

Reciprocity is Key: Overwork Eroding Innovation via Happiness

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ABSTRACT

Leveraging sustainability has become a competitive advantage over an organization's competitors. However, organizations usually build an overworked climate to reach double-edged spirals—from reaching sustainability missions to minimizing costs. Prior studies shows there are inconsistencies regarding the effects of overwork climates in terms of being beneficial or detrimental. In this study, we assert that they generally reduce sustainable innovative work behavior. Consistent with the conservation of resources (COR) theory, we further examine the indirect effect of happiness at work in this relationship. Employing a three-wave multi-sources survey of 290 employees (matched with 12 supervisors) from private and governmental organizations in eastern Indonesia, we obtained support for our proposed direct and indirect negative relationships between an overwork climate and employee sustainable innovative work behaviour, mediated by happiness at work. This association is particularly pronounced when employees possess elevated negative reciprocity beliefs, and this detrimental link diminished when employees convey positive reciprocity beliefs. This study provides theoretical and practical implications for positive psychology, job stress, and sustainable innovation scholarships.

Keywords: Overwork climate; Happiness at work; Positive-Negative reciprocity beliefs; Sustainable innovative work behavior; Conservation of resources (COR) theory

INTRODUCTION

With the fast-paced dynamic changes affecting work and businesses in the current years, companies have often been forced to do more with less—leaving employees exhausted, frustrated, and overwork. It is no wonder that the Eurofound reports work intensity, stress and burnout on the uptake among the European working population, while the International Labour Organization stresses that US exhibits a culture of intense work pressure even higher (Aumayr-Pintar et al., 2018; Grieve, 2023). Indonesian Bureau of Statistics (BPS) noted for the past few years, even during the pandemic of Covid-19, the number of overwork employees (more than 40 hours per week) has always been over 32 million people or around 26% (Solih et al., 2023). Overwork climate refers to how individuals perceive their work environment as encouraging employees to work long hours, overtime, take work home, or work during weekends or holidays (Mazzetti et al., 2014). As suggested in prior studies, it harms physical and mental health reduces employee' efficiency and affects their family life (Kogure, 2011; Morioka, 2011; Washitani, 2010). If the worker is in a state of fatigue for a long time, the effects of overwork are compounded and may even lead to *karoshi*—a Japanese term relating to occupation-related sudden death (Sparks et al., 1997).

A discussion regarding the consequences of an overwork climate in organizational and management studies is quite present. A study by Mazzetti et al. (2016) indicated that overwork climates elevate employee engagement, subsequently increasing several positive outcomes, including job performance. Nonetheless, these beneficial outcomes have been accompanied by challenges with important negative impact. Specifically, employees who perceive an overloaded climate have decreased job embeddedness, resulting in passive neglect of their responsibilities and, ultimately, resignation (Huang et al., 2021). To address this contradiction, we aim to extend this line of inquiry by investigating the underlying consequences of an overwork climate on sustainable innovative work behavior. It denotes the proactive involvement of employees in the

creation and execution of new products, processes, systems, and/or technologies designed to mitigate or prevent the adverse impacts of production processes on the environment and society (Dehkordi et al., 2024). This sustainability has become a driver of organization long-term survival (Orazalin et al., 2024). Nevertheless, most organization are likely to find several way in minimizing the cost, for example, require excessive work hours from their employees to deal with organizational expectation (e.g., sustainable idea) without hiring new employees (Hart, 2004). In this way, overwork climates could act as double edge sword. This concept is significant as fostering individual-level innovation might alleviate the dangers and complications organizations face with organizational-level innovation (Černe et al., 2022).

We apply the Conservation of Resources (COR) theory (2001) to investigate the potential “black box” of the relationship between overwork climate and sustainable innovative behavior, positing that happiness at work mediates this relationship. Employee happiness at work is characterized as the joyful and affirmative emotions experienced by employees in the workplace (Srivastava et al., 2022). Employees who encounter an overwork climate are more prone to experiencing unhappiness at work, as this situation imposes pressure to exceed official working hours to fulfill their responsibilities (Mazzetti et al., 2016). However, this adverse emotion of unhappiness will diminish employees' sustainable innovative work behavior. Happy employees are more inclined to generate positive energy that drives them to exert effort (Salas-Vallina et al., 2018), inspiring them to achieve favorable results (Sonam & Vivek, 2019). Conversely, unhappy employees are less likely to feel motivated to exert effort, resulting in a diminished likelihood of producing beneficial outcomes, such as sustainable innovative work behavior. These ideas align closely with COR's theory regarding the concept of negative loss spirals. The loss of one resource (unhappiness) results in another loss (sustainable innovative behavior).

Second, we assert that the strength of the aforementioned relationship is dependent on their beliefs regarding positive-negative reciprocity. Reciprocity involves *quid pro quo* actions, signifying that a given benefit creates a responsibility to reciprocate with an identical gesture (Mitchell & Ambrose, 2007). Positive reciprocity denotes that the recipient will respond favorably when one party extends benefits. Negative reciprocity refers to individuals responding negatively to adverse treatment they encounter (Cheng et al., 2022). Organizational studies have demonstrated that the norm of reciprocity functions as a fundamental attitude influencing individual behaviors in the majority of human cultures (Zolo et al., 2022). The COR theory asserts that the extent to which individual factors affect employee reactions will determine their attractiveness (Hobfoll, 2001). When employees believe in negative reciprocity, they will experience unhappiness at work due to a climate of being overwork. This feeling will diminish their propensity to participate in activities that benefit their organization (e.g., sustainable innovative behavior). Employees who embrace negative reciprocity are prone to pursue vengeance when subjected to mistreatment, particularly if the mistreatment is viewed as undeserved (Barclay et al., 2014). Conversely, employees who cultivate a belief in positive reciprocity will engage in constructive behaviors, such as sustainable work behavior, and adverse conditions (e.g., an overwork climate) will not disrupt their emotions.

The current study aims to contribute to the fields of positive psychology, work stress, and sustainable innovation following COR theory in two ways. First, we put experiencing happiness at work at the center of the relationship between an overwork climate and sustainable innovative work behavior. Previous research primarily emphasizes leadership, human resource practices, job features, and psychological factors as essential precursors to happiness at work (Salas-Vallina et al., 2017; 2020; Aboramadan & Kundi, 2022). The impact of organizational climate on workplace happiness remains understudied. Furthermore, previous research primarily emphasizes productivity related construct as a result of happiness at work (Jaswal et

al., 2024). This study presents new idea that happiness at work enhances sustainable innovative work behaviour (Salas-Vallina et al., 2020).

