

Reducing the Harmful Impact of Work Stress on Creativity? Buffering Model of Available Resources

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Abstract

How work stress affects creativity has attracted the attention of both enterprises and scholars. Hindrance work stress and Excessive challenge work stress usually impair creativity. However, how to buffer the impairment of work stress on creativity has not been studied in depth. Based on the Job Demands-Resources Model, this study proposes that available resources of employees can buffer the harmful impact of work stress on creativity. Available resources can buffer the negative impact of work stress by supplementing the depleted resources of motivation, cognition, emotion. Future research should explore other moderators that can buffer the impact of stress on creativity, how to buffer the influence of stress on creativity when multiple resources coexist and the boundary conditions under which available resources can play a buffering role, and finally carry out field study to apply the research results to management practice.

Keywords

Work Stress, Creativity, Work Demands-Resources Model, Buffering Effect

1. Introduction

The 2019 government work report points out that innovation is the first driving force to lead development, and new driving force is the hope of China's development. It is self-evident that the state attaches great importance to innovation, and creativity is an important source of innovation. Creativity refers to novel and appropriate ideas, solutions or products provided by individuals in certain situations (Byron, Khazanchi, & Nazarian, 2010). Creativity is a key factor for the success of organizations and individuals (Baer & Oldham, 2006). Creative

employees are more likely to put forward new ideas, bring positive changes to the organization, and then bring considerable economic benefits (Maimone & Sinclair, 2014). Considering the importance of creativity, scholars have done a lot of researches on the factors affecting creativity, among which work pressure is one of the important factors affecting creativity. Work stress is very common in work situations. It refers to the psychological experience when the work requirements of employees exceed expectations (Ursin & Eriksen, 2004). Many studies have shown that work stress can damage creativity (Khedhauria, Montani, & Thurik, 2017).

Cavanaugh, Boswell, Roehling, & Boudreau (2000) classified work stressors into challenge stress and hindrance stress. Challenging stress is often regarded as an opportunity for individuals to grow, learn and earn achievement, while hindrance stress is associated with excessive or unpredictable work requirements, which often hinder individuals from achieving their work goals. At present, the negative effects of hindrance stress on creativity have reached a more consistent result, while for challenge stress, scholars think that it can promote creativity generally (Ohly & Fritz, 2010). However, with the deepening of research, researchers found that even challenging stress can damage creativity when it is too excessive (Khedhaoria et al., 2017). In addition, when hindrance stress and challenge stress coexist, the negative effect of hindrance stress is the most significant (Pearsall, Ellis, & Stein, 2009). Therefore, although stress can promote creativity in some cases, the damaging effect of work stress on creativity is also very common.

Considering the possible damaging effect of work pressure on creativity, it is more practical to explore how to buffer the damage of work pressure on creativity than to argue about how work pressure will affect creativity. The discussion of buffering mechanism is not only conducive to the comprehensive exploration of the theoretical mechanism of work pressure affecting creativity, but also provides theoretical guidance for the development of human resource management system to help employees cope with work pressure and enhance creativity. Although some scholars have explored how organizational or individual characteristics buffer the damage of work stress on creativity from the perspectives of work control (Binnewies, & Wornlein, 2011), regulatory orientation (Liu, Wang, Ren, & Liu, 2017), there are few researches on buffer factors, and there is no systematic theoretical model to explain the buffering mechanism.

Based on this, this paper focuses on how to reduce the negative impact of work stress on creativity through buffering mechanism when work stress will cause possible damage to creativity. Firstly this paper reviews the researches on the influence of work pressure on creativity, and finds that although work pressure may promote creativity, the damaging effect of work pressure on creativity is also very common. Work pressure mainly affects creativity by mobilizing or wasting employees' motivation, cognition, emotion resources. Then, according to the work demands-resources model, a buffering model of available resources is proposed: the external and internal resources of employees can reduce the

damage of work pressure on their own motivation, cognition or emotion, so as to buffer the negative impact of work pressure on creativity. Finally, the prospect is put forward to provide reference for future research.

