ryan & Deci, 2000; Vansteenkiste et al., 2020). For example, Reinboth and Duda (2006) found that when the environment emphasized a mastery climate, it positively predicted

satisfaction of the needs for autonomy, competence, and relatedness. Additionally, Deci et al. (1989) found that when supervisors were autonomy supportive—an important aspect of a mastery climate (Ames, 1992)—employees were more likely to experience psychological need satisfaction.

### *Need for autonomy*

There is empirical evidence indicating that a mastery climate positively influences the satisfaction of the need for autonomy (Harwood et al., 2015; Ntoumanis, 2001; Reinboth & Duda, 2006). For example, in one longitudinal study, the results indicated that feelings of autonomy, competence, and relatedness were positively predicted by a mastery climate (Sarrazin et al., 2001). A mastery climate considers achievement in a self-referenced way and is therefore within the individual's control (Reinboth & Duda, 2006). Being in control of one's own actions increases perceptions of the originality of one's actions (De Charms, 2013) and thus should facilitate the satisfaction of autonomy (Reinboth & Duda, 2006). Moreover, a mastery climate provides autonomy because it affords self-determined criteria of success (Buch et al., 2017; Ntoumanis & Biddle, 1999).

Although the impact of need satisfaction on job embeddedness has not directly been examined before, there is evidence indicating that satisfaction of the need for autonomy could be important in explaining on-the-job embeddedness. For example, Thompson and Prottas (2006) found strong evidence for the beneficial impact of job autonomy on employee well-being. Employees with higher levels of autonomy were more likely to be satisfied with their job, less stressed, and had a better work–family balance. Moreover, those who experienced more job autonomy were less likely to think about looking for another job. These results indicate that employees with high levels of job autonomy might have more to sacrifice if they leave and could therefore be more bound to their job. In a longitudinal study that examined the differences between employees who stayed and those who left showed that high levels of job autonomy predicted staying, while low levels predicted leaving (De Lange et al., 2008). The results from the above studies indicate that increasing perceptions of autonomy at work could foster on-the-job embeddedness. Given this reasoning, the need for autonomy might be a useful mechanism in explaining how a perceived mastery climate influences on-the-job embeddedness, which suggests the following hypothesis:

> *Hypothesis 2*: The satisfaction of the need for autonomy mediates the positive relationship between a perceived mastery climate and on-the-job embeddedness (i.e., links, fit, and sacrifice).

### *Need for competence*

The positive association between a mastery climate and perceived competence has been well established in the literature. For example, Harwood et al. (2015) examined the results from over 50 studies and found that a mastery climate was significantly associated with perceived competence. In addition, Jagacinski and Nicholls (1984) found that in environments characterized by a mastery climate, perceptions of competence were increased. Furthermore, Abrahamsen et al. (2008) found that a mastery climate was associated with

higher levels of perceived ability. Those who perceive primarily a mastery climate most likely focus on personal improvement, which leads to a perception of control over the demands of the environment (Chi, 2004). Generating high confidence by assuring the employees that they have the competencies to succeed could be a way to foster perception of high competence through a mastery climate (Abrahamsen et al., 2008). Moreover, if individuals seek to improve competence, they are likely to adopt a mastery goal (DeShon & Gillespie, 2005). A mastery climate is likely to be associated with perceptions of competence because it offers a less differentiated conception of ability, where ability and effort are clearly distinguished as causes of outcomes (Nerstad et al., 2013; Ntoumanis & Biddle, 1999).

Employees who experience competence are more likely to experience well-being at work, as well as to be more intrinsically motivated, compared to those who experience less competence (Gagné & Deci, 2005). Therefore, it is likely that employees who feel that their need for competence is satisfied might have more to sacrifice if they leave. Moreover, because the demands of the job (i.e., job knowledge, skills, and abilities) must fit the competence of the employee (Mitchell et al., 2001), it is plausible that the need for competence must be satisfied for the individual to experience organizational fit. Therefore, we hypothesized the following:

> *Hypothesis 3*: The satisfaction of the need for competence mediates the positive relationship between a perceived mastery climate and on-the-job embeddedness (i.e., links, fit, and sacrifice).

### *Need for relatedness*

A mastery climate is characterized by cooperation, which should foster feelings of belongingness and facilitate the satisfaction of the need for relatedness (Reinboth & Duda, 2006). In a meta-analysis by Harwood et al. (2015), perceptions of a mastery climate were found to positively predict perceived relatedness. Ames (1992) argued that a mastery climate can positively influence a sense of belongingness, because it is not only a feeling of acceptance by one's peers, but also a belief that one is an important and active participant in the work process. This self-perception tends to be more easily attained under conditions in which the focus is not on the adequacy of one's ability. Supporting this, Heuzé et al. (2006) found that high perceptions of a mastery climate were associated with task cohesion among team members.

Satisfaction of the need for relatedness should facilitate on-the-job embeddedness, because a high level of relatedness could result in a higher number of links. Pavey et al. (2011) found that highlighting relatedness promoted feelings of connectedness to others, which predicted greater prosocial intentions. The participants who were manipulated for relatedness were more interested in volunteering, felt more connected to others, and donated more money to charity compared to the participants who were manipulated for autonomy or competence or were given a neutral task. Pavey et al. (2011) argued that relatedness is important for prosocial behaviour because of the increased sense of connectedness. This could be related to links and sacrifice within the job embeddedness model, because the prosocial behaviour might strengthen links, and relationships with colleagues could be a sacrifice an individual would have to make if he or she left the organization. Finally, previous studies have found that high-quality relationships at work are important

for employee retention (e.g., Mossholder et al., 2005), indicating that increasing the satisfaction of the need for relatedness could result in more embeddedness. Based on the above arguments, we hypothesized the following:

> *Hypothesis 4*: The satisfaction of the need for relatedness mediates the positive relationship between a perceived mastery climate and on-the-job embeddedness (i.e., links, fit, and sacrifice).

# Method

## Participants and procedure

To ensure that ethical standards were met, information about the design of the study, questionnaire, and planned sample was evaluated and approved by the Norwegian Social Science Data Service.

Participants in the study were 430 employees from one organization in Norway and six organizations in Iceland. The seven participating organizations were all working within different job sectors (entertainment, contracting, finance, consulting, travelling, information technology, and fishing). We collected the data by sending out questionnaires to 1,494 employees by e-mail. The number of responses from each organization ranged from 34 to 125, and the average response rate was 30%. A total of 23% of respondents were in a managerial position with responsibility for other employees, and about 42% had a university degree. About 57% were between 30 and 49 years of age, and 62% of the participants were male. A total of 44% had been working for the organization for 2 years or less, and 56% had 6 years or less work experience in the job sector. Electronic versions of the questionnaire were made using Qualtrics, in Icelandic, Norwegian, and English. The questionnaires were sent to the job e-mail addresses of the sample in six of the companies participating in the research. In one of the companies, the employees in the sample were production workers who did not hold a job e-mail address and therefore participated by responding to the questionnaire on computers set up in the employee facility area. All participants were informed that it was voluntary to participate and that they could withdraw from the study at any time. To reduce potential problems of common method bias, participants were informed that their responses would be kept confidential and were encouraged to answer honestly. This procedure should make participants less likely to change their responses to seem more socially desirable and consistent with what the researcher wants them to say (Podsakoff et al., 2003).

