How playfulness climate promotes the performance of millennial employees – the mediating role of change self-efficacy

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Abstract
Purpose – The effect of playfulness climate on employees in firms has been the subject of an increasing number of studies in recent years. Given the growing number of businesses that have incorporated playfulness into their operations, it is possible to enhance the task performance and innovative performance of the younger generation of workers by rationally managing playfulness, particularly when it comes to that aspect of the workplace. Based on the conservation of resources theory, this study aims to investigate how the playfulness climate in organizations influences the change self-efficacy of the millennial workers and how to enhance their task performance and innovation performance.

Design/methodology/approach – The authors used a quantitative approach to test the relationship between the hypotheses. The survey population for this study consisted of the millennial workers in the computer sector who are involved in research and development in China. Hierarchical regression analysis was used to test the built mediation model empirically over the course of the study’s three rounds of data collection, each separated by one month. Through the collection of paired questions for leadership and their subordinates, 424 valid questionnaires were obtained.

Findings – The examination of the questionnaire results supports the study’s theoretical hypothesis, which states that when millennial workers sense a more playfulness work environment, it will encourage them to develop a sense of change self-efficacy. Additionally, they will be better able to handle work-related responsibilities and come up with innovative ideas as a result of change self-efficacy, which would eventually enhance the task performance and innovation performance of millennial employees.

Originality/value – By introducing the mediation of change self-efficacy, this study expands on the application of the conservation of resources theory. The research on the performance of millennial employees is complemented and enhanced by investigating the relationship between the playfulness climate and employees’ task performance and innovation performance from the perspective of their sense of change self-efficacy. This study also reveals that managers should foster a positive and playfulness environment in their workplaces in order to manage the performance of millennial employees.

Keywords Playfulness climate, Change self-efficacy, Task performance, Innovation performance, Millennial employees

Paper type Research paper

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**Introduction**

The frequent emergence of online buzzwords like “996” [1] and “corporate slave” in China has sparked discussions and concerns about the country’s contemporary social climate (Zhen, 2021). Play is play and work is work, traditionally, and they are on different ends of the spectrum (Ibarra and Petriglieri, 2010). Playing is regarded as an ineffective behavior that can cause employee distraction and have detrimental effects, such as decreased performance (Webster and Martocchio, 1993). But in recent years, scholars have expanded their theoretical research on adult playfulness to the workplace and discovered that work and playfulness are not mutually exclusive (Bakker et al., 2020). Numerous businesses will incorporate elements of play and enjoyment into their organizational management, work design, and cultural atmosphere construction as part of their actual management activities and these practices can foster a playfulness work climate for employees, increase employee participation, and invigorate staff members (Zhou et al., 2019). Google, for instance, is dedicated to fostering a “free and comfortable work environment”. Alibaba has adopted the name “Dharma Institute” from Jin Yong’s novels to convey the spirit of dedication to its employees and to encourage them to practice the “height of perfection” (Gong et al., 2020). The role effects of playfulness are controversial, so more research is needed to determine the mechanisms and prevalence of playfulness in the workplace while also examining the positive effects of playfulness in organizations.

Playful activities benefit employees' cognition, emotions, and motivation in addition to improving the organization’s capacity for innovation and decision-making (Celestine and Yeo, 2021). Because the organization’s focus on encouraging fun at work may not be on engaging in fun activities, but on creating a fun and relaxed working climate (Yu et al., 2003). Nowadays, study is concentrated on the effects of a playfulness climate on workers’ emotions, attitudes, and behavior, with an emphasis on corporate performance (Celestine and Yeo, 2021). Although research has first discovered a relationship between playfulness climate and performance, the processes through which playfulness climate affects worker performance are not well understood (Petelczyc et al., 2018). Therefore, understanding the mechanisms by which playfulness climate affects individual performance is not only of theoretical importance, but can also inform the management practices of managers who intervene in the performance of their employees.

Some studies have shown that new generation employees are more focused on personal development and work balance than traditional employees, and prefer a more autonomous and innovative work environment (Nelson and Duxbury, 2021). In addition, new generation employees have higher expectations of the organization’s culture and values, as well as a greater concern for the organization’s social responsibility and sustainability (Weber, 2017). They are also more adept at using technology tools to communicate and collaborate, and place a higher value on multicultural inclusiveness (Lyons and Kuron, 2014). In response to these characteristics, organizations need to be more flexible and innovative in their management practices to better meet the needs and expectations of the new generation of employees (Zhuo and Yuan, 2022). Therefore, in the face of the rise of a playfulness climate in organizations, it remains to be further explored how millennial employees will be affected by it and how it will have an impact on performance.