2. The Impact of Work Stress on Creativity

2.1. The Effect of Work Pressure on Creativity

Different theories explain the influence of stress on creativity from different perspectives, and get contradictory results. According to cognitive resources theory, individual cognitive resources are limited, and cognitive resources should be occupied for stimulus recognition and processing. When stimulus or processing task is too complex, cognitive resources are not adequate. As a stimulus, stress also takes up the cognitive resources of individuals, which reduces the cognitive resources that individuals can use for creative tasks, thus damages creativity. On the contrary, according to the theory of arousal level, when individuals face the stressors, cognitive arousal level increases, which stimulates the motivation of individuals to carry out creative activities to reduce the stress, so that individuals can devote more energy to creative activities and increase their creativity. However, arousal theory suggests that individuals prefer a moderate level of arousal, and too high or too low level of arousal will lead to individual discomfort. Therefore, when the pressure is low, as the pressure increases, it has a positive predictive effect on the work results. When the pressure increases to a certain level, the increase of pressure will negatively predict the work results.

Based on the two-dimensional framework of challenge stress/hindrance stress proposed by [Cavanaugh et al. \(2000\)](#), this paper discusses the effect of different types of stressors on creativity. Before this framework was put forward, researchers seldom distinguished the influence of different types of stressors on creativity, and mostly used questionnaire and experimental methods to directly study the relationship between stress and creativity, but got inconsistent results. [Andrew and Farris \(1972\)](#) conducted a five-year study on more than 100 NASA scientists and engineers. They found that after controlling irrelevant variables such as leadership, education level and work qualifications, the greater the time pressure, the better the work performance of the subjects, and the scientists with good work performance also expected more pressure. In contrast, [Amabile \(1982\)](#) conducted an experimental study in which girls aged 7 - 11 were asked to make paper collages. Subjects in the experimental group decided the final prize according to the creativity of the collage they made, while those in the control group randomly selected the prize at last. The results showed that the control group may had stronger intrinsic motivation and showed more risk-taking behavior because they were not faced with situational pressure, therefore their creativity was significantly higher than that of the experimental group. In addition, [Krop, Alegre, and Williams \(1969\)](#), taking college students as subjects, controlled the pressure by playing a silent film that could cause pressure, and measured whether the pressure would affect the results of divergent thinking test or

convergent thinking test. The results show that stress can damage divergent thinking, but has no effect on convergent thinking.

The main reason why the early research got contradictory results was that it didn't subdivide the specific stressors, and there were differences in the measurement methods of stressors and creativity (Akinola, Kapadia, Lu, & Mason, 2018). At the same time, the research groups included scientists and engineers, 7 - 11-year-old girls, college students, etc., the main stressors faced by each group were different, and the influences of the corresponding pressure on creativity were different too.

With the further research, some scholars began to realize that whether work pressure promotes or hinders creativity has a great relationship with the types of work stressors. As a result, Cavanaugh et al. (2000) conducted a long-term survey of American managers and found a two-dimensional structure of stress, further dividing the stress into challenge stress and hindrance stress. Challenging stress is often seen as an opportunity for individuals to grow, learn and earn achievement, including time pressure, workload, job responsibilities, etc. Hindrance stress is associated with excessive or unpredictable work requirements, often hindering individuals from achieving work goals, including organizational politics, bureaucracy, job insecurity, etc. Since the two-dimensional framework of challenge stress/hindrance stress was put forward, researchers have paid more attention to it. Based on the two-dimensional framework of challenge stress/hindrance stress, a large number of researchers have explored the impact of different stressors on creativity. Research Based on the challenge/hindrance stress framework shows that hindrance stress usually damages creativity. Although some challenge stress can promote creativity to some extent, the negative effect of hindrance stress is the most significant when it coexists with challenge stress (Pearsall et al., 2009). In addition, when the challenge stress is too excessive, the employees can't meet the work requirements by increasing the work engagement. At this time, the challenging pressure will consume a lot of energy and resources of the employees, thus damaging creativity (Lepine, Podsakoff, & Lepine, 2005).