## Measures

We used measures that have been validated in prior studies to measure each construct. The original language of the measures was English, and the back-translation procedure was used to translate the scales from English to Icelandic (Weeks et al., 2007). A Norwegian translation was available for all scales except for the on-the-job embeddedness scale, which was also back-translated using the same procedure as described above. Unless noted otherwise, a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) was used in this study. We provide examples of questions for each measure in the description below.

### *Mastery climate*

We used a 6-item measure developed and validated by Nerstad et al. (2013) to assess the perceived mastery climate at work (e.g., "In my department/work group, cooperation and mutual exchange of knowledge are encouraged"). The results from Nerstad et al. (2013) showed that the scale is a reliable and a valid measure of the mastery climate at work.

### *Needs for competence, autonomy, and relatedness*

To measure feelings of relatedness, autonomy, and competence, we used the work-related basic need satisfaction scale. For the Norwegian version, the translation by Dysvik et al. (2013) was used. Seven items are used to measure autonomy (e.g., "I feel free to express my opinions at work"), six items to measure competence (e.g., "I really master my tasks at my job"), and 10 items to measure relatedness (e.g., "I don't really feel connected with other people at my job"). Van den Broeck et al. (2010) found good support for the psychometric properties of the scale based on a Dutch sample of 1,185 employees.

### *On-the-job embeddedness*

To measure on-the-job embeddedness, we administered the job embeddedness scale validated by Felps et al. (2009). This scale measures both on- and off-the-job components of job embeddedness, as well as the three dimensions: links (e.g., "I work closely with my coworkers"), fit (e.g., "My job utilizes my skills and talents well"), and sacrifice (e.g., "I would sacrifice a lot if I left this job"). This is a shorter version of the 42-item measure of the job embeddedness scale developed by Mitchell et al. (2001). Felps et al. (2009) found that the short version was equally as good in predicting turnover as the long version. Because this study emphasizes on-the-job embeddedness, we used 9 items from the on-the-job embeddedness subscale.

### *Control variables*

We controlled for a perceived performance climate because perceived mastery and performance climates can be interconnected although distinct (Ames, 1992), and they can coexist (Ommundsen & Roberts, 1999). Accordingly, we applied an 8-item measure developed and validated by Nerstad et al. (2013) to assess the perceived performance climate (e.g., "In my department/work group, rivalry between employees is encouraged").

Gender was measured as dichotomous variable coded as 1 = female, 2 = male, because respondents might differ from nonrespondents in terms of gender (e.g., Mitchell et al., 2001). Additionally, age (in years) was used as a control variable because results might vary between age groups (e.g., Kanfer & Ackerman, 2000). Moreover, as Abelson (1987) found, older people are more likely to stay than to leave. We measured age on a scale from 1 to 6 (1 = 19 years or younger, 2 = 20–29 years, 3 = 30–39 years, 4 = 40–49 years, 5 = 50–59 years, 6 = 60 years or older). We also controlled for the seven different companies, as well as whether participants held a leadership position or not. It is likely that individuals with leadership responsibility might be more embedded (Sadeghpour et al., 2020).

### Statistical analysis

To assess discriminant validity for the variables and to determine item retention, we conducted a confirmatory factor analysis (CFA). We applied the robust maximum likelihood (MLR) estimator using Mplus 8.3 (Muthén & Muthén, 2017). This MLR approach uses the Huber-White sandwich estimator to calculate standard errors that are robust to model assumptions, and it allows for clustering in the sample (Gunzler et al., 2016). We were therefore able to attain robust estimations of standard errors and to account for normality of observation violations, especially for categorical items that have at least four categories (Flora & Curran, 2004). Due to the nested nature of the data (employees nested within a company), we conducted the CFA and structural equation modeling (SEM) with cluster robust standard errors at the company level.

Besides chi square, we evaluated and compared models using a root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), comparative fit index (CFI), and the standardized root mean square residual (SRMR). To evaluate whether our model was a good fit for the data, we applied the recommended guidelines for testing model fit (Hu & Bentler, 1999; Marsh, Hau, & Grayson, 2005): RMSEA below .05 or .08, TLI and CFI above .95, and SRMR below .06.

## Results

### Descriptive statistics and reliability

Means, standard deviation, and correlations between variables are displayed in Table 1. All scales demonstrated acceptable reliability, with Cronbach's alpha ranging from 0.67 to 0.90. There were no items that increased Cronbach's alpha if deleted, and therefore, we kept all items.

### Confirmatory factor analysis

The research model consisted of seven latent variables: a mastery climate, the need for autonomy, the need for competence, the need for relatedness, and the three dimensions of on-the-job embeddedness (links, fit, and sacrifice). We included performance climate, age, gender, organization, and leadership responsibility as control variables. The results from the CFA indicated that our seven-factor model fit the data well, $\chi^2$ (985) = 1238.06, $\chi^2/df = 1.25$, RMSEA = 0.02, CFI = 0.97, TLI = 0.96, SRMR = 0.067. We tested alternative models to make sure that the seven-factor model was a better fit for the data. First, we tested a model in which all variables loaded on one common factor, $\chi^2$ (1030) = 1902.22, $\chi^2/df = 1.84$, RMSEA = 0.04, CFI = 0.89, TLI = 0.89, SRMR = 0.10. Second, we tested a three-dimensional model in which the mediating variables (autonomy, competence, and relatedness) loaded on one latent factor and a mastery climate and the three dimensions of on-the-job embeddedness loaded on their own latent factor, $\chi^2$ (1019) = 1709.55; $\chi^2/df = 1.67$, RMSEA = 0.04, CFI = 0.91, TLI = 0.91, SRMR = 0.09. Third, we tested a five-dimensional model in which the three dimensions of on-the-job embeddedness loaded on one factor and the need for competence, need for autonomy, need for relatedness, and a mastery climate each loaded on their own latent factor, $\chi^2$ (1004) = 1323.06; $\chi^2/df = 1.30$, RMSEA = 0.03, CFI = 0.96, TLI = 0.95, SRMR = 0.07. Because the fit of the alternative models was less acceptable compared to

Table 1. Descriptive statistics for the study's variables (n = 430).