Second, despite being a critical concept in explaining many organizational behaviors, reciprocity has often been overlooked (Gervasi et al., 2022). This study enhances previous limited research of reciprocity on adverse situations, such as, psychological contract breach, counterproductive workplace behavior, workplace deviance, and incivility (Cropanzano et al., 2017; Greco et al., 2019). We elucidate how the likelihood of this detrimental link may be contingent upon employee beliefs of positive and negative reciprocity. Their inclination to experience happiness at work, which will drive people to participate in sustainable innovative work behavior, depends on their beliefs regarding whether an overwork climate should be reciprocated with a similarly unfavorable response or not. Furthermore, this study concurrently integrates and examines the moderating effect of positive-negative reciprocity beliefs in one. Most of previous research examined the belief in positive-negative reciprocity in separation (e.g., Cheng et al., 2022; Grip et al., 2020; Wu et al., 2014; Wei & Si, 2013).

Figure 1 illustrates our proposed model and hypotheses.

Insert Figure 1 about here

THEORETICAL BACKGROUND AND HYPOTHESES

Conservation of resources (COR) theory as a backbone of our research model

We employ the conservation of resources (COR) theory (Hobfoll, 1988; 1989; 1998), which elucidates an integrated stress theory that regards both external and internal processes as resources. Resources are described as items, individual attributes, situations, or energy that are esteemed for their intrinsic value or for their role as facilitators in attaining or safeguarding valued resources (Hobfoll, 1988). COR theory explicitly posits the concept of negative loss spirals (Hobfoll, 2001). The loss of one resource results in another loss. In the current study,

the overwork climate will adversely affect the retention of pleasant emotions (happiness at work), ultimately leading to a subsequent decline in sustainable innovative work behavior. An overwork climate will reduce happiness at work since employees experience pressure that compels them to allocate more time and effort to their jobs than to family or personal obligations (Li et al., 2024). Nevertheless, this negative emotion will diminish employee motivation to engage in sustainable innovative work behavior.

Furthermore, COR theory (Hobfoll & Shirom, 2000) asserts that employees' engagement in self-protective behavior depends on personality characteristics that bolster their perceptions of the feasibility or attractiveness of self-protection. Factors that enhance self-protection reinforce this process, while those that lower attractiveness have a detrimental impact (Hobfoll & Shirom, 2000). We propose that employees who cultivate elevated negative reciprocity beliefs perceive an overwork climate as a stressful state that diminishes their happiness at work. This condition diminishes their propensity to participate in activities that benefit their organization, such as sustainable innovative work behavior. Conversely, individuals who embrace negative reciprocity beliefs contend that it is appropriate to retaliate when mistreated (Mitchell & Ambrose, 2007). Conversely, employees who embrace positive reciprocity will not perceive an overwork climate as stressful. They are more inclined to demonstrate altruistic motivation and undertake actions to help the organization (Cheng et al., 2022), such as participating in sustainable innovative work behavior.

The mediating role of happiness at work

COR theory fundamentally serves as a motivational framework elucidating human behavior through the evolutionary imperative to get and preserve resources essential for life, a concept fundamental to human psychology. Within this study, we propose a negative relationship between overwork climate and happiness at work. COR theory (Hobfoll et al., 2018) asserts that stress arises (a) when essential resources are at risk of being lost, (b) when

essential resources are already lost, or (c) when there is an inability to acquire essential resources despite considerable effort. In the current study scenario, employees who perceive an overwork climate are less likely to experience happiness at work as they see this overwork climate as a stressful precursor. They have increasing level of fatigue and greater psychological pressure (Huang et al., 2021).

In the indirect way, an excessively demanding organizational climate will drive employees to extend their working hours, engage in overtime, bring work home, or work during weekends and holidays (Mazzetti et al., 2014). This condition diminishes happiness at work, generating a climate that communicates expectations concerning time commitment and indicates that those who fail to achieve these expectations may face adverse effects, such as hindered career advancement or unfavorable performance assessments (Afota et al., 2021). This concept aligns with COR theory (Hobfoll, 2001), which posits that the loss of one resource (time) leads to the loss of another (unhappiness).

Hypothesis 1: Overwork climate is negatively related to employee happiness at work.

In the era of globalization, organizational success relies not only on profitability but also on sustainability contributions. One of the significant driving factors of this is how employees promote sustainable innovation strategies, called sustainable innovative work behavior. A previous study identified happiness at work as a catalyst for entrepreneurial initiative and innovation capital (Usai et al., 2020). We additionally assert a comparable beneficial correlation between employee happiness at work and their sustainable innovative work behavior. A prior study indicated that, in contrast to unhappy employees, happy employees are more inclined to be proactive, readily accessible, enthusiastic, committed to their tasks, empathic towards colleagues, and resilient in the face of obstacles (Joo & Lee, 2017). Happy employees exhibit improved performance, displaying increased concentration and enthusiasm for their responsibilities. They demonstrate a more significant commitment to

their work (Bednárova-Gibová, 2021; Walsh et al., 2018), such as participating in sustainable innovative work behavior practices.

This reinforcing link aligns with COR theory (Hobfoll, 1989), which asserts that individuals with more significant resources are less vulnerable to resource depletion and superior at resource acquisition. COR theory underscores this crucial function in forecasting work-related outcomes (Hobfoll et al., 2018). Consistent with this notion, previous research characterizes happiness in the workplace as an experience of subjective well-being, manifested through a substantial presence of positive individual (e.g., valuing one's work, feeling engaged) and organizational (e.g., offering a supportive work environment) experiences, alongside an insignificant presence of negative individual and organizational experiences. Employee happiness at work directly impacts several favorable organizational outcomes (Jaswal et al., 2024), such as sustainable innovative work behavior.

Hypothesis 2: Employee happiness at work is positively related to their sustainable innovative work behavior.

By integrating hypotheses one and two, we suggest that employee happiness at work mediates the association between an overwork climate and sustainable innovative work behavior. Utilizing the COR theory (2001) principles regarding the resource loss spiral. When employees regard their climate as overwork, this condition will lead to a double loss spiral. First, unhappiness arises from the belief that this workplace demands and expects excessive employee effort (Mazzetti et al., 2016). Second, this adverse emotion will subsequently undermine employees' sustainable innovative work behavior, as a high level of such an environment may instill the perception that the organization compels them to work extended hours, including weekends and evenings, to complete tasks that remain unfinished during regular hours (Mazzetti et al., 2014).