2.2. The Influence Mechanism of Work Stress on Creativity

In addition to exploring the effect of work stress on creativity, researchers also explore the mediating mechanism of work stress on creativity, which is conducive to a deeper understanding of how work stress affects creativity and provides a theoretical basis for further proposing a buffering model of available resources.

Research shows that work stress exerts an impact on creativity by mobilizing or wasting individual's motivation, cognitive and emotional resources. Motivation is an important factor affecting creativity (Amabile, Conti, Coon, Lazenby, & Herron, 1996). When faced with work stress, employees will evaluate the efforts needed to meet the work requirements and the possibility of meeting the work requirements. If the employees think that they can meet the work require-

ments by increasing the work engagement, and meeting the work requirements will help them earn their own achievement. Therefore, when faced with challenge stress, although the external environment puts forward work requirements to employees, such work requirements will also bring potential growth to employees. Employees will think that as long as they make corresponding efforts, they can meet the requirements of challenge stress, and meeting the requirements will bring valuable results for themselves (Lepine et al., 2005), so their intrinsic motivation will increase, thus promoting creativity. However, when the challenging work stress is excessive, the employees can't meet the work requirements by increasing the work engagement, and will consume a lot of energy and resources. The employees will think that this work pressure will damage themselves, thus damaging their motivation (Lepine et al., 2005). For example, some studies have found that although time stress is regarded as challenge stress, moderate time stress is the best way to promote employees' creativity. When time stress is too high, it will damage intrinsic motivation, thus damaging creativity (Baer & Oldham, 2006; Khedhaouria, Montani, & Thurik, 2017; Amabile, Hadley, & Kramer, 2002). In addition, when faced with organizational politics, role conflict and role ambiguity, job insecurity and other hindrance stress, employees tend to think that even if they make efforts, they can't meet this type of work requirements. Therefore, the intrinsic motivation of their work will be damaged, which has a negative impact on creativity (Coelho, Augusto, & Lags, 2011; Urbach, Bagotyriute, West, Dawson, & Fay, 2017). In conclusion, it has been agreed that hindrance stress can damage creativity (Sacramento, Fay, & West, 2013).

Besides motivation, cognitive resources also play an important mediating role in the relationship of work stress on creativity. On the one hand, when facing the work stressors, employees will evaluate whether the stressors will bring profits or losses to themselves, and whether they have enough resources to deal with the stress. According to this, stressors are assessed as challenges or threats (Webster, Beehr, & Love, 2011). The evaluation of employees' challenges or threats to stressors can mediate the impact of work stress on creativity. When employees evaluate work stress as a challenge, they will adopt more effective cognitive strategies (Wang, Jackson, & Cai, 2016), focus on the positive aspects of stress situations, adopt problem-centered coping styles, and mobilize their cognitive resources to cope with stress situations (Akino La et al., 2018), increasing cognitive flexibility (Lu, Akinola, & Mason, 2017), thereby promoting creativity (Li, Chen, & Lai, 2018). On the contrary, when employees evaluate work stress as a threat, they are more likely to adopt an emotion centered coping style, pay more attention to the negative information in the situation, thus causing loss of cognitive resources, employees' attention will be more limited, and cognitive flexibility will be reduced (Amabile, Goldfarb, & Brackfield, 1990), thus damaging creativity. On the other hand, challenge/hindrance stress and challenge/threat assessment are not necessarily corresponding. Although hindrance stress is gener-

ally assessed as a threat, challenge stress is not necessarily assessed as a challenge. Studies have shown that although job difficulty is seen as challenge stress, it can still be assessed as a threat, and threat assessment mediates the negative relationship between job difficulty and creative performance (Espedido & Searle, 2018). In addition, when hindrance stress and challenge stress coexist, it is difficult for individuals to see the positive and negative aspects of the stressors respectively. At this time, the negative effect of hindrance stress is most significant, and individuals are more likely to produce threat assessment (Pearsall et al., 2009).