| Variable | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 3.8 | 1.1 | | | | | | | | | | | |
| 2. Gender | 1.6 | .49 | 0.04 | | | | | | | | | | |
| 3. Leadership | 1.8 | .42 | −0.11** | −.12* | | | | | | | | . | |
| 4. Performance climate | 2.6 | .80 | −0.0 | 0.11* | −.09 | **(.86)** | | | | | | | |
| 5. Mastery climate | 3.8 | .71 | −0.04 | −0.22** | −0.2 | −0.04 | **(.90)** | | . | | | . | |
| 6. Autonomy | 3.6 | .61 | .05 | −0.15** | −0.15* | 0.60** | −0.18* | **(.77)** | | . | . | | |
| 7. Competence | 4.2 | .58 | −.03 | −.08 | −.00 | −.13* | −.11* | .45** | **(.80)** | | | | |
| 8. Relatedness | 3.6 | .88 | −.00 | −0.2** | −0.12 | 0.43** | −.11* | 0.45** | 0.45** | **(.84)** | | | |
| 9. JE links | 4.1 | .69 | −0.39 | −0.17 | −0.46 | 0.53** | −.10* | .47** | .35** | 0.59** | **(.81)** | | |
| 10. JE fit | 3.7 | .74 | 0.49 | −0.10* | −0.14** | 0.62** | −0.10 | 0.72** | 0.34** | 0.46** | 0.46** | **(.78)** | |
| 11. JE sacrifice | 3.4 | .91 | 0.10 | −0.13** | −0.13** | 0.48** | −0.36 | 0.54** | 0.22** | 0.42** | 0.48** | 0.63** | **(.67)** |

*Note*. JE = On-the-job embeddedness; Cronbach's alphas are displayed on the diagonal (bold). Age: 1 = 19 or younger, 2 = 20–29 years, 3 = 30–39 years, 4 = 40–49 years, 5 = 50–59 years, 6 = 60 years or older; gender: female = 1, male = 2; leadership position: 1 = yes, 2 = no. *$p < .05$; **$p < .01$.

the seven-factor model, we conducted further analysis with the seven-factor research model.

Due to the cross-sectional data nature of the study, there is a potential for common-method variance (CMV). To test for the impact of CMV on our findings, we compared the fit of our research model against a model that allowed the variables to load on an additional method factor (Podsakoff et al., 2003). We did this in two steps. First, we tested an unconstrained baseline model including a method factor with variance equal to 1.0. This method model generated a significant chi square, $\chi^2$ (941) = 1054.94, $p < .01$. Then we compared whether the unconstrained model was equivalent to a model assuming no bias or that there is no substantial shared variance (item loadings were constrained to 0). This model also generated a significant chi square, $\chi^2$ (942) = 1052.72, $p < .01$. Using the Microsoft Excel tool developed by James Gaskin (http://statwiki.kolobkreations.com/index.php?title=Main_Page), we calculated whether there was any significant difference between these models. The results indicated that the two models were invariant, meaning that they were not different. This suggests that there was no substantial shared variance among all of our items, which indicates that there is no significant method bias in our data.

## Structural equation models

In support of Hypothesis 1, the results of the SEM analyses indicate that a mastery climate was directly positively related to the links ($\beta = 0.63$, $SE = 0.03$, $p < 0.001$), fit ($\beta = 0.77$, $SE = 0.03$, $p < 0.001$), and sacrifice dimensions ($\beta = 0.59$, $SE = 0.03$, $p < 0.001$) of on-the-job embeddedness (see Table 2). We then tested the predicted mediation model. The results indicated an acceptable model fit, $\chi^2$ (1003) = 1366.11, $\chi^2/df = 1.36$, RMSEA = 0.03, CFI = 0.96, TLI = 0.950, SRMR = 0.08. The results supported Hypothesis 2, which predicted that the need for autonomy would mediate the positive relationship between a mastery climate and the links dimension ($\beta = 0.19$, $SE = 0.04$, $p < 0.001$, and 95% CI [0.14, 0.34]), fit dimension ($\beta = 0.64$, $SE = 0.05$, $p < 0.001$, and 95% CI [0.69, 0.90]), and sacrifice dimension ($\beta = 0.57$, $SE = 0.06$, $p < 0.001$, and 95% CI [0.57, 0.84]), of on-the-job embeddedness. We found support for Hypothesis 3 (see Table 2), which predicted that the need for competence would mediate the positive relationship between a mastery climate and the links dimension ($\beta = 0.09$, $SE = 0.02$, $p < 0.001$, and 95% CI [0.09, 0.22]), fit dimension ($\beta = 0.05$, $SE = 0.01$, $p < 0.001$, and 95% CI [0.05, 0.14]), and sacrifice dimension ($\beta = -0.05$, $SE = 0.02$, $p = 0.005$, and 95% CI [–0.15, −0.03]) of on-the-job embeddedness. To our surprise, the relationship between the need for competence and the sacrifice dimension was negative ($\beta = -0.12$, $SE = 0.03$, $p = 0.000$) rather than positive. Although significant, it should be noted that the strength of the relationship was rather small. In sum, Hypothesis 3 was supported although the need for competence contributed to reduce the experience of sacrifice instead of increasing it.

As predicted in Hypothesis 4, the need for relatedness mediated the positive relationship between a mastery climate and the links ($\beta = 0.34$, $SE = 0.01$, $p < 0.001$, and 95% CI [0.51, 0.58]), fit ($\beta = 0.11$, $SE = 0.03$, $p < 0.001$, and 95% CI [0.07, 0.24]), and sacrifice ($\beta = 0.12$, $SE = 0.03$, $p < 0.001$, and 95% CI [0.07, 0.27]) dimensions of on-the-job embeddedness.

Table 2. Structural equation modelling results for direct and indirect relationships between the study's variables.

| Variables | Standardized parameter estimates |
|---|---|
| Dependent variable: JE—Links | |
| Mastery climate | 0.63 (0.03)** |
| Performance climate | –0.09 (0.06)** |
| Age | 0.04 (0.04) |
| Gender | –0.06 (0.03) |
| Leadership | –0.05 (0.03) |
| Dependent variable: JE—Fit | |
| Mastery climate | 0.77 (0.03)*** |
| Performance climate | –0.04 (0.04) |
| Age | 0.10 (0.03)** |
| Gender | 0.05 (0.04) |
| Leadership | –0.08 (0.07) |
| Dependent variable: JE—Sacrifice | |
| Mastery climate | 0.59 (0.03)*** |
| Performance climate | –0.05 (0.03) |
| Age | 0.02 (0.04) |
| Gender | –0.14 (0.04)** |
| Dependent variable: JE—Links | |
| Autonomy | 0.24 (0.05)*** |
| Competence | 0.15 (0.03)*** |
| Relatedness | 0.54 (0.02)*** |
| Performance climate | –0.04 (0.05) |
| Age | 0.03 (0.03) |
| Gender | –0.04 (0.02)** |
| Leadership | –0.04 (0.02)* |
| Dependent variable: JE—Fit | |
| Autonomy | 0.80 (0.05)*** |
| Competence | 0.09 (0.02)*** |
| Relatedness | 0.15 (0.04)** |
| Performance climate | 0.03 (0.03) |
| Age | 0.08 (0.03)** |
| Gender | 0.06 (0.03)* |
| Leadership | –0.13 (0.05)** |
| Dependent variable: JE—Sacrifice | |
| Autonomy | 0.70 (0.07)*** |
| Competence | –0.08 (0.03)** |