Change self-efficacy is a positive cognitive orientation (Vardaman et al., 2012), a personal resource that can be built through access to information and social interaction support, making employees more likely to support and promote organizational change, proactively engage in innovative work behaviors (Albrecht et al., 2023) and enhance innovation performance. Playfulness climate is rich in psychological and social resources, and there is a lack of research on its positive influence mechanism on employees from the perspectives of resource construction or resource supplementation. Therefore, this study attempts to select change self-efficacy to explain how the playfulness climate affects the psychological
processes of millennial employees from the perspective of resource conservation. This study focuses on the question of how playfulness climate affects the performance of millennial employees and it aims to solve the follow issues:

RQ1. How does the playfulness climate advocated in an organization affect employees’ psychological processes?

RQ2. Does the sense of change self-efficacy play a mediating role between the playfulness climate and individual performance?

In summary, this study investigates the mechanism of playfulness climate on employee performance (task performance and innovation performance) from the perspective of employee resource replenishment and construction based on the conservation of resources theory, and explores the mediating effect of change self-efficacy. Firstly, it enriches and extends previous studies from the perspectives of self-determination theory (Scharp et al., 2022), social information processing theory (Petelczyc et al., 2018) and mind-flow theory, and facilitates a more systematic understanding of the mechanisms underlying the role of playfulness climate. Secondly, it enriches the research on playfulness climate, change self-efficacy and employee performance at the theoretical level, responding to Petelczyc et al.’s (Petelczyc et al., 2018) call for broadening the theoretical basis of playfulness research. Finally, the selection of employee innovation performance and task performance as outcome variables of playfulness climate breaks the previous limitation of focusing only on employee innovation performance when exploring the role of playfulness climate, which is conducive to a clearer interpretation of the effects of this climate.

Literature review and hypotheses development

Playfulness climate and task performance

Task performance is an evaluation of the employee’s behavior and results in completing his or her job, and requires the basic skills that the employee must have to complete the task (Janssen and Van Yperen, 2004). A summary of the existing research on playfulness climate and its conceptual definition reveals that playfulness climate has the following qualities: (1) clear and open communication between employees and a sense of teamwork; (2) free and open team management and leadership style; (3) support and encouragement of creativity; (4) a high degree of autonomy in employees’ work; (5) a laid-back and interactive space environment; and (6) leisure and fun to be had (Van Vleet and Feeney, 2015).

First of all, being fun makes workers feel more in control and competent at work, resulting in a “mind-flow experience” where they are totally absorbed in difficult tasks (Csikszentmihalyi, 1975). Secondly, a playfulness climate encourages various playful activities that increase employees’ dedication and sense of responsibility, favorably influencing how well they do tasks (Celestine and Yeo, 2021). Finally, this kind of climate promotes the physical and mental wellbeing of workers by relieving stress and lowering negative emotions (Van Vleet and Feeney, 2015). For instance, a playfulness climate may encourage employees to take short breaks in the workplace and it has been found that workplace short breaks increase employee productivity by triggering emotional and recovery mechanisms (Chong et al., 2020).

The “create-recover-recreate” path is the foundation for how a playfulness climate affects task performance of employees. “Create” is encouraging individual devotion and focus on the task at hand while energizing workers in a playfulness climate (Zhou et al., 2019). In addition, the playfulness climate encourages employees to rationalize their work and free time, which lessens physical and mental exhaustion at work and activates a “recover” stage (Tews et al., 2014). “Recreate” also refers to playful interventions in the workplace that support the
restoration of a person’s energy and emotional resources, enhancing their performance in future activities (Petelczyc et al., 2018). In general, a playfulness climate influences employees’ work status and recovery processes, which in turn positively predicts their task performance (R. Fluegge-Woolf, 2014).