In addition to motivation and cognitive resources, work stress can also affect creativity by influencing emotional resources. Early studies have found that job stress caused by job requirements often leads to emotional exhaustion and burnout (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001), and reduces employees' sense of self-efficacy (Wang, Zhang, & Martocchio, 2011) and damages work engagement (Li & Li, 2016), thus affecting creativity. For example, Yeh et al. (2014) applied the technology of neuroscience to explore how stress affected the working memory and creativity of subjects by influencing stress hormones and negative emotions. The whole game lasted for 90 minutes, and it was found that in the process of the game, stress could lead to approaching negative emotions (depression, anger, etc.), thus damaging creativity.

To sum up, work stress can affect creativity by mobilizing or wasting motivation, cognitive and emotional resources of employees. Generally speaking, based on the challenge/hindrance stress framework, hindrance stress will damage employees' intrinsic motivation, make employees assess stressors as threat, consume employees' cognitive and emotional resources, and thus damage creativity. Although some challenge stress can promote creativity to some extent, when they coexist with hindrance stress, the damaging effect of hindrance stress on creativity is often more obvious. In addition, when the challenging pressure is excessive, it will also consume the motivation, cognitive and emotional resources of employees, thus damaging creativity. Therefore, although work stress may promote creativity to some extent, the damaging effect of work stress on creativity is more common.

Based on the above analysis of the effects and mechanisms of work stress on creativity, combined with domestic and foreign literature, this study focuses on how to reduce the negative impact of work stress on creativity when work stress may cause damage to creativity through buffering mechanism. According to the Job Demands-Resources Model, this study proposes that the available resources can buffer the negative impact of work stress on creativity.

3. Buffering Model of Available Resources

3.1. Buffering Model of Available Resources Based on the Job Demands-Resources Model

According to the Job Demands-Resources Model proposed by Demerouti et al.

(2001), the resources of employees can buffer the negative effects of work pressure (De Clercq & Belausteguigoitia, 2019). According to the Job Demands-Resources Model, the characteristics of employees' work environment can be divided into two types: job demands and job resources. Job demands refer to the physical, psychological, emotional or other requirements put forward by the work situation for employees. Job demands are one of the most important sources of work pressure (Ganster, 2005). Job demands bring work load to employees, and constantly consume the physical and psychological resources of employees, which leads to emotional exhaustion and psychological burnout. Job resources refer to the support provided by physiological, psychological, social or organizational characteristics, which has a buffering effect on the negative impact of job demands, can reduce the physical or mental loss caused by job demands, and promote personal development and growth (Bakker, Hakanen, Demerouti, & Xanthoulou, 2007; Woerkom & Bakker, 2016). Based on the Job Demands-Resources Model, the early researchers explored the effects of job demands and job resources on job burnout, job involvement and physical or mental health (Demerouti et al., 2001), and then turned to study their effects on job outcome variables such as organizational commitment and job performance (Bakker et al., 2007). For example, according to previous studies, psychological safety atmosphere as a working resource can reduce the negative impact of work requirements on employees' positive organizational behavior (Woerkom & Bakker, 2016). In addition, some researchers found that autonomy, performance feedback and other work resources can reduce the emotional exhaustion caused by work requirements, and bring higher work motivation (Bakker et al., 2007). Similarly, researchers take teachers in primary schools, junior high schools and vocational schools as research objects, and find that work resources such as leadership support, innovation, and a good organizational atmosphere can buffer the damaging effect of students' misconduct on teachers' work input (Bakker et al., 2007).

In recent years, with more and more attention paid to creativity and the increasing work pressure of employees, more and more scholars explore buffering variables that can reduce the damage of work pressure on creativity based on the Job Demands-Resources Model (De Clercq & Belausteguigoitia, 2019; Li & Li, 2016). Based on the Job Demands-Resources Model, this paper combs the previous literature on the moderator variables of work stress on creativity, and proposes a buffering model of available resources, as shown in **Figure 1**. According to the buffering model shown in **Figure 1**, the physiological, psychological, emotional and other demands of work environment for employees are important sources of work stress, which affects creativity by mobilizing or wasting motivation, cognition and emotional resources of employees. When the demands of work environment for employees are far beyond expectations, employees will assess work stress as a threat (Espedido & Searle, 2018), reduce intrinsic motivation (Lepine et al., 2005), and generate emotional exhaustion and