(*Continued*)

Table 2. (*Continued*).

| Variables | Standardized parameter estimates |
|---|---|
| Relatedness | 0.17 (0.05)*** |
| Performance climate | 0.01 (0.02) |
| Age | –0.06 (0.04) |
| Gender | –0.13 (0.09) |
| Leadership | –0.13 (0.05)** |
| Dependent variable: Autonomy | |
| Mastery climate | 0.81 (0.02)*** |
| Dependent variable: Competence | |
| Mastery climate | 0.57 (0.03)*** |
| Dependent variable: Relatedness | |
| Mastery climate | 0.73 (0.02)*** |
| Mediation influence: From Mastery climate to JE—Links | |
| Autonomy | 0.19 (0.04)*** |
| Competence | 0.09 (0.02)*** |
| Relatedness | 0.40 (0.01)*** |
| Mediation influence: From Mastery climate to JE—Fit | |
| Autonomy | 0.65 (0.05)*** |
| Competence | 0.05 (0.01)*** |
| Relatedness | 0.11 (0.03)** |
| Mediation influence: From Mastery climate to JE—Sacrifice | |
| Autonomy | 0.57 (0.06)*** |
| Competence | –0.05 (0.02)** |
| Relatedness | 0.12 (0.03)*** |

*Note*. JE = On-the-job embeddedness; Age: 1 = 19 or younger, 2 = 20–29 years, 3 = 30–39 years, 4 = 40–49 years, 5 = 50–59 years, 6 = 60 years or older; gender: female = 1, male = 2; leadership position: 1 = yes, 2 = no. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$. All values in the table are standardized.

## Discussion

The overarching goal of the present study was to respond to the call for research on what factors influence job embeddedness by investigating the relationship between a perceived mastery climate and on-the-job embeddedness and the mediating role of psychological need satisfaction. The results supported our hypothesis that when the achievement criteria at work is perceived to emphasize mastery, cooperation, and effort, employees are more likely to be embedded in their job through enhanced links, fit, and sacrifice. Moreover, the results indicated that satisfaction of the needs for autonomy, competence, and relatedness mediated this relationship. Contrary to our expectations, satisfaction of the need for competence reduced the sacrifice dimension of on-the-job embeddedness. Overall, our findings

indicate that a perceived mastery climate and psychological needs play an important role for employees' on-the-job embeddedness.

## Theoretical contributions

Previous research and theory within the job embeddedness literature have emphasized the positive benefits that can be gained for employees and organizations by facilitating job embeddedness (Lee et al., 2014). Job embeddedness has been found to be an important predictor of turnover (e.g., Crossley et al., 2007) and job performance (Lee et al., 2014). However, little attention has been given to the social context and mechanisms that can facilitate job embeddedness. Therefore, the first contribution of this study is to the job embeddedness literature by answering the call for more knowledge about antecedents of job embeddedness through demonstrating the importance of the perceived motivational climate at work (Lee et al., 2014). As hypothesized, the results showed that a perceived mastery climate was an important predictor of on-the-job embeddedness. These results imply that when leaders emphasize individual effort, improvement of skills, learning, and cooperation and provide self-referenced feedback, employees will have more to sacrifice, be more committed, and have stronger feelings of belongingness. These results are in line with previous studies that have found support for the positive benefits of a mastery climate on various organizational outcomes, such as turnover intentions, engagement, trust, and knowledge sharing (Černe et al., 2014; Kopperud et al., 2020; Nerstad, Dysvik et al., 2018). Moreover, these results support Nerstad et al. (2013; Nerstad, Dysvik et al., 2018) previous argument that employees will be more likely to stay due to the many benefits associated with a mastery climate, such as increased self-efficacy, autonomy, competence, and relatedness toward others (Harwood et al., 2015; Ntoumanis & Biddle, 1999). In sum, and as indicated in our results, such a climate seems to also be beneficial in terms of facilitating on-the-job embeddedness.

Our second contribution to the job embeddedness literature is the presentation of the mediating role of the needs for autonomy, competence, and relatedness. First, the results from the SEM supported Hypothesis 2, which proposed that satisfaction of the need for autonomy would mediate the positive relationship between perceptions of a mastery climate and on-the-job embeddedness. These results suggest that employees with higher perceptions of a mastery climate will be more embedded through satisfaction of the need for autonomy. A mastery climate facilitates feelings of autonomy because it focuses on self-improvement, providing employees with control of their development and performance (Duda & Hall, 2001; O'Keefe et al., 2013). Further, we found that the need for autonomy facilitates perceptions of on-the-job embeddedness in the form of links, sacrifice, and fit. Specifically, when employees perceive that their need for autonomy is satisfied, they seem to experience higher levels of close connections and interactions with their colleagues. Because perception of autonomy is a central factor for individual motivation as well as psychological well-being (Vansteenkiste et al., 2020), those employees who experience a high sense of autonomy over their work would have to sacrifice more if they left (Mitchell et al., 2001). This is in line with what our results suggest: When employees perceive volition over their work, they feel free to express their ideas and opinions, and they feel they have more prospects of continuing their employment. Further, the need for autonomy seemed to be

particularly important for the fit dimension of the on-the-job embeddedness. That is, employees' perceptions of freedom to pursue their goals, their feeling of having a good match with the organization, and being able to utilize their skills and talents were enhanced (Lee et al., 2014). These results are supportive of previous studies that have found that employees who perceive more autonomy are more likely to experience positive employee outcomes, such as higher level of job satisfaction and work engagement, and are more likely to stay at their job (De Lange et al., 2008; Deci et al., 2017; Thompson & Prottas, 2006).

Second, the results supported Hypothesis 3, which predicted that the need for competence would mediate the positive relationship between a perceived mastery climate and on-the-job embeddedness. In line with previous research, our results suggest that perceptions of competence are enhanced in a perceived mastery climate because such a climate focuses on self-development (Harwood et al., 2015; Nerstad et al., 2013). The mastery climate emphasizes what it takes for employees to succeed, which can create an opportunity to express one's capacities (Nerstad, Dysvik, et al., 2018). The results indicate that the need for competence enhances links (Mitchell et al., 2001), which might suggest that when the need for competence is satisfied, employees experience that they interact frequently with their colleagues and feel included as a part of the work group (Deci et al., 2017; Felps et al., 2009). Moreover, our findings indicate that the need for competence facilitates an experience of fit between the employee and the organization. That is, perceptions of competence seem to be relevant for employees to perceive a fit between their skills and their job (Lee et al., 2014). Interestingly, the need for competence reduced perceptions of sacrifice in leaving the job. This could indicate that when an employee feels that the need for competence is satisfied, the sacrifice of leaving his or her job would not be as great as we initially expected, in particular when employees do not see clear prospects for continuing. Our finding concerning the need for competence could be interpreted by drawing on the results of Dysvik et al. (2013). They found that the need for competence alone was not enough for employees to be intrinsically motivated. Instead, they found synergistic effects: Employees were intrinsically motivated when they experienced satisfaction of the needs for both competence and autonomy. Thus, an interesting avenue for future studies would be to explore synergistic effects between satisfaction of the three psychological needs in relation to on-the-job embeddedness.