Employees may get depleted of their emotional, energetic, and other physical, psychological, and social resources as a result of this performance pressure (Yu et al., 2007). The ability of a person to obtain, safeguard, and retain resources that are crucial to finishing a task is at the center of the conservation of resource theory (Hobfoll, 1989). The individual’s resources can be utilized to build and preserve present resource reserves, acquire additional resources to lessen net resource loss, and also prepare for future resource loss (Hobfoll et al., 2018). In order to deal with the resource drain that performance pressure may bring or has already generated, employees absorb the positive aspects of a playful environment, giving work a “playful” label, relieving fatigue or burnout caused by performance pressure as well as boredom and a lack of meaning caused by repetitive work content, and as a result, invest more time and energy in their tasks (Petelczyc et al., 2018). Moreover, a playful work environment where staff members have some authority and influence over their tasks can boost trust, which in turn promotes job immersion and better task performance (Csikszentmihalyi, 1975). Therefore, we can put forward the hypothesis that:

**H1.** Playfulness climate positively influences individual task performance.

*Playfulness climate and innovation performance*

Innovative behavior comprises coming up with and putting into practice new ideas, which are partially motivated by self-interest and partially by altruism as employees fulfill their obligations under their employment roles in the organization (Liu et al., 2022). Innovation requires breaking the mould and is a highly uncertain, risky and resource-intensive activity (Kimberly and Evanisko, 1981). In organizations with a playfulness climate, employees are inspired by the friendly interaction with colleagues (Baxter, 1992). Workers can exercise their ideas openly in a playful environment, improve their psychological safety under the supportive and inclusive conditions provided by the organization and leadership (Rhoades and Eisenberger, 2002), and quickly bounce back from creative failures to keep learning and innovation alive. Employees can readily develop the psychological and social resources necessary to produce inventive performance in workplace with playfulness climate (Celestine and Yeo, 2021).

A playfulness climate promotes innovative performance by influencing employees’ psychological perceptions and needs (Celestine and Yeo, 2021). Employees regard themselves as engaging in fun and enjoyment rather than doing job tasks when they turn work tasks into playful activities (Glynn and Webster, 1992). As a result, when jobs are labeled as entertaining, employees spend more time on them and actively look for new ways to address issues, which boosts their performance in terms of innovation (Petelczyc et al., 2018). A playfulness climate also encourages employees to feel engaged and happy at work, which in turn encourages them to view difficult jobs as enjoyable activities and, as a result, fosters innovation (Liu et al., 2022). Also, a playfulness climate can foster the development of intimate bonds of trust among coworkers and heighten psychological security (Van Vleet and Feeney, 2015), both of which have been proven in prior studies to be important positive predictors of inventive behavior (Chen et al., 2016).

Empirical studies have also found that a playfulness climate positively predicts employees’ innovative behavior and innovative performance (Liu et al., 2022). Specifically, a playfulness climate enhances individual innovation performance by increasing employees’ commitment to their work (R. Fluegge-Woolf, 2014). Playful activity prompts in the
workplace can facilitate the translation of training content and enhance the effectiveness of creative sessions (Webster and Martocchio, 1993). A playfulness climate fosters creativity and inventive behavior, and creativity and innovative behavior are strongly and favorably associated to employees’ innovative performance (Celestine and Yeo, 2021). In addition, the playfulness climate often interacts with individual playfulness traits, stimulating energy and enthusiasm and positively influencing employees’ innovative behavior (Zhou et al., 2019). Therefore, we can put forward the hypothesis that:

H2. Playfulness climate positively influences individual innovation performance.

Playfulness climate and change self-efficacy
Self-efficacy is the level of self-assurance a person has in their ability to use their talents to perform a job (Bandura, 1977). It gives workers more assurance that they can accomplish their work-related goals and may encourage more proactive behavior (Gist and Mitchell, 1992). Self-efficacy is dynamic and can appear in a variety of ways depending on the circumstances at work (Tierney and Farmer, 2002). Change self-efficacy is the degree of confidence employees show in their personal reserves (knowledge, skills, etc.) to do their jobs in response to changing circumstances and changing demands (Ashford, 1988; Wanberg and Banas, 2000).

According to the principle of “resource convoys and pathways” in the conservation of resource theory, resources are always present in a particular ecological environment, and environmental conditions can nurture and nourish the resources present therein (Hobfoll, 1989). In Gist and Mitchell’s (Gist and Mitchell, 1992) theoretical model of the relationship between self-efficacy and performance, the “evaluation of individual and environmental resources or constraints” as one of the determinants of self-efficacy in a particular domain is essentially a cognitive evaluation of environmental factors. Being a member in organizations with a playfulness climate creates more positive beliefs about the ability to cope with a changing environment, leading to a greater sense of change-related self-efficacy and change self-efficacy offers a personal resource of energy in the face of changing circumstances (Yang et al., 2023).