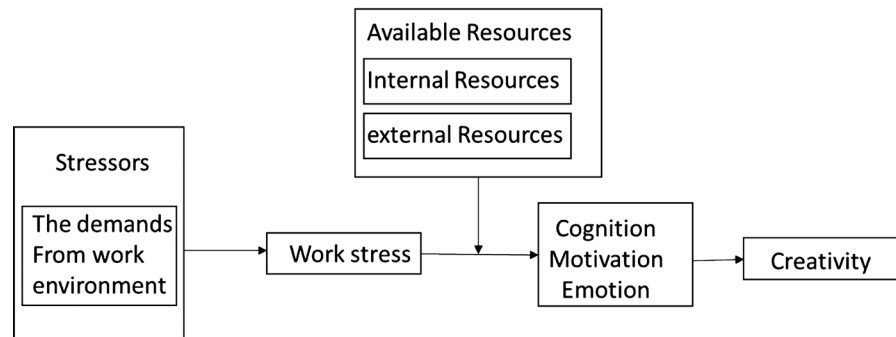


Figure 1. Buffering model of available resources.

psychological burnout (Demerouti et al., 2001), thus damaging creativity. At this time, if employees have enough energy or resources, they can buffer the negative impact of work stress on creativity (Bakker, Hakanen, Demerouti, & Xanthoulou, 2007; Mitchell, Greenbaum, Vogel, Mawritz, & Keating, 2019; Woerkom & Bakker, 2016).

Available resources can play a buffering role in two aspects. On the one hand, available resources can supplement the corresponding motivation, cognitive or emotional resources that are consumed by work pressure (Janssen, 2000; Mitchell et al., 2019), so that individuals can maintain high intrinsic motivation, cognitive persistence, emotional stability, etc. (Bakker et al., 2007; Woerkom & Bakker, 2016). On the other hand, the job resources can meet the basic needs of the employees themselves, and have the function of mobilization. For example, the work control of the employees can meet the needs of the employees' autonomy (Binnewies, & Wornlein, 2011), add the internal resources for employees, improve the intrinsic motivation of the employees' work, and reduce the negative emotions and increase work engagement (Bakker, Demerouti, & Euwema, 2005), thus buffering the damaging effect of work stress on creativity.

In a broad sense, available resources refer to things that employees find valuable. They include not only external materials or conditions, but also internal characteristics of individuals (Hobfoll, 1989). Therefore, according to the source of resources, the available resources of employees can be divided into two categories: the first category is external resources, which are resources provided by the organization or social environment for individuals to resist stress, which can make employees feel the support from external environment, so as to help employees cope with pressure and buffer the loss of pressure on their creativity; the second category is internal resources, which refer to the personal characteristics of an individual that are conducive to coping with work pressure. These personal characteristics can be used as the internal energy source of employees, supplement the resources and energy consumed by the environment, and help employees to improve creativity in stress situations.

3.2. Buffering Mechanism of External Resources

The existence of work stress is universal, and there will be work stress in any

work situation, but a good organization and social environment can provide external resources for employees to cope with work stress, provide material and psychological support for employees, help employees to achieve their work goals, so as to reduce the negative impact of work pressure on creativity. At present, researchers have found that job characteristics, leadership, and family factors can act as external resources as a buffer.

Input-output equity and work control are common characteristics of work in organizational context. Research shows that this kind of work characteristics can be used as a buffering mechanism. Creative behavior means that employees need to invest extra time and resources in idea generation, promotion and realization. At this time, employees especially need to have enough resources to meet work requirements and cope with work pressure. Therefore, if employees can experience the sense of input-output fairness, they will think that their time and energy input in creative behavior will be rewarded by the organization, then they will view the high work requirements in a more positive way, generate more positive emotions, and have more motivation to adopt work innovation behavior to cope with the high work demands (Janssen, 2000). Similarly, when employees are faced with too much time pressure, work control, as a work resource provided by the organization, let employees choose work order, time frame and work content independently. Therefore, employees who feel the sense of work control will respond to work pressure more actively, choose more effective behavior strategies, rearrange tasks in a more effective way, and generate higher intrinsic motivation, so as to buffer the negative impact of stress on creativity (Binnewies, & Wornlein, 2011).