Third, our results suggest that the need for relatedness mediates the positive relationship between a perceived mastery climate and on-the-job embeddedness. These results indicate that employees reporting a higher level of perceived mastery climate will be more embedded in their job through satisfaction of the need for relatedness. We found that the need for relatedness highly positively predicted on-the-job links, meaning that employees experience being a member of an effective work group, in which they interact closely (Lee et al., 2014). Our results align well with the job embeddedness theory, which emphasizes that employees who experience a sense of belongingness at work and feel connected to their co-workers have more links, which in turn enhances their embeddedness in the organization (Mitchell et al., 2001). We also found that the need for relatedness positively facilitated on-the-job sacrifice and fit. The emphasis on cooperation in a mastery climate probably increases employees' sense of belongingness and relatedness toward others at work (Ntoumanis & Biddle, 1999), which increases their embeddedness within the

organization. When employees are encouraged to work together toward achieving a common goal, they are more likely to interact, have more constructive exchange relationships, trust, and provide each other with social support (Ames, 1984; Černe et al., 2014; Johnson, 2003). In turn, this cooperative behaviour strengthens interpersonal relationships, positive regard, and feelings of relatedness (Nerstad, Dysvik, et al., 2018; West et al., 2008). These findings are in accordance with prior research regarding the importance of social networks for retention. For example, Mossholder et al. (2005) found that employees with more connections were more likely to relate with their colleagues and had higher levels of embeddedness toward the organization. Because previous researchers have mainly examined the quantity of links in relation to retention (e.g., Mitchell et al., 2001), the current study extends prior research by examining the impact of the quality of links between co-workers. This is done by using the scale developed by Felps et al. (2009), which focuses on quality of connections as well as demonstrating that satisfaction of relatedness is a predictor of on-the-job embeddedness. Our results suggest that psychological need satisfaction facilitates employees' links, fit, and sacrifice at work and that the needs for autonomy and relatedness seem to be the most important. These findings align well with the BNT literature, which has emphasized that each psychological need uniquely influences individuals' outcomes across contexts (Vansteenkiste et al., 2020).

The third contribution of the study is to the basic psychological needs' satisfaction literature by further clarifying the important role of a perceived mastery climate in facilitating satisfaction of the three psychological needs in work settings as well as by identifying how employee need satisfaction predicts on-the-job embeddedness. Although previous research has repeatedly showed that psychological need satisfaction is important for individuals' well-being and motivation at work (Deci et al., 2017; Gagné & Deci, 2005), its influence for on-the-job embeddedness remains unclear. Thus, the present study is the first to present the importance of psychological need satisfaction in relation to on-the-job embeddedness, thus extending previous studies examining the impact of BNT within an organizational setting. This is important because it suggests that when employees experience satisfaction of the needs for autonomy, competence, and relatedness, they can become more embedded in their job (except for the finding that the need for competence reduces the sacrifice dimension of on-the-job embeddedness). Moreover, the important role of relatedness for on-the-job embeddedness becomes clearer. According to Mitchell et al. (2001), the more links employees have to others in the organization, the more bound they will be to the job and to the organization. The results of our study indicate that not only is the number of links important for on-the-job embeddedness, but also their quality. When employees feel a sense of belongingness and connection to their co-worker's, they will be more embedded.

## Limitations and future research

Although the study provides a number of contributions, especially to the job embeddedness literature, there are several limitations that require the findings of the study to be interpreted with caution. First, this was a cross-sectional study and therefore does not allow causal inferences to be drawn based on the results. For example, we cannot rule out the possibility that the hypothesized relationships might work in a reverse direction than proposed in the study. Second, the data were self-report measures, derived from a single source. The nature of the constructs in the study

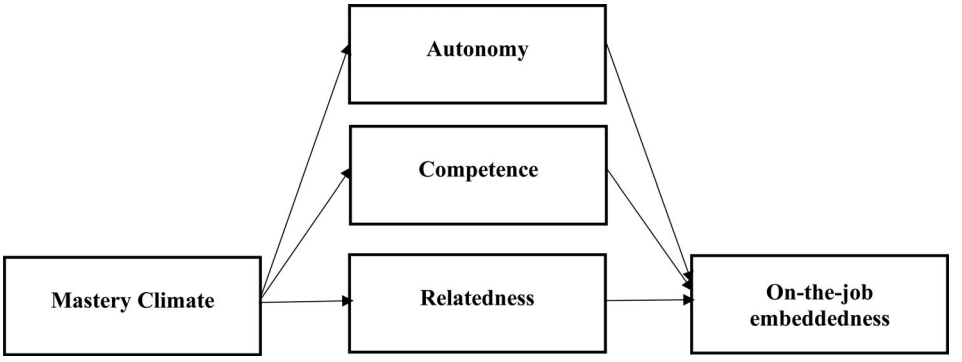


Figure 1. Proposed conceptual model. *Note:* On-the-job embeddedness includes the sub-dimensions: Links, Fit and Sacrifice.

required the use of self-report measures because these are perceptual constructs and measuring them from another source would not be appropriate. Because all measures were derived using the same method, CMV might have affected the results. For example, the self-report measures of competence might have been influenced by social desirability given the high average responses. It is possible that participants answered some questions regarding their competence in a way they felt was socially acceptable instead of giving their true meaning. We tried to minimize social desirability by emphasizing the anonymity of responses. In addition, the results from the CFA suggest that there was no significant method bias in our data. Moreover, complex models with mediation are less likely to be affected by CMV (Evans, 1985). Fourth, we did not measure off-the-job embeddedness. Because the job embeddedness concept includes both on- and off-the-job components, we cannot be sure that we captured the full range of the job embeddedness concept. However, despite these limitations, we believe that the model presented is plausible, given theory and previous empirical studies. Moreover, the current study expands the current knowledge in the extant literature and highlights useful implications for future research. Finally, because we collected data from seven organizations operating in different job sectors in two different countries, the generalizability of the study's results might be good. We encourage future researchers to conduct longitudinal and experimental studies that demonstrate the causality of the model presented in this study.

Beyond conducting similar studies with a longitudinal design, an interesting platform for future studies could be to examine factors that might strengthen the relationship between a mastery climate and on-the-job embeddedness. Because many organizations aim to develop human resource practices to retain their employees, it would be valuable to examine what human resource practices could potentially influence this relationship—for example, how different reward structures, performance appraisals, or job characteristics could strengthen or weaken the association between a mastery climate and on-the-job embeddedness.