Specifically, employees’ sense of change effectiveness is facilitated by access to information in social networks (Dehghani Soltani et al., 2021; Jimmieson et al., 2004; Zala-Mezo et al., 2019), smooth communication (Dehghani Soltani et al., 2021), job autonomy and increased organizational support (Kalyal and Grabarski, 2021). It also enables employees to access the information they require for their jobs or other purposes, enhances their understanding of changing circumstances and work, and raises their change self-efficacy. At the same time, the organization embraces openness and change, and giving employees a degree of autonomy also increases their confidence and evaluation of their own abilities, which in turn increases their change self-efficacy. Therefore, we can put forward the hypothesis that:

H3. Playfulness climate positively influences the individual’s change self-efficacy.

Change self-efficacy and individual performance
Change self-efficacy is a specific sense of self-efficacy, but its core level of confidence in completing tasks remains unchanged (Tierney and Farmer, 2002). People with a high sense of change self-efficacy always believe they can do the tasks set out for them well and tend not to be easily influenced by external factors (Munir and Nielsen, 2009). When faced with high levels of job uncertainty and new job demands, employees with high change self-efficacy have a sense of control over their work and will see difficulties and challenges as an opportunity (Fugate et al., 2012). As a result, they work harder and are able to maintain a more stable or higher level of work, thus sustaining high levels of performance.
Employees with a high sense of change self-efficacy are more likely to support and contribute to organizational change, have higher energy to engage in their work and be proactive in engaging in innovative work behaviors (Albrecht et al., 2023). Employees who have a high sense of change self-efficacy do not perceive the challenges of a changing environment as a threat, but rather as opportunities, responding to new changes with an open attitude, facing challenges with confidence, and continuously developing new ideas, exploring new methods, and solving real-world problems, which has a significant impact on individual innovation performance (Tierney and Farmer, 2002). Therefore, we can put forward the hypothesis that:

**H4.** Individual change self-efficacy positively affects employee task performance.

**H5.** Individual change self-efficacy positively affects employee innovation performance.

The mediating effect of change self-efficacy

According to the conservation of resource theory, people are more inclined to acquire new resources if they have more initial resources (Hobfoll, 1989; Hobfoll et al., 2018). A unique resource that the organization offers and that employees can sense is the culture of team play (Luria, 2019). This resource creates a resource acquisition spiral by enhancing employees’ initial resources and encouraging the acquisition of new ones (Hobfoll et al., 2018). Through interaction with coworkers to create a flow of information, knowledge, and resources, playfulness climate specifically creates a relaxed and enjoyable environment full of autonomy and freedom for employees (Glisson and James, 2002). This satisfies their sense of security, belonging, and trust and boosts their confidence in their work and indirect experience dealing with the demands of change (Luria, 2019). Stronger team cohesion also allows employees to establish a sense of community of interest between themselves and the team, where they learn and grow and improve their skills and knowledge (Zhou et al., 2019). A playfulness climate empowers employees, increases their confidence and ability to cope with change, and enhances their change self-efficacy.

Employees’ psychological resources will be further complemented by the sense of change self-efficacy as a situational personal characteristic resource, which will use them to invest in their work and have positive results (Hobfoll et al., 2018). Employees who have a high level of change self-efficacy believe they have a solid knowledge or skill base, can handle a variety of job demands, and put forth a lot of effort to complete their tasks (Choi et al., 2003). They are also more willing to learn new skills to expand their work capabilities and increase their efficiency and completion, which has a positive effect on task performance (Gist and Mitchell, 1992). Employees with a high sense of change self-efficacy are more motivated and driven to think creatively, explore novel ideas, reach their innovative performance goals and achieve success (Tierney and Farmer, 2002). High change self-efficacy is a positive affective cognitive orientation, often with more confidence in their work, a persistent positive attitude towards difficulties and a knack for identifying opportunities in problems, which further stimulates innovative behavior (Yang et al., 2023).

In conclusion, organizations with a high level of playfulness climate can make workers enjoy their work by satisfying their information access, work autonomy, and social interaction, boosting their sense of change self-efficacy, encouraging proactive behavior, and fostering task performance and innovation performance. Therefore, we can put forward the hypothesis that:

**H6.** The change self-efficacy has a mediating effect between the playfulness climate and individual task performance.

**H7.** The change self-efficacy has a mediating effect between the playfulness climate and individual innovation performance.
Therefore, the conceptual framework is shown in Figure 1.