The mediating role of happiness at work in the relationship between an overwork climate and sustainable innovative work behavior is could also explicated through various viewpoints aligning with COR theory (Hobfoll et al., 2018). The unhappiness employees experience in an overwork climate may undermine their self-esteem (Hobfoll et al., 2018). They are more likely to retaliate against this unfavorable condition to the extent that they are discouraged from contributing to organizational success, such as engaging in sustainable innovative work behavior. This concept aligns with previous research indicating that a psychological climate characterized by explicit behavioral expectations might function as a potent situational factor, exerting psychological pressure on individuals to either pursue or avoid specific actions (Meyer et al., 2010). An employee who perceives that the organization strongly endorses specific behaviors is likely to make their employee to feel obligated to exhibit these behaviors, regardless of the variety in individual climate perceptions within the organization (Afota et al., 2021).

Hypothesis 3: Employee happiness at work mediates the relationship between an overwork climate and sustainable innovative work behavior.

The moderating role of positive-negative reciprocity beliefs

We assert that the adverse correlation between an overwork climate and employee happiness at work is intensified when employees cultivate negative reciprocity beliefs. Conversely, this unfavorable association will weaken as employees cultivate positive reciprocity beliefs. The COR theory posits that the likelihood of employees participating in self-protective behavior depends on their access to personal characteristics that improve their assessments of the feasibility or attractiveness of self-protection (Hobfoll & Shirom, 2000). Employees who hold negative reciprocity beliefs will perceive that an overwork climate adversely impacts their happiness at work has a detrimental effect on their self-esteem; as such, this climate creates pressure (Afota et al., 2021; Hobfoll et al., 2018). Conversely, employees

with positive reciprocity beliefs do not perceive the overwork climate as pressure and will not disrupt their happiness and self-esteem.

Within another logic, positive-negative reciprocity beliefs could act as intrinsic motivation. When employees cultivate negative reciprocity beliefs and see their organizational climate as excessively demanding, they are likelier to feel that this state jeopardizes their well-being (Mazzetti et al., 2016), lowering their happiness at work. Conversely, when employees cultivate positive reciprocity beliefs, they perceive that their extra effort and diligence will be acknowledged and rewarded, thus less likely to affect their happiness at work despite the substantial demands of their roles. Employees who see positive reciprocity experience an enhanced sense of worth and fairness in their jobs. This notion serves as a psychological safeguard against the adverse impacts of elevated the demanding work environment. Our statements align with COR theory, which asserts that individuals must allocate additional resources to recuperate from prior resource depletion (Halbesleben et al., 2014). The COR theory also posits that employees' adverse responses to resource-depleting work conditions are contingent upon the severity of the resource depletion (Hobfoll & Shirom, 2000).

Hypothesis 4a: Employee positive reciprocity beliefs moderate the relationship between overwork climate and their happiness at work, such that the relationship is less negative for employees with higher positive reciprocity beliefs.

Hypothesis 4b: Employee negative reciprocity beliefs moderate the relationship between overwork climate and their happiness at work, such that the relationship is more negative for employees who hold higher negative reciprocity beliefs.

We propose the moderated mediation hypotheses by integrating the mediating and moderating hypotheses. We assert that the adverse indirect correlation between an overwork climate and sustainable innovative work behavior via happiness at work is intensified when employees cultivate elevated levels of negative reciprocity beliefs. Conversely, this adverse

indirect association diminishes when employees cultivate elevated levels of positive reciprocity attitudes. Previous research has shown that perceptions regarding positive-negative reciprocity significantly influence the likelihood of favorable or unfavorable organizational treatment eliciting positive or negative reciprocity (Chhabra et al., 2020).

The COR theory asserts that employees' behavioral reactions to resource-depleting workplace conditions are predominantly influenced by their need to offset resource losses with resource acquisitions (Hobfoll, 2001; Hobfoll et al., 2018). Employees who embrace negative reciprocity beliefs will react against an overwork climate by refusing to engage in sustainable innovative work behaviors due to their unhappiness. In this approach, employees will achieve a personal satisfaction benefit that eventually undermines organizational mission of achieving sustainability goals. Conversely, when employees endorse positive reciprocity beliefs, they are less inclined to retaliate against their organization. Employees with profound positive reciprocity beliefs are particularly observant of and inclined to respond favorably to positive interpersonal conduct (Perugini et al., 2003). For example, generating ideas that can help companies address environmental preservation challenges (AlEssa & Durugbo, 2022).

Hypothesis 5a: Employee positive reciprocity beliefs moderate the indirect relationship between overwork climate and their sustainable innovative work behavior through happiness at work, such that the relationship is less negative for employees with higher positive reciprocity beliefs.

Hypothesis 5b: Employee negative reciprocity beliefs moderate the indirect relationship between overwork climate and their sustainable innovative work behavior through happiness at work, such that the relationship is more negative for employees with higher negative reciprocity beliefs.

METHODS

Sample and Procedure

Our analyses are based on a three-wave field panel of 290 employees from private and government organizations from several industries (e.g., services, retail, government, food and beverages, acquired through reaching out to managers part of the network of the author's personal and professional contacts in the eastern part of Indonesia. We used data from eleven different organizations to enhance the external validity of this research and obtain variability across different domains and work settings. Data were collected using paper-and-pencil questionnaires and administered in English. A two week separation was between Time One (demographics and overwork climates), Time Two (happiness at work and positive-negative reciprocity beliefs), and Time Three (sustainable Innovative work behavior). The time gap was designed to avoid common method and expectancy biases, that is, the risk that employees might anticipate the research hypotheses if they assessed these key constructs simultaneously (Podsakoff et al., 2012). Moreover, the time gap between each wave was long enough to reduce concerns about the presence of reverse causality to some degree but not so long that significant organizational changes were likely to occur (Sofyan et al., 2023).

At Time One, we distributed 500 questionnaires. A total of 395 employees completed the Time One survey and 340 at Time Two. At Time Three, 299 employees completed the survey. At Time Three, 12 supervisors rated their subordinate sustainable innovative work behavior. Following best practices reported in prior studies (e.g., Zhu et al., 2019), we match the data sets based on the last 4 digits of their phone number (used as a matching code to preserve anonymity). We obtained a final sample of 290 (a return rate of 58%).

Table 1 describes the final sample, consisting of 151 (50.7%) female respondents. Most respondents hold a senior high school (39.7%), and 42.4% have worked for their company for 1-2 years. The majority are between 25-34 years old (41.7%). Majority of the respondents

mentioned they have salary around Rp4,000,001,- to Rp6,000,000,-². Most of the respondents are single (54.8%) and without children (54.1%).