## Practical implications

Retaining employees is one of the major challenges within human resource management today due to the high turnover rate that many organizations face. Therefore, the

identification and development of an effective approach to respond to this challenge is highly important. The findings from our study suggest new ways for organizations to respond to the challenge of employee retention. An important practical implication of this study is that by designing the working environment in a way that enhances perceptions of a mastery climate, organizations can influence employees' inclination to stay at the organization and satisfy their psychological needs.

Perceptions of a mastery climate can be influenced because the personal meaning of achievement and the cognitive, affective, and behavioural patterns that individuals exhibit at any particular time are determined by the influence of social climate factors (Ntoumanis & Biddle, 1999). The perceptions of a mastery climate can be determined by the key agents that "create" a mastery climate based on the way they relate to employees. Therefore, leaders can influence employees' mastery climate perceptions by giving employees opportunities for growth, valuing their effort, and emphasizing the achievement criteria of success according to the values of a mastery climate (Nerstad et al., 2013). Ames (1992) was interested in identifying certain structures that have been found to impact a range of motivational variables. These structures include the design of tasks and learning activities, evaluation practices, and distribution of authority or responsibility. Tasks that are interesting, challenging, and involve diversity are more likely to facilitate a mastery climate (Malone & Lepper, 1987; Marshall & Weinstein, 1984;). Additionally, evaluation of performance should be based on individual improvement and learning criteria, rather than on social comparison (Nicholls, 1989). Our study indicates that it might be helpful for leaders to consider their employees' psychological need satisfaction because it could enhance employees' on-the-job embeddedness. According to Deci et al. (1989), autonomy support is the most important social-contextual factor that promotes psychological need satisfaction and intrinsic motivation at work. There are a number of ways in which supervisors can support employee autonomy (Deci & Ryan, 1985), for example, by recognizing subordinates' perspectives, allowing opportunities for choice, encouraging participation, and employee initiation (Reinboth & Duda, 2006). Relatedness at work can be facilitated by establishing team building activities, which can be a good way to increase communication and build relationships among employees (Cabrera & Cabrera, 2005). Finally, when individuals experience the opportunity to extend their expertise and skills, their need for competence is satisfied (Vansteenkiste et al., 2020). This is likely to be accomplished in a mastery climate given the emphasis on learning and skills development. Still, leaders should also be mindful about contributing to the satisfaction of the need for competence with respect to the sacrifice dimension of on-the-job embeddedness. Particularly, if employees do not see clear prospects for continuing, and they feel that their need for competence is satisfied, they might not experience it as a sacrifice to leave the organization. Still, overall satisfaction of the three needs seems to be vital for employee on-the-job embeddedness and could make employees more likely to stay.

## Conclusion

Human resource managers are continually in search for ways to keep their most valuable resources, their employees. Our study indicates that the social context at work can act as a positive force in keeping employees at their job. We found that when employees perceive

that the criteria of success at work emphasize mastery, cooperation, and effort, employees are more likely to stay because in a mastery climate, employees have more autonomy over their work and can feel more connected to their co-workers.

## Disclosure statement

No potential conflict of interest was reported by the authors.

REFERENCES

Abelson, M. A. (1987). Examination of avoidable and unavoidable turnover. *Journal of Applied Psychology*, *72*(3), 382–386. https://doi.org/10.1037/0021-9010.72.3.382

Abrahamsen, F. E., Roberts, G. C., & Pensgaard, A. M. (2008). Achievement goals and gender effects on multidimensional anxiety in national elite sport. *Psychology of Sport and Exercise*, *9*(4), 449–464. https://doi.org/10.1016/j.psychsport.2007.06.005

Ames, C. (1984). Competitive, cooperative, and individualistic goal structures: A cognitive-motivational analysis. *Research on Motivation in Education*, *1*, 177–207.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*(3), 261–271. https://doi.org/10.1037/0022-0663.84.3.261

Baard, P., Deci, E., & Ryan, R. (2000). *Intrinsic need satisfaction as a motivational basis of performance and well-being at work: An application of cognitive evaluation theory* [Unpublished manuscript]. Fordham University.

Bambacas, M., & Kulik, T. C. (2013). Job embeddedness in China: How HR practices impact turnover intentions. *The International Journal of Human Resource Management*, *24*(10), 1933–1952. https://doi.org/10.1080/09585192.2012.725074

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497–529. https://doi.org/10.1037/0033-2909.117.3.497

Bowlby, J. (2005). *A secure base: Clinical applications of attachment theory* (Vol. 393). Taylor & Francis.

Buch, R., Nerstad, C. G., & Säfvenbom, R. (2017). The interactive roles of mastery climate and performance climate in predicting intrinsic motivation. *Scandinavian Journal of Medicine & Science in Sports*, 27(2), 245–253.

Burton, J. P., Holtom, B. C., Sablynski, C. J., Mitchell, T. R., & Lee, T. W. (2010). The buffering effects of job embeddedness on negative shocks. *Journal of Vocational Behavior*, *76*(1), 42–51. https://doi.org/10.1016/j.jvb.2009.06.006

Cabrera, E. F., & Cabrera, A. (2005). Fostering knowledge sharing through people management practices. *The International Journal of Human Resource Management*, *16*(5), 720–735. https://doi.org/10.1080/09585190500083020

Černe, M., Nerstad, C. G., Dysvik, A., & Škerlavaj, M. (2014). What goes around comes around: Knowledge hiding, perceived motivational climate, and creativity. *Academy of Management Journal*, *57*(1), 172–192. https://doi.org/10.5465/amj.2012.0122

Coetzee, M., Potgieter, I. L., & Ferreira, N. (2018). *Psychology of retention: Theory, research and practice*. Springer.

Crossley, C. D., Bennett, R. J., Jex, S. M., & Burnfield, J. L. (2007). Development of a global measure of job embeddedness and integration into a traditional model of voluntary turnover. *The Journal of Applied Psychology*, *92*(4), 1031–1042. https://doi.org/10.1037/0021-9010.92.4.1031

De Charms, R. (2013). *Personal causation: The internal affective determinants of behavior*. Routledge.

De Lange, A. H., De Witte, H., & Notelaers, G. (2008). Should I stay or should I go? Examining longitudinal relations among job resources and work engagement for stayers versus movers. *Work & Stress*, *22*(3), 201–223. https://doi.org/10.1080/02678370802390132

Deci, E. L. (1975). *Intrinsic motivation*. Plenum Press.

Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, *74*(4), 580–590. https://doi.org/10.1037/0021-9010.74.4.580

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*(1), 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, *19*(2), 109–134. https://doi.org/10.1016/0092-6566(85)90023-6

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2002). *Overview of self-determination theory: An organismic dialectical perspective*. In: E.L. Deci & Ryan (Eds.), *Handbook of self-determination research*, (p. 3–33). University of Rochester Press.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin*, *27*(8), 930–942. https://doi.org/10.1177/0146167201278002

DeShon, R. P., & Gillespie, J. Z. (2005). A motivated action theory account of goal orientation. *The Journal of Applied Psychology*, *90*(6), 1096–1127. https://doi.org/10.1037/0021-9010.90.6.1096

Duda, J., & Hall, H. (2001). Achievement goal theory in sport: Recent extensions and future directions. *Handbook of Sport Psychology*, *2*, 417–443.