Methodology

Sample and data
This study focuses on investigating the individual performance of millennial workers, so we selected millennial workers in the organizations. We conducted a questionnaire survey among 15 enterprises in Changsha, Zhuzhou, Xiangtan and Wuhan to collect data. The survey population for this study consisted of the millennial workers in the computer sector who are involved in R&D in these organizations. In order to avoid common method bias, we adopt a multi-stage design and collect the survey data of employees and their supervisors in three stages. During the investigation, we communicated with the human resources management department of each company at the beginning, and then human resources department shall communicate with all relevant departments and explain the purpose of our questionnaire survey. We first asked the human resources department to determine the list of the employees surveyed and numbered the matched questionnaires according to the list and we collected data at three different time. After communicating with relevant departments, we asked the staff to evaluate the playfulness climate level (Time point 1). After about one month (Time point 2), we asked the employees to report the scores of their change self-efficacy. After about one month (Time point 3), we asked the supervisors of employees to evaluate their task performance and innovation performance respectively. At the time point 1, 550 employees participated in our questionnaire survey, of which 489 valid questionnaires were returned and the response rate was 88.9%. At the time point 2, the 489 employees continued to participate in our questionnaire survey, of which 457 valid questionnaires were returned, and the questionnaire recovery rate was 93.5%. Finally, at the time point 3, the 457 employees continued to participated in our questionnaire survey, among which 424 valid questionnaires were returned, and the questionnaire recovery rate was 92.7%. Due to the following reasons, we deleted some relevant data: (1) the subjects filled in the wrong screening items in the questionnaire, (2) The data of main variables are missing seriously (such as not reported or filled in), (3) The time of filling in the questionnaire is too short. The descriptive statistical results of the questionnaire are shown in Table 1.

Measures
In order to ensure the reliability and validity of the questionnaire, the scales used in this study are mature scales published in mainstream journals. All the scales published in English journals were translated and retranslated to avoid semantic ambiguity. At the same time, the questionnaire was measured by anonymous self-assessment. The questionnaire was scored

**Playfulness climate.** The measurement of playfulness climate used the scale proposed by (Yu et al., 2003) and included the following 4 dimensions: leadership support, pleasure in leisure, cooperation and intimacy, and humor and happiness. The variable data were collected at T1 and self-assessed by the employees.

**Change self-efficacy.** The change self-efficacy scale is based on a modified version of the scale developed by Wanberg and Banas (2000) and consists of four items, including “I am comfortable with organizational change, regardless of the area in which it occurs”. The variable data were collected at T2 and self-assessed by the employees.

**Task performance.** We used four items from an instrument reported by Williams and Anderson (1991) to measure task performance. These items had the highest factor loadings reported by Williams and Anderson. Sample items include: “Adequately completes assigned duties”, “Performs tasks that are expected of him/her”, “Meets formal performance requirements of the job”, and “Engage in activities that will directly affect his/her performance evaluation.” The variable data were collected at T3 and assessed by one’s direct supervisor.

**Innovation performance.** We used four items from an instrument reported by Janssen and Van Yperen (2004) to measure innovation performance. These items had the highest factor loadings reported by Janssen and Van Yperen. Sample items include: “Creating new ideas for improvements”, “Searching out new working methods, techniques, or instruments”, “Transforming innovative ideas into useful applications” and “Making important organizational members enthusiastic for innovative ideas”. The variable data were collected at T3 and assessed by one’s direct supervisor.
Controls. Individual gender, age, education and tenure were controlled in this study.

Reliability and validity
SPSS 28.0 was used to analyze the internal consistency coefficient to test the reliability of each scale. The analysis results show that the Cronbach’s alpha coefficient of the perceived playfulness climate, change self-efficacy, task performance and innovation performance were 0.955, 0.870, 0.897 and 0.915, respectively, which were higher than the minimum standard of 0.7, indicating that the scale has good reliability.

Analysis and results
The means, standard deviation and correlations of variables are displayed in Table 2. Among them, individual gender, age, education background and tenure are the selected as control variables. According to Table 2, we can see that: (1) change self-efficacy and perceived playfulness climate are significantly positively correlated ($r = 0.405, p < 0.01$), (2) task performance and perceived playfulness climate are significantly positively correlated ($r = 0.160, p < 0.01$), (3) task performance and change self-efficacy are significantly positively correlated ($r = 0.125, p < 0.01$), (4) innovation performance and perceived playfulness climate are significantly positively correlated ($r = 0.146, p < 0.01$), (5) innovation performance and change self-efficacy are significantly positively correlated ($r = 0.150, p < 0.01$).