Insert Table 1 about here

Measures

All measures used Likert scales from “1” (strongly disagree) to “5” (strongly agree).

Overwork Climate. We measured the extent to which employees perceived that they work in an overwork climate with eight items from Mazzetti et al. (2016). The sample of the questions are, “In my workplace, performing overwork is important to be promoted” and “Almost everybody expects employees to perform unpaid overtime work.”. $\alpha = 0.879$.

Positive and Negative Reciprocity Beliefs. We assessed employees’ beliefs using nine questions for positive reciprocity and also nine questions for negative reciprocity from Perugini et al. (2003). The sample of the questions are, “If someone does a favour for me, I am ready to return it” and “When someone does me a favour, I feel committed to repay him/her” for positive affectivity. “If I suffer a serious wrong, I will take my revenge as soon as possible no matter what the costs” and “I am willing to invest time and effort to reciprocate an unfair action”. $\alpha = 0.919$ for positive affectivity; $\alpha = 0.934$ for negative affectivity.

Happiness at Work. We measured the extent to which employees perceived happiness at work using three items from Chia and Chu (2016). We asked to what extent does this characterization describes you? “Compared to most of my peers, I consider myself to be happy” and “ some people are generally happy; enjoying life regardless of what is going on, getting the most out of everything.” $\alpha = .867$.

² Equivalent to USD 247 to USD 371 (exchange rate USD-IDR 16,170 (January 26, 2025)).

Sustainable Innovative Work Behavior. About 12 supervisors rated the focal employees' sustainable innovative work behavior using ten-items introduced by Dehkordi et al. (2024)³. This version consist of sustainable idea generation, sustainable idea promotion, sustainable idea implementation and attitude toward sustainable innovation. $\alpha = .853$.

Control Variables. Following prior research, we controlled for seven demographic variables: gender, education, age, organizational tenure, salary, marital status and number of children. Gender, education, age and tenure have been associated with emotional experience or expression in previous research (Sloan, 20120; Liu et al., 2020) as it will affect employee well-being (Johnston et al., 2013). Prior research notes that females tend to be assessed, overall, as better performers than males (Roth et al., 2012) and to offer more significant levels of volunteerism (Winterich et al., 2009). Meanwhile, marital status, number of children, and annual income measure the economic well-being of knowledge workers. It has been found that personal characteristics and economic conditions will affect employees' turnover intention to different degrees (Huang et al., 2021). Compared to men, women are generally more expressive of positive emotions (Sloan, 2012). Employees with higher organizational tenure might feel more confident in implementing novel ideas, given their more excellent organizational experience (Madrid et al., 2014). Prior studies have mentioned gender (Ang et al., 2003); age (Ng & Feldman, 2008); education (Amabile & Conti, 1999); tenure (Wang & Cheng, 2010) as indicators of innovative work behavior.

Analytic technique

The hypotheses were tested utilizing the SPSS PROCESS macro, as described by Hayes et al. (2017). It does not depend on the presumption of a normal distribution for indirect effects,

³ Two items ("I contribute to the implementation of new ideas to reduce the negative influence of manufacturing/processes on the environment and society" and "I actively contribute to the development of new products or services to reduce the negative influence of manufacturing/processes on the environment and society") were removed from the analysis because of their low reliability and insignificant factor loadings in the CFA.

including conditional indirect effects. Rather, it employs a bootstrapping methodology to allow the distributions of these effects to display skewness and diverge from the assumption of normality (MacKinnon et al., 2004).

Initially, we evaluated the indicators and the effects of the direct relationship between overwork climate and employee happiness at work (H1), followed by the connection between employees' happiness at work and sustainable innovative work behavior (H2). To evaluate the mediation effect (H3), we utilized PROCESS macro Model 4, which elucidates the indirect relationship between overwork climate and sustainable innovative work behavior, mediated by employee happiness at work, along with the associated bootstrap 95% confidence interval (CI) (5000 bootstrap samples). Subsequently, to evaluate the existence of moderation, we employed the interaction term of overwork climate $\times$ positive-negative reciprocity beliefs to predict sustainable innovative work behavior. Likewise, for moderated mediation, we additionally evaluate the varying (low, moderate, high) levels of positive-negative reciprocity beliefs (H5). The bootstrap 95% confidence intervals correspond to three scenarios: a moderator that is one standard deviation below its mean, at its mean, and one standard deviation above its mean. In accordance with the proposed conceptual framework, the estimated model incorporated the moderating effect of positive-negative reciprocity beliefs on the relationship between overwork climate and employees' happiness at work, but not on the relationship between happiness at work and their sustainable innovative work behavior (i.e., Model 7 in the PROCESS macro).

RESULTS

To provide evidence of discriminant validity, we used AMOS 22.0 to conduct confirmatory factor analysis. Table 1 shows that our confirmatory factor analysis indicated a good fit for the five-factor model. The chi-square value was $\chi^2(df = 619) = 2242$; comparative fit index (CFI) = .883; tucker-Lewis index (TLI) = .874; incremental fit index (IFI) = .884; root-mean square error of approximation (RMSEA) = .066; standardized root mean square residual

(SRMR)=.065. This five-factor model was better compared with the four-factor model, three-factor model, and two-factor model.

Insert Table 1 about here

We likewise tested convergent and divergent validity as measures of the construct validity, where items should reach the expected constructs with a standardized loading larger than .5, scale composite reliability (CR) larger than .7, and average variance extracted (AVE) larger than .5 (Hair et al., 2006). The factor loading ranged from .684 to .797 for overwork climate, from .883 to .893 for happiness at work, from .700 to .822 for positive reciprocity beliefs, from .750 to .858 for negative reciprocity beliefs, and from .580 to .833 for sustainable innovative work behavior. Scale CR showed .904, .919, .933, .945, and .887 respectively, and AVE was .541, .790, .606, .656, and .500, respectively.

The means, standard deviations, and intercorrelations among the constructs are presented in Table 2. All predictors were mean-centered before analyses (Aiken et al., 1991). The coefficient revealed a negative correlation between overwork climate and happiness at work ($r=-.542$, $p<.01$), and sustainable innovative work behavior ($r=-.160$, $p<.01$). We also found a positive correlation between happiness at work and sustainable innovative work behavior ($r=.243$, $p<.01$), consistent with the proposed research framework.