Dysvik, A., Kuvaas, B., & Gagné, M. (2013). An investigation of the unique, synergistic and balanced relationships between basic psychological needs and intrinsic motivation. *Journal of Applied Social Psychology*, *43*(5), 1050–1064. https://doi.org/10.1111/jasp.12068

Evans, M. G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes*, *36*(3), 305–323. https://doi.org/10.1016/0749-5978(85)90002-0 https://doi.org/10.1016/0749-5978(85)90002-0

Felps, W., Mitchell, T. R., Hekman, D. R., Lee, T. W., Holtom, B. C., & Harman, W. S. (2009). Turnover contagion: How coworkers' job embeddedness and job search behaviors influence quitting. *Academy of Management Journal*, *52*(3), 545–561. https://doi.org/10.5465/amj.2009.41331075

Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, *9*(4), 466–491. https://doi.org/10.1037/1082-989X.9.4.466

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*(4), 331–362. https://doi.org/10.1002/job.322

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, *26*(3), 463–488. https://doi.org/10.1177/014920630002600305

Gunzler, D., Morris, N., & Tu, X. M. (2016). Causal mediation analysis using structure equation models. In: He H., Wu P., Chen DG. (Eds.), *Statistical Causal Inferences and Their Applications in Public Health Research* (p. 295–314). Springer.

Halvorsen, B., Treuren, G. J., & Kulik, C. T. (2015). Job embeddedness among migrants: Fit and links without sacrifice. *The International Journal of Human Resource Management*, *26*(10), 1298–1317. https://doi.org/10.1080/09585192.2014.990399

Harwood, C. G., Keegan, R. J., Smith, J. M., & Raine, A. S. (2015). A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity. *Psychology of Sport and Exercise*, *18*, 9–25. https://doi.org/10.1016/j.psychsport.2014.11.005

Heuzé, J.-P., Sarrazin, P., Masiero, M., Raimbault, N., & Thomas, J.-P. (2006). The relationships of perceived motivational climate to cohesion and collective efficacy in elite female teams. *Journal of Applied Sport Psychology*, *18*(3), 201–218. https://doi.org/10.1080/10413200600830273

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughes, J. C., & Rog, E. (2008). Talent management: A strategy for improving employee recruitment, retention and engagement within hospitality organizations. *International Journal of Contemporary Hospitality Management*, *20*(7), 743–757. https://doi.org/10.1108/09596110810899086

Jagacinski, C. M., & Nicholls, J. G. (1984). Conceptions of ability and related affects in task involvement and ego involvement. *Journal of Educational Psychology*, *76*(5), 909–919. https://doi.org/10.1037/0022-0663.76.5.909

Jiang, K., Liu, D., McKay, P. F., Lee, T. W., & Mitchell, T. R. (2012). *When and how is job embeddedness predictive of turnover? A meta-analytic investigation*. American Psychological Association.

Johnson, D. W. (2003). Social interdependence: Interrelationships among theory, research, and practice. *The American Psychologist*, *58*(11), 934–945. https://doi.org/10.1037/0003-066X.58.11.934

Kanfer, R., & Ackerman, P. (2000). Individual differences in work motivation: Further explorations of a trait framework. *Applied Psychology*, *49*(3), 470–482. https://doi.org/10.1111/1464-0597.00026

Kasser, T., Davey, J., & Ryan, R. M. (1992). Motivation and employee-supervisor discrepancies in a psychiatric vocational rehabilitation setting. *Rehabilitation Psychology*, *37*(3), 175–188. https://doi.org/10.1037/h0079104

Kopelman, R. E., Brief, A., & Guzzo, R. (1990). The role of climate and culture in productivity. In E. B. Schneider (Ed.), *Organizational climate and culture* (pp. 282–318). Jossey-Bass.

Kopperud, K. H., Nerstad, C. G. L., & Dysvik, A. (2020). Should i stay or should i go? The role of motivational climate and work–home spillover for turnover intentions. *Frontiers in Psychology*, *11, 1-16.* https://doi.org/10.3389/fpsyg.2020.01107

Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management*, *35*(3), 634–717. https://doi.org/10.1177/0149206308330559

Lee, T. W., Burch, T. C., & Mitchell, T. R. (2014). The story of why we stay: A review of job embeddedness. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 199–216. https://doi.org/10.1146/annurev-orgpsych-031413-091244

Lee, T. W., & Mitchell, T. R. (1994). An alternative approach: The unfolding model of voluntary employee turnover. The Academy of Management Review, *19*(1), 51–89. https://doi.org/10.2307/258835

Lee, T. W., Mitchell, T. R., Sablynski, C. J., Burton, J. P., & Holtom, B. C. (2004). The effects of job embeddedness on organizational citizenship, job performance, volitional absences, and voluntary turnover. *Academy of Management Journal*, *47*(5), 711–722. https://doi.org/10.2307/20159613

Malone, T., & Lepper, M. (1987). Making learning fun: A taxonomy of intrinsic motivations for learning. *Aptitude, Learning, and Instruction*, *3*, 223–253.

Marsh, H. W., Hau, K.-T., & Grayson, D. (2005). *Goodness of fit in structural equation models.* In: A. Maydeu-Olivares & J.J. McArdle (Eds.), *Multivariate applications book series. Contemporary psychometrics: A festschrift for Roderick P. McDonald* (pp. 275-340). Lawrence Erlbaum Associates Publishers.

Marshall, H. H., & Weinstein, R. S. (1984). Classroom factors affecting students' self-evaluations: An interactional model. *Review of Educational Research*, *54*(3), 301–325. https://doi.org/10.3102/00346543054003301

Mitchell, T. R., Holtom, B. C., Lee, T. W., Sablynski, C. J., & Erez, M. (2001). Why people stay: Using job embeddedness to predict voluntary turnover. *Academy of Management Journal*, *44*(6), 1102–1121. https://doi.org/10.2307/3069391

Mossholder, K. W., Settoon, R. P., & Henagan, S. C. (2005). A relational perspective on turnover: Examining structural, attitudinal, and behavioral predictors. *Academy of Management Journal*, *48*(4), 607–618. https://doi.org/10.5465/amj.2005.17843941

Muthén, L. K., & Muthén, B. O. (2017). *1998–2017. Mplus user's guide*. Muthén & Muthén.