Hierarchical regression analysis was used to test the mediating effect of change self-efficacy on the relationship between perceived playfulness climate and individual performance. Firstly, the change self-efficacy is taken as the dependent variable, and then the items of control variable and perceived playfulness climate are put into regression analysis. Then, taking task performance as the dependent variable, the regression analysis is carried out with control variables, perceived playfulness climate and change self-efficacy. In Table 3, model 2 shows that perceived playfulness climate has a significant positive impact on change self-efficacy ($\beta = 0.366, p < 0.001$), and the hypothesis H3 is valid; model 4 shows that change self-efficacy has a significant positive impact on task performance ($\beta = 0.148, p < 0.01$), and the hypothesis H4 is valid; model 5 shows that perceived playfulness climate has a significant positive impact on task performance ($\beta = 0.135, p < 0.01$), which means that the change self-efficacy has a mediating role between the perceived playfulness climate and

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<td>6. Change self-efficacy</td>
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<td>7. Task performance</td>
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<td>0.082</td>
<td>0.160**</td>
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Table 2. Means, standard deviations and correlations

Note(s): $n = 424, **p < 0.01, *p < 0.05$
Source(s): Authors’ work
Table 3. The results of Hierarchical regression analysis  

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<th>Dependent variable</th>
<th>Change self-efficacy</th>
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<th>Innovation performance</th>
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<tr>
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<td>Model 1</td>
<td>Model 2</td>
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<td><strong>Control variables</strong></td>
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<td><strong>Independent variables</strong></td>
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<td>Perceived playfulness climate</td>
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<td>0.166*** (0.046)</td>
<td>0.135** (0.050)</td>
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<td>Change self-efficacy</td>
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<td>0.086 (0.056)</td>
<td>0.190** (0.059)</td>
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**Note(s):** *p < 0.05, **p < 0.01, ***p < 0.001

**Source(s):** Authors’ work
task performance and the hypothesis H6 is valid; model 8 shows that change self-efficacy has a significant positive impact on innovation performance ($\beta = 0.190, p < 0.01$), and the hypothesis H5 is valid; model 9 shows that perceived playfulness climate has a significant positive impact on innovation performance ($\beta = 0.174, p < 0.001$), and the hypothesis H2 is valid; in model 10, comparing with the model 9, perceived playfulness climate has a significant positive impact on innovation performance ($\beta = 0.125, p < 0.05$), which means that the change self-efficacy has a mediating role between the perceived playfulness climate and innovation performance and the hypothesis H7 is tested.

Discussion
From the conservation of resources theory, this study explores the impact of playfulness climate on the task performance and innovation performance of new generation employees, and explores the mediating role of the change self-efficacy. The results show that the playfulness climate has a significant positive impact on employees' task performance and innovation performance. That means a playfulness climate encourages employees in a playfulness climate to improve their task performance and innovation performance. At the same time, the playfulness climate in the organization can bring positive psychological resources - a sense of change self-efficacy - to employees. Under the influence of this sense of self-efficacy, employees' task and innovation performance have been improved, which is very important to millennial employees.

Theoretical implications
Unlike earlier research that only looked at the individual level of the effects of play activities on corporate employees, this study focuses on the impact of a particular organizational climate - the playfulness climate - on the performance of new-generation employees. Prior researches have examined the impact of personal playfulness characteristics and play activities on the mental, emotional, and behavioral states of workers on an individual level. For example, playful activities can alleviate an individual's depression, enhance well-being (Proyer et al., 2021), promote innovative behaviors (Liu et al., 2022) and increase job satisfaction (Yu et al., 2007). Despite confirming playfulness's enabling effect on individual performance, Yu et al. did not elucidate playfulness's intermediary mechanistic role (Yu et al., 2007). This study enriches the study of playfulness climate on employee performance at a theoretical level, responding to Petelczyc et al.'s call for a broadening of the theoretical foundations of playfulness research (Petelczyc et al., 2018). The study's findings not only demonstrated the benefits of group playfulness, but they also illuminated the mechanism by which employee performance is impacted by playfulness in businesses, offering fresh insights and recommendations for future research on the topic. Theoretically, this study extends the conservation of resources theory by exploring the positive effects of a playfulness climate, providing a plausible theoretical explanation to validate the positive influence of employees' playfulness at work.