Insert Table 2 about here

Table 3 shows employees' overwork climate diminish employee happiness at work ($\beta=-.361$, $p<.001$). Employees' happiness at work was also found to be positively related to sustainable innovative work behavior ($\beta=.277$, $p<.001$), supporting hypotheses 1 and 2. The formal test for mediation indicated an effect size of -.067 for the indirect relationship between

overwork climate and sustainable innovative work behavior through employee happiness at work: its CI did not include 0[-.112, -.028], which supported the presence of mediation as predicted in Hypothesis 3.

Table 3 also shows the negative, significant interaction effect of the overwork climate $\times$ negative reciprocity beliefs ($\beta=-1.348$, $p <.001$) predicting employee happiness at work. As shown in Figure 2, the slope explains that when negative reciprocity beliefs is high, the relationship between overwork climate and employee happiness at work will become negative than when employees have low negative reciprocity beliefs. Thus, negative reciprocity beliefs turn the negative relationship of overwork climate and happiness at work become strongly negative. Hypothesis 4a is supported. Similarly, the significant interaction effect of the overwork climate $\times$ positive reciprocity beliefs ($\beta=.918$, $p <.001$) predicting employee happiness at work. As shown in Figure 3, the slope explains that when positive reciprocity beliefs is high, the relationship between overwork climate and employee happiness at work is less negative. Therefore, positive reciprocity beliefs makes the translation of overwork climate and happiness at work become less negative, in support of Hypothesis 4b.

Insert Table 3, Figure 2 and 3 about here

The formal test for moderated mediation entailed comparing the strength of the conditional indirect relationship between overwork climate and sustainable innovative work behavior through employees' happiness at work, which was less negative at higher levels of positive reciprocity beliefs and negative at higher levels of negative reciprocity beliefs. Table 4 shows increasing sizes for positive reciprocity beliefs (.606 at one SD below the mean, -.273 at the mean, and .887 at one SD above the mean). The corresponding CIs similarly did not include 0 [-.057, -.001]; [-.047, .000]; and [-.021, .026]. The index of moderated mediation and its associated CIs evaluated a formal test for the presence of moderated mediation. This index

equalled .020, and its CIs did not include zero [.002, .042]. These results reveal that positive reciprocity beliefs makes the indirect relationship between overwork climate and their sustainable innovative work behavior through employees' happiness at work become less negative, supporting Hypothesis 5a.

Table 4 also shows increasing sizes for negative reciprocity beliefs (-.762 at one SD below the mean, -.428 at the mean, and 1.349 at one SD above the mean). The corresponding CIs similarly did not include 0 [-.000, -.048]; [-.008, .032]; and [-.090, -.008]. The index of moderated mediation equalled -.029, and its CI did not include zero [-.058, -.008]. These results highlight that negative reciprocity beliefs makes the indirect relationship between overwork climate and their sustainable innovative work behavior through employees' happiness at work become negative, supporting Hypothesis 5b and the overall research framework.

Insert Table 4 about here

DISCUSSION

Despite the conflicting findings about the positive or negative consequences of an overwork climate (Huang et al., 2021; Mazzetti et al., 2016), the impact of an overwork climate on sustainability-related outcomes remains underexplored. Utilizing the Conservation of Resources (COR) theory, we respond to an invitation by Dehkordi et al. (2024) to investigate previously unexamined antecedents of sustainable innovative work behavior. This study presents a novel perspective that an overwork climate adversely impacts sustainable innovative work behavior by influencing happiness at work. The adverse association intensifies when employees cultivate a greater degree of negative reciprocity beliefs. This detrimental link is diminished when employees possess positive reciprocity beliefs. The current study findings provide several theoretical and practical implications for various fields based on our proposed hypothesis.

Theoretical contributions

The current study aims to provide several theoretical contributions grounded in COR theory. COR theory (Hobfoll, 1988; 1989; 1998) is presented as a comprehensive stress theory that evaluates environmental and internal processes with comparable significance. Our proposed hypothesis regarding the indirect relationship between overwork climates and employee sustainable innovative work behavior, mediated by happiness at work, aligns with the Conservation of Resources (COR) theory and its concepts of the double loss spiral (Hobfoll, 2001) and self-esteem (Hobfoll et al., 2018). An overwork climate refers to an employee's view of a work environment that necessitates overworking beyond designated work hours (Mazzetti et al., 2016). In the current study scenario, an overwork climate serves as a precursor to dual losses: the loss of time and the happiness emotions associated with the stress of such conditions. This discovery also addresses the calls for explicit inquiries into how workplace adversity may produce detrimental work outcomes for employees (Jahanzeb et al., 2019).

Furthermore, COR theory posits that employees' work behaviors are influenced by their intention to safeguard their existing resources and prevent additional resource depletion when faced with stressful work environments (Hobfoll, 1989, 2001). Prior studies have used this rationale to define detrimental work behaviors as responses by which employees express their frustration with unfavorable organizational conditions, preserving their self-esteem (Hobfoll et al., 2018). For example, employees facing work overload are more inclined to exhibit knowledge concealment behaviors to cope with the possibility of self-deprecating attitudes in such adverse circumstances (Sofyan et al., 2022). In support of this idea, negative emotions, such as unhappiness, that emerge when employees see their organization as having an overwork climate may deter them from participating in activities that could benefit the organization, including sustainable innovative work behavior. This behavior functions as a

coping strategy that employees utilize to exact retribution and alleviate the accompanying negative energy (Bordia et al., 2008; Restubog et al., 2015).

Moreover, the moderating influence of positive-negative reciprocity beliefs that either mitigate or enhance the association between an overwork climate and sustainable innovative work behavior is notably enlightening, particularly when examined alongside the mediation effect of happiness at work. COR theory posits that the likelihood of employees participating in self-protective behavior depends on their access to personal elements that improve their assessments of the feasibility or appeal of such self-protection (Hobfoll & Shirom, 2000). Employees who express negative reciprocity beliefs are less likely to engage in activities that benefit their organization, as they operate in a self-protective mode, unlike employees with positive reciprocity beliefs. This finding supports previous research on sustainable innovative work behavior that solely examines the moderating impact of sustainable leadership (Dehkordi et al., 2024). Nevertheless, where previous studies have examined positive and negative reciprocity beliefs independently, within this study, we test the positive-negative reciprocity beliefs together. For example, the moderating effect of positive reciprocity beliefs on the association between family-supportive supervisor conduct and perceived obligation (Cheng et al., 2022), training opportunities, and anticipated retirement age (Grip et al., 2020). The moderating effect of negative reciprocity beliefs on the relationship between workplace incivility and interpersonal deviance (Wu et al., 2014), as well as on psychological contract violation, abusive supervision, and organizational identity (Wei & Si, 2013).