Nerstad, C. G., Dysvik, A., Kuvaas, B., & Buch, R. (2018). Negative and positive synergies: On employee development practices, motivational climate, and employee outcomes. *Human Resource Management*, *57*(5), 1285–1302. https://doi.org/10.1002/hrm.21904

Nerstad, C. G., Roberts, G. C., & Richardsen, A. M. (2013). Achieving success at work: Development and validation of the Motivational Climate at Work Questionnaire (MCWQ). *Journal of Applied Social Psychology*, *43*(11), 2231–2250. https://doi.org/10.1111/jasp.12174

Nerstad, C. G., Searle, R., Černe, M., Dysvik, A., Škerlavaj, M., & Scherer, R. (2018). Perceived mastery climate, felt trust, and knowledge sharing. *Journal of Organizational Behavior*, *39*(4), 429–447. https://doi.org/10.1002/job.2241

Ng, T. W., & Feldman, D. C. (2010). The impact of job embeddedness on innovation-related behaviors. *Human Resource Management*, *49*(6), 1067–1087. https://doi.org/10.1002/hrm.20390

Nguyen, V. Q., Taylor, G. S., & Bergiel, E. (2017). Organizational antecedents of job embeddedness. *Management Research Review*, *40*(11), 1216–1235. https://doi.org/10.1108/MRR-11-2016-0255

Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, *91*(3), 328–346. https://doi.org/10.1037/0033-295X.91.3.328

Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Harvard University Press.

Ntoumanis, N. (2001). A self-determination approach to the understanding of motivation in physical education . *The British Journal of Educational Psychology*, *71*(Pt 2), 225–242. https://doi.org/10.1348/000709901158497

Ntoumanis, N., & Biddle, S. J. (1999). A review of motivational climate in physical activity. *Journal of Sports Sciences*, *17*(8), 643–665. https://doi.org/10.1080/026404199365678

O'Keefe, P. A., Ben-Eliyahu, A., & Linnenbrink-Garcia, L. (2013). Shaping achievement goal orientations in a mastery-structured environment and concomitant changes in related contingencies of self-worth. *Motivation and Emotion*, *37*(1), 50–64. https://doi.org/10.1007/s11031-012-9293-6

Ommundsen, Y., & Roberts, G. (1999). Effect of motivational climate profiles on motivational indices in team sport. *Scandinavian Journal of Medicine & Science in Sports*, *9*(6), 389–397. https://doi.org/10.1111/j.1600-0838.1999.tb00261.x

Parish, L. E., & Treasure, D. C. (2003). Physical activity and situational motivation in physical education: Influence of the motivational climate and perceived ability. *Research Quarterly for Exercise and Sport*, *74*(2), 173–182. https://doi.org/10.1080/02701367.2003.10609079

Parker, C. P., Baltes, B. B., Young, S. A., Huff, J. W., Altmann, R. A., Lacost, H. A., & Roberts, J. E. (2003). Relationships between psychological climate perceptions and work outcomes: a meta-analytic review. *Journal of Organizational Behavior*, *24*(4), 389–416. https://doi.org/10.1002/job.198

Pavey, L., Greitemeyer, T., & Sparks, P. (2011). Highlighting relatedness promotes prosocial motives and behavior. *Personality & Social Psychology Bulletin*, *37*(7), 905–917. https://doi.org/10.1177/0146167211405994

Peltokorpi, V., Allen, D. G., & Froese, F. (2015). Organizational embeddedness, turnover intentions, and voluntary turnover: The moderating effects of employee demographic characteristics and value orientations. *Journal of Organizational Behavior*, *36*(2), 292–312. https://doi.org/10.1002/job.2192

Podsakoff, P. M., MacKenzie, S. B., Jeong-Yeon, L., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Porter, C. M., Posthuma, R. A., Maertz, C. P., Jr., Joplin, J. R., Rigby, J., Gordon, M., & Graves, K. (2019). On-the-job and off-the-job embeddedness differentially influence relationships between informal job search and turnover. The Journal of Applied Psychology, *104*(5), 678–689. https://doi.org/10.1037/apl0000375

Reinboth, M., & Duda, J. L. (2006). Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective. *Psychology of Sport and Exercise*, *7*(3), 269–286. https://doi.org/10.1016/j.psychsport.2005.06.002

Roberts, G. (2012). Motivation in sport and exercise from an achievement goal theory perspective: After 30 years, where are we. *Advances in Motivation in Sport and Exercise*, *3*, 5–58.

Rubenstein, A. L., Eberly, M. B., Lee, T. W., & Mitchell, T. R. (2018). Surveying the forest: A meta-analysis, moderator investigation, and future-oriented discussion of the antecedents of voluntary employee turnover. *Personnel Psychology*, *71*(1), 23–65. https://doi.org/10.1111/peps.12226

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications.

Sadeghpour, M., Sung, S. M., Jacobe, H., & Kimball, A. B. (2020). Career satisfaction of leaders in academic dermatology: Results from a national survey. *International Journal of Women's Dermatology*, *6*(1), 25–29. https://doi.org/10.1016/j.ijwd.2019.09.004

Sarrazin, P., Guillet, E., & Cury, F. (2001). The effect of coach's task- and ego-involving climate on the changes in perceived competence, relatedness, and autonomy among girl handballers. *European Journal of Sport Science*, *1*(4), 1–9. https://doi.org/10.1080/17461390100071404

Schneider, B. (2000). *The psychological life of organizations*. In N. M. Ashkanasy, C. P. M. Wilderom, & M. F. Peterson (Eds.), *Handbook of Organizational Culture and Climate*, (p.17–21). Thousand Oaks, CA: Sage.

Sender, A., Rutishauser, L., & Staffelbach, B. (2018). Embeddedness across contexts: A two-country study on the additive and buffering effects of job embeddedness on employee turnover. *Human Resource Management Journal*, *28*(2), 340–356. https://doi.org/10.1111/1748-8583.12183

Thompson, C. A., & Prottas, D. J. (2006). Relationships among organizational family support, job autonomy, perceived control, and employee well-being. *Journal of Occupational Health Psychology*, *11*(1), 100–118. https://doi.org/10.1037/1076-8998.10.4.100

Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management*, *42*(5), 1195–1229. https://doi.org/10.1177/0149206316632058

Van den Broeck, A., Vansteenkiste, M., Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the work-related basic need satisfaction scale. *Journal of Occupational and Organizational Psychology*, *83*(4), 981–1002. https://doi.org/10.1348/096317909X481382

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). *Basic psychological need theory: Advancements, critical themes, and future directions*. Springer.

Weeks, A., Swerissen, H., & Belfrage, J. (2007). Issues, challenges, and solutions in translating study instruments. *Evaluation Review*, *31*(2), 153–165. https://doi.org/10.1177/0193841X06294184

West, M. A., Tjosvold, D., & Smith, K. G. (2008). *International handbook of organizational teamwork and cooperative working*. John Wiley & Sons.

Zhang, M. A., Fried, D. D., & Griffeth, R. W. (2012). A review of job embeddedness: Conceptual, measurement issues, and directions for future research. *Human Resource Management Review*, *22*(3), 220–231. https://doi.org/10.1016/j.hrmr.2012.02.004