Secondly, this study verified that change self-efficacy mediates the relationship of playfulness climate and individual performance, enriching the research on change self-efficacy antecedent and outcome variables. That means workers who work in playful environments have access to favorable psychological resources (Vardaman et al., 2012). Individuals' change self-efficacy can support the building of personal resources through access to information and social interactions, making employees more likely to support and contribute to organizational change and proactively engage in innovative work behaviors (Albrecht et al., 2023). Therefore, the present study enriches and extends previous studies.
from the perspectives of self-determination theory (Scharp et al., 2022), social information processing theory (Petelczyc et al., 2018) and mind-flow theory, and facilitates a more systematic understanding of the mechanism of playfulness climate.

Finally, this study enriches the research on specific climate types in organizations and influences on outcomes for playfulness climate research. The playfulness climate, as an emerging organizational climate, is more likely to fit the work values and personality traits of millennial employees and promote the output of such employees at workplace (Lyons and Kuron, 2014; Rudolph et al., 2020). A playfulness climate in an organization as a process climate, unlike a strategic climate (innovation climate, service climate, safety climate, etc.), is a daily management style that does not emphasize a certain strategic outcome output (Ehrhart et al., 2014). Therefore, the playfulness climate will not cause some stress to the employees, but on the contrary may alleviate their tension, fatigue, etc., keeping them physically and mentally healthy, which in turn promotes strategic results. Especially in organizations that emphasize innovative output, creating a good playful atmosphere is more conducive to the innovative output of new generation employees. The study of the effect of playfulness climate on the performance of new generation employees provides a new research perspective on the performance management of millennial employees at present.

Managerial implications
This study further enriches the antecedent research on the performance of new generation employees by revealing the effect of playfulness climate in organizations on their performance from the perspective of resources conservation. Companies can learn from the mature playful management experience of Google and Tencent according to their own business or product characteristics, and create a playfulness climate for employees through changes in work design and space environment such as work reinvention, incorporating game elements into performance assessment methods, and opening up creative game spaces, so that employees can “work in play and play in work”.

Meanwhile, the mediating role of change self-efficacy explains how this sense of efficacy facilitates individual task performance and innovation performance. Organizations should also prioritize creating more relaxed, fun, and free communication environments and possibilities, using playfulness as a bridge to encourage more communication and exchange among people. The closeness, friendliness, and communication among team members, as well as their appreciation of emotional outbursts and support, comfort level, mutual recognition, and positive interactions, all help to foster a strong sense of camaraderie and the development of implicit cooperation and teamwork. To explore the pleasure and sense of meaning of work in this positive psychological resource, managers can enhance an individual’s change self-efficacy in the organization through many means in addition to creating a playfulness climate.

The playful atmosphere of an organization is important for its innovation. Due to the autonomous nature of R&D staff’s work, relaxed and flexible working hours and working environment are important to maintain innovative thinking among employees. Employers should implement goal management strategies, offer a free and open work environment, and delegate less control and more support to their staff. This starts a calming process of inspiration or brewing before coming up with innovative ideas. It also creates a delightful experience of collaborating closely with colleagues to boost creativity in order to finish developing new items or finding solutions to issues.

Limitation and future directions
Although the study explains why individual perceived playfulness affects individual performance at the individual level, it still has some shortcomings. Firstly, this study
measured individual perceptions of fun, a variable that could be aggregated to the team level in future studies to better explain the relationship between playfulness climate and performance. Therefore, in future research, we should aggregate individual perceptions of climate to the team level and use a cross-level analysis to investigate the effects of playfulness climate on individual performance.

The article explains how individual change efficacy as an important mediating mechanism has an impact on individual task performance and innovation performance, and future research could consider examining the role of other mediating mechanisms between the playfulness climate and individual's performance, such as individual motivation.

Finally, although this study explored the relationship between playfulness climate and performance, it neglected the influence of boundary effects, and future research could consider the role of leadership and individual characteristics in this relationship in terms of boundaries. For example, future research could consider leadership style as a moderating variable, or individual personality traits.

Notes
1. “996” means that an employee works from 9:00 a.m. to 9:00 p.m. for six days in a week in most Chinese corporations.

References


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