Practical contributions

This research holds practical significance for both organizations and employees. Our study revealed that an overwork climate is a precursor that undermines sustainable innovative work behavior through employee happiness at work. Given that sustainability has emerged as a catalyst for the long-term viability of organizations (Dehkordi et al., 2024), organizations need

to mitigate this stressful overwork climate. For example, offering employees autonomy to make their working hours more flexible. This means that employees can have long weekends when they work beyond eight hours every weekday (following each country's working hours regulation). However, when overwork is necessary, organization must offer equitable compensation to employees who meet this expectation. This implication is consistent with other study findings that mentioned the adverse consequences of overwork may be mitigated through appropriate compensation for extra work (Beckers et al., 2008; Mazzetti et al., 2016).

Moreover, given the significance of sustainable innovative work behavior, it is essential to build a conducive climate to foster employee happiness at work in which could motivate employees to participate in more sustainable innovative practices. For example, organizations could organize various events to foster sustainable innovative work behavior, such as seminars, gatherings, or company games. The direct supervisor should also become a pioneer to build a supportive environment. This positive environment could motivate their subordinate to present their sustainable innovation ideas. For example, the direct supervisor could begin by explaining the sustainability goals and elucidating the organization's actions and how other people or our environment could benefit to advance these objectives. Ultimately, recognizing employees who contribute to sustainable innovation, whether via ideas or actions, is crucial for fostering such behavior.

Finally, our findings indicated that employees who adhere to negative reciprocity beliefs are more inclined to perceive an overwork climate as a source of stress, undermining their sustainable innovative work behavior to retaliate and communicate their unhappiness at work. This finding contrasts with employees who embrace positive reciprocity ideas. Consequently, organizations must foster positive reciprocity beliefs and mitigate negative reciprocity beliefs among their employees. For instance, it is essential to conduct weekly meetings where employees can present their suggestions and communicate any issues they

encounter to their supervisor. An employee needs also to be surrounded by others with a positive mentality. In this way, employees could self-direct, such as seeking coworkers with a pleasant disposition when they wish to discuss their issues.

Limitations and future research

This study is not without limitations, which suggest further research avenues. First, we focus on overwork climate as antecedents of sustainable innovative work behavior. It is interesting for future studies to consider and test similar constructs, yet each entailing its specifics, such as work overload, time pressure, and time demand. It is also crucial to consider the different factors of similar adverse organizational climate, for example, perceived organizational politics, workplace incivility, workplace ostracism, organizational cynicism, or competitive organizational climates. Nevertheless, different sustainable factors could also promote or mitigate sustainable innovative work behavior within the organization. For example, organizational green culture, green entrepreneurial orientation, green HRM.

Second, although we bring a new under-explored the construct of sustainable innovative work behavior, which was just introduced by Dehkordi and colleagues in 2024, exploring another sustainable-related constructs is also interesting. For example, future studies could consider exploring how our proposed construct affects sustainable performance, sustainable innovation, and green innovation. Moreover, focusing only on happiness at work is also a limitation. Before the introduction of happiness at work, prior research primarily focused on job satisfaction and mood to address employee happiness at work. Thus, future studies could be considered to test our proposed model regarding job satisfaction and mood. Moreover, the prior study mentioned that at the level of the individual, the study of the two conceptions of happiness involves a distinction between hedonic well-being and eudemonic well-being (Ryan & Deci, 2001). Considering these two conceptions of happiness is also interesting when building the next research model. Furthermore, it is widely known that

happiness and sadness exist in emotional states. Future studies could also address this sadness as an outcome variable. Perhaps comparing both variables as an outcome variable is preferable.

Third, a prior study mentioned that overworking employees in low-reward jobs results in harmful consequences such as poor recovery, burnout symptoms, and harmful work-home interference; in contrast, employees who work overtime but receive adequate rewards do not report more negative outcomes than employees who do not perform overwork (Van Der Hulst & Geurts, 2001). It is also important to consider the consequences of overwork climates. Moreover, it is also interesting to test different rewards as moderating in our proposed model. For example, organizations with extrinsic rewards (bonuses) or intrinsic rewards (recognition and appraisals). Perhaps comparing the moderating of reward and non-reward is also important to see how the proposed model might differ.

Last, our study focuses on taking the data from Indonesian employees. Focusing on working professionals employed within organizations in a single nation could be a limitation. With higher uncertainty avoidance, Hofstede (2010) mentioned that a country like Indonesia implies that employees may experience excessive workloads. Similarly, the high power distance in Indonesia also implies that Indonesian employees might associate work with responsibility. Thus, it is also interesting to test the model in countries with lower levels of uncertainty avoidance and power distance. Although several survey design elements were introduced to reduce standard method variance and estimates of interaction effects are less suspect (Podsakoff et al., 2012; Siemsen et al., 2010), it cannot be ruled out with complete certainty. Yet, although we have controlled for seven demography, we did not control precisely for employee jobs, organizational level, and sectors. Future studies could also include these as the control variable.

CONCLUSION

The current study contributes to the prior studies by examining how an overwork climate undermines employees' sustainable innovative work behavior. Our proposed hypotheses receive support through the direct relationship and the indirect connection mediated by happiness at work. Additionally, we discovered that employees with elevated negative reciprocity beliefs could exacerbate this negative relationship. Conversely, this unfavorable association diminishes when an employee possesses positive reciprocity ideas. Our findings may serve as a precursor for future research on how an overwork climate affects sustainable innovative work behavior.