In addition, leaders can also serve as external resources for employees to cope with work pressure. For example, in the face of hindrance stress, positive feedback from leaders can help employees clarify role expectations and work objectives, so as to guide employees' attention from focusing on stress to focusing on task itself, stimulate employees' interest in work tasks, and buffer the negative impact of hindrance stress on creativity (Hon, Chan, & Lu, 2013). High quality leader-member exchange can also enable employees to get more resources, so as to supplement motivation, cognition and emotion resources consumed by work pressure. In addition, as a return to the leadership, employees will correspondingly invest more energy to cope with work pressure, so as to buffer the damage of work pressure on creativity (Sun, Chen, Yin, 2018).

Family factors such as work family balance can also play a buffering role. Work family balance will enable employees to have a positive understanding of their ability to balance work and family, while work family balance will bring positive emotions (Aleksić, Mihelić, Černe, & Sibekerlavaj, 2017), which can buffer the negative impact of time pressure on creativity.

3.3. Buffering Mechanism of Internal Resources

In addition to the external resources that the organization and social environ-

ment can provide for employees to cope with work pressure, the personal characteristics of employees themselves can also be used as a stable internal resource to provide energy to cope with work stress, so that employees can look at work stress from a positive perspective, and take effective countermeasures, so as to improve their creativity. According to existing research, many positive personal traits can act as a buffer.

Tolerance of ambiguity refers to the tendency of individuals to tolerate new, contradictory and complex uncertain information (Furnham & Ribchester, 1995). In the work situation, the attention resources and cognitive ability of employees are always limited, so too high role ambiguity will damage creativity. However, individuals with high tolerance of ambiguity are more likely to accept uncertain results. When they are faced with high role ambiguity, they will have a higher sense of self-efficacy and pay more attention to the task itself rather than the pressure, then role ambiguity has less impact on attention resources and cognitive ability, so tolerance of ambiguity can buffer the damage of role ambiguity to creativity (Wang et al., 2011).

Based on the theory of regulatory focus (Higgins, 1997), people who have promotion focus are more sensitive to positive results, more alert to opportunities, and adopt positive and aggressive strategies towards goals. On the contrary, people who have prevention focus emphasize security, avoid loss. They are more sensitive to negative results, more alert to threat information, and tend to adopt preventive and vigilant strategies. Research shows that when faced with challenge stress, promotion focus can make employees make better use of their cognitive resources, adopt positive cognitive strategies, maintain positive emotions and internal motivation, so as to buffer the damaging effect of challenging work stress on creativity, enhance the positive relationship between challenge stress and creativity, while prevention focus is just the opposite, it will enhance the negative relationship between work stress and creativity (Sacramento, Fay, & West, 2013).

Self affirmation refers to that when facing threat information, individuals think about and further confirm the self-worth of threat information, or participate in activities related to important self-worth, so as to maintain a good self-awareness, and the integrity of self-concept (Cohen & Sherman, 2014). Stress situations often mean that the demands of the outside world exceed expectations. If employees fail to meet the requirements of work, they may damage their own self-concept. At this time, the threat of the external environment is particularly high. If employees make positive self affirmation, they can let individuals view themselves and the energy and resources they have in a broader way, so as to build up confidence in solving problems, improve their resilience, maintain emotional stability. So they will respond to work stress in a more adaptive way, buffering the negative impact of stress situations, and improving creativity (Creswell et al., 2013).

In addition, learning orientation means that employees tend to continuously

learn and explore new knowledge, so as to promote personal growth. Continuous learning can increase employees' ability to cope with job uncertainty, so that employees can deal with complex work environment more effectively. When faced with task conflict, learning oriented individuals will have more sufficient cognitive resources, with a more positive attitude, to transform conflict perspectives into creative ideas (De Clercq, Mohammad Rahman, & Belausteguigoitia, 2017).