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Figure 1

Research model with hypotheses

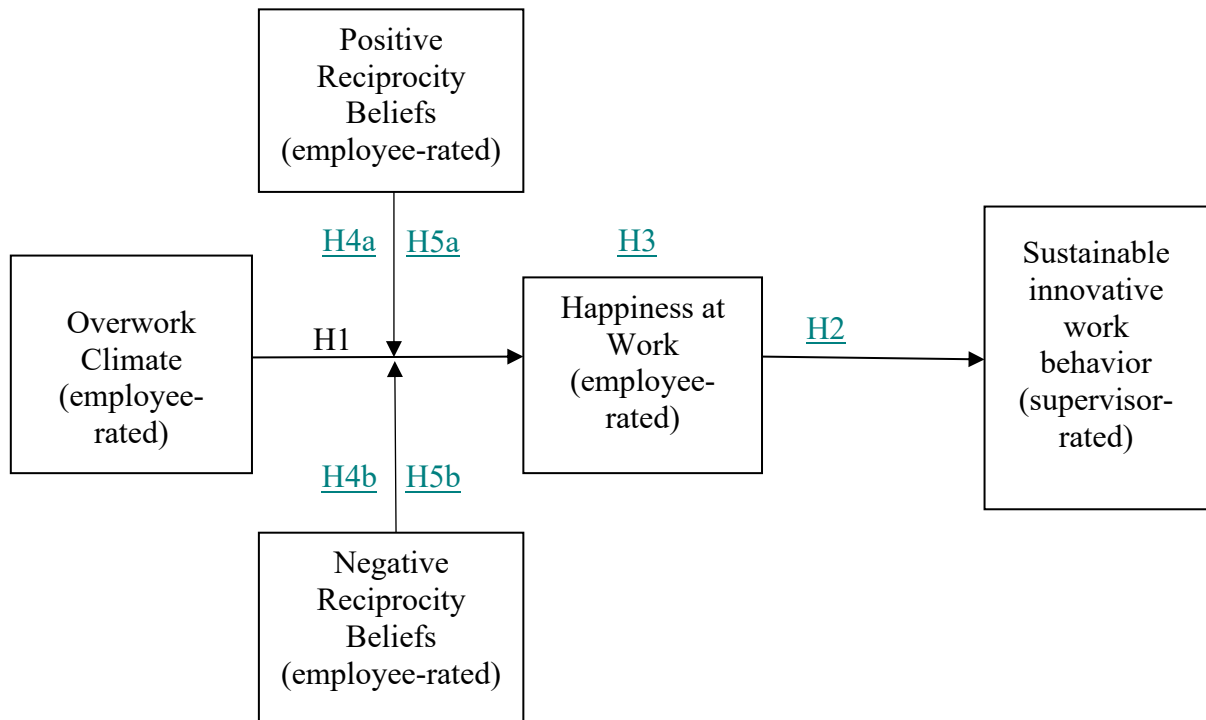


Figure 2
Moderating role of positive reciprocity beliefs

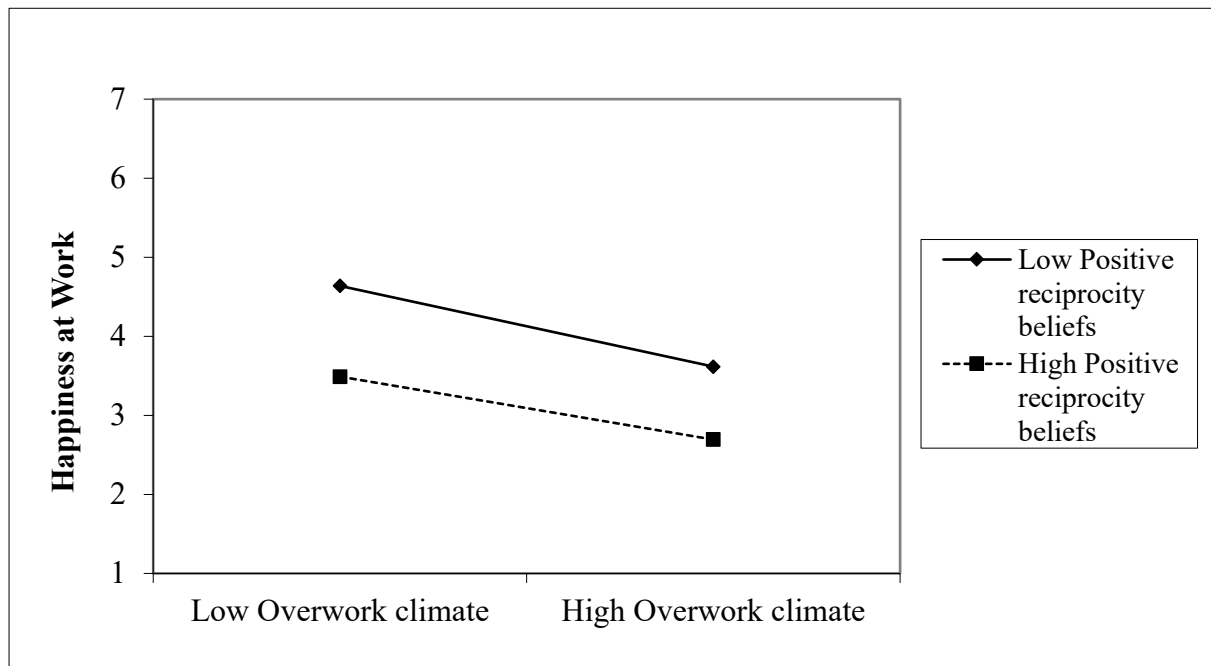


Figure 3
Moderating role of negative reciprocity beliefs

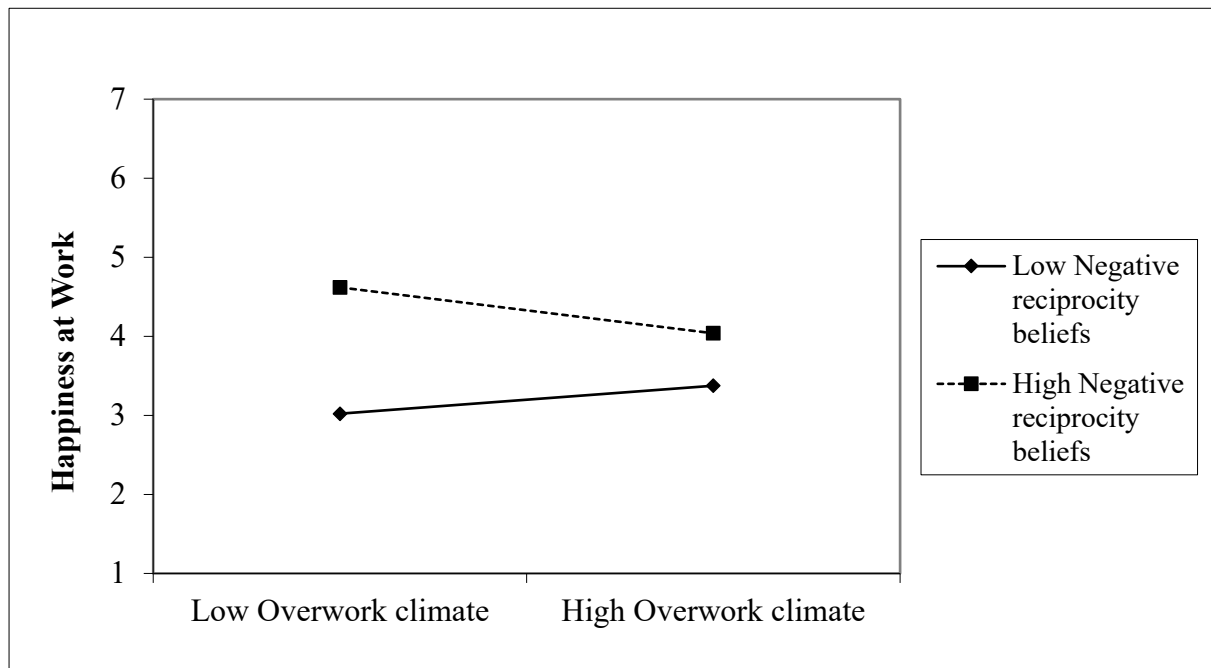


Table 1.**Demographic Characteristics of Participants**

Characteristics	Frequency	Percent
Gender		
Female	143	49.3%
Male	147	50.7%
Age		
18-24 Years old	86	29.7%
25-34 Years old	121	41.7%
35-44 Years old	52	17.9%
45-54 Years old	18	5.5%
55-64 Years old	15	5.2%
Tenure		
Below 1 Year	75	25.9%
1-2 Years	123	42.4%
3-4 Years	31	10.7%
5-6 Years	11	3.8%
More than 6 Years	50	17.2%
Education		
Below senior high school	61	21.0%
Senior high school	115	39.7%
Diploma I/II/III	47	16.2%
Undergraduate	49	16.9%
Master	17	5.9%
Doctoral	1	0.3%
Salary		
Less than Rp4,000,000,-	88	30.3%
Rp4,000,001,- to Rp6,000,000,-	111	38.3%
Rp6,000,001,- to Rp8,000,000,-	54	18.6%
Rp8,000,001,- to Rp10,000,000,-	17	5.9%
More than Rp10,000,001,-	20	6.9%
Marital Status		
Single	159	54.8%
Married	109	37.6%
Divorced	22	7.6%
Number of Children		
0	157	54.1%
1	40	13.8%
2	71	24.5%
3	17	5.9%
4	5	1.7%

Notes: n= 290

Table 1.**Model Fit**

	X ²	df	CFI	TLI	IFI	RMSEA	SRMR
Five Factors (overwork climate, positive reciprocity beliefs, negative reciprocity beliefs, happiness at work, sustainable innovative work behavior separately)	2242	619	.883	.874	.884	.066	.065
Four Factors (overwork climate, positive reciprocity beliefs + negative reciprocity beliefs, happiness at work, sustainable innovative work behavior separately)	3530	623	.761	.744	.762	.094	.103
Three Factors (overwork climate + positive reciprocity beliefs + negative reciprocity beliefs, happiness at work, sustainable innovative work behavior separately)	3686	626	.745	.728	.746	.096	.105
Two Factors (overwork climate + positive reciprocity beliefs + negative reciprocity beliefs + happiness at work, sustainable innovative work behavior separately)	4201	628	.695	.676	.696	.105	.117

Table 3.

Means, Standard Deviations and Correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Tenure	---											
2. Gender	-.045	---										
3. Age	.550**	.034	---									
4. Education	.548**	.102	.361**	---								
5. Salary	.511**	-.033	.351**	.504**	---							
6. Marital status	.105	.146*	.155**	-.002	.097	---						
7. Number of Children	.214**	.120*	.250**	.094	.080	.792**	---					
8. Overwork climate	.401**	.135*	.324**	.451**	.260**	.110	.229**	---				
9. Positive reciprocity	.380**	.069	.254**	.419**	.231**	.030	.152**	.451**	---			
10. Negative reciprocity	.636**	.097	.522**	.687**	.450**	.061	.211**	.659**	.537**	---		
11. Happiness at work	-.434**	-.058	-.331**	-.462**	-.271**	-.038	-.200**	-.542**	-.559**	-.725**	---	
12. SIWB	-.082	-.159**	-.040	-.095	-.004	-.064	-.035	-.160**	-.183**	-.183**	.243**	---
Mean	2.44	.51	2.15	2.48	2.21	1.53	.87	2.439	2.273	2.428	3.629	4.126
Standard deviation	1.371	.501	1.070	1.186	1.143	.634	1.079	.879	.875	.995	1.076	.628

Notes: n= 290. * $p < .05$; ** $p < .01$; two-tailed tests.

SIWB = Sustainable innovative work behavior

Table 3
Multiple Regression Results.

Variables	Happiness at work			SIWB	
	Step 1	Step 2	Step 3	Step 4	Step 5
Tenure	-.193**	-.136*	.001	-.105	-.051
Gender	-.032	.003	.095	-.148*	-.139*
Age	-.081	-.050	.043	.016	.039
Education	-.301***	-.189**	.096	-.079	.005
Salary	.007	.003	-.021	.082	.080
Marital status	.222**	.185*	.101	-.115	-.177
No of Child	-.282***	-.205*	-.115	.093	.171
Overwork climate		-.361***	.119		
Positive reciprocity			-.804***		
Negative reciprocity			.168		
Overwork climate × Positive reciprocity			.918***		
Overwork climate × Negative reciprocity			-1.348***		
Happiness at work					.277***
F	17.053***	22.573***	39.157***	1.795	1.374***
R ²	.297	.391	.629	.043	.096
ΔR ²		.094	.238		.053
Bias corrected 95% confidence interval ^a					
	Effect size	Bootstrap SE	LLCI	ULCI	
Happiness at work	-.067	.021	-.112	-.028	

Notes. N = 290. Standardized beta coefficients are presented;

⁺p<.10; *p < .05; **p < .01; ***p < .001; ^a5000 bootstrap samples were employed

Table 4**Moderated Mediation Results**

Positive reciprocity beliefs	Effect	Bootstrap SE	Bootstrap LLCI	Bootstrap ULCI
-1 SD	-.606	-.025	-.057	-.001
Mean	-.273	-.018	-.047	.000
+1SD	.887	.005	-.021	.026
Index of moderated mediation	.020	.010	.002	.042
Negative reciprocity beliefs	Effect	Bootstrap SE	Bootstrap LLCI	Bootstrap ULCI
-1 SD	-.762	.020	-.000	.048
Mean	-.428	.011	-.008	.032
+1SD	1.349	-.041	-.090	-.008
Index of moderated mediation	-.029	.013	-.058	-.008

Notes. N = 290; SE = standard error;

LLCI = lower limit confidence interval; ULCI = upper limit confidence interval.