4. Prospect

At present, the research on the relationship between work stress and creativity has become an important theme in the field of creativity research (Lepine et al., 2005). With the rapid development of economy and society, stress has become an inevitable part of modern life. Since the pressure is inevitable, how to adapt to the stress situation has become an increasingly important issue. Although researchers have got a lot of research results, this paper believes that we can continue to explore in the following areas.

Firstly, explore other buffering variables that can reduce stress damage to creativity. At present, researchers have done a lot of research on external resources and internal resources that can buffer the impact of work stress on creativity, but there may be other buffer variables that can reduce the impact of stress on creativity. For example, the buffering effects of leadership's positive feedback and leader-member exchange have been studied (Sun, Chen, & Yin, 2018). Can other characteristics of leader, such as leadership style, also buffer the damage of work stress on creativity? Some studies have found that when employees encounter work family conflict, the resource damage caused by the conflict will make it more difficult for employees to restrain their improper behavior, thus affecting interpersonal relationships. However, ethical leaders care about employees' emotional feelings and can empathize with employees' concerns. Therefore, ethical leaders can act as a coping resource to encourage employees to deal with work family conflicts in a positive way, thus playing a buffering role (Eissa & Wyland, 2018). So can ethical leadership also buffer the damage of work pressure on employees' creativity? In addition, can other types of leadership styles, such as transformational leadership, service-oriented leadership and authoritarian leadership, play a buffering role in the relationship between stress and creativity?

Secondly, we can study when multiple resources coexist, how these resources will act interactively. At present, a few studies have found that the interaction of internal and external resources can enhance the buffer mechanism. For example, some researchers have found that although work overload can damage employees' creativity, employees' work passion, organizational commitment and emotional sharing with colleagues can increase employees' energy to cope with stress, so that employees can take more positive actions and buffer the damage of work overload to employees' creative behavior. In particular, the higher the

work passion of employees, the more obvious the buffering mechanism of organizational commitment and emotional sharing (De Clercq & Belausteguigoitia, 2019). Therefore, future research can further explore whether the buffering mechanism of external resources is more obvious when employees have corresponding internal resources. For example, individuals with higher tolerance of ambiguity are more able to accept the uncertainty brought about by change (Wang et al., 2011). Is the buffering effect of transformational leadership more obvious for employees with higher tolerance of ambiguity?

Thirdly, further explore the boundary conditions of buffering effect of available resources. In different situations, for different individuals, the buffering mechanism of available resources may be different. For example, research has found that colleague support can buffer the negative impact of workplace bullying, but for men and women, white people and people of color, the buffering mechanism is different (Attell, Kummerow, & Treiber, 2017). For women and people of color, co-worker support is less of a buffer. Therefore, is the buffer mechanism of the same available resources for different groups different? In addition, in the study of team creativity, the researchers found that team identity can buffer the negative impact of hindrance time stress on work performance (Chong, Eerde, Chai, & Rutte, 2011). So, for the work that does not emphasize team cooperation and mainly relies on the personal strength of employees, does the support of colleagues play a buffering role?

5. Conclusion

Through combing the previous literature, this study found that: hindrance work stress and excessive challenging work stress damage creativity through the loss of individual motivation, emotion and cognitive resources. The internal and external resources of an individual can supplement the corresponding motivation, cognitive or emotional resources that are consumed by work pressure, thus buffering the damage of work pressure on creativity.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Akinola, M., Kapadia, C., Lu, J., & Mason, M. (2018). Incorporating Physiology into Creativity Research and Practice: The Effects of Bodily Stress Responses on Creativity in Organizations. *Academy of Management Perspectives*, 33, 163-184.
<https://doi.org/10.5465/amp.2017.0094>
- Aleksić, D., Mihelić, K. K., Černe, M., & Škerlavaj, M. (2017). Interactive Effects of Perceived Time Pressure, Satisfaction with Work-Family Balance (SWFB), and Leader-Member Exchange (LMX) on Creativity. *Personnel Review*, 46, 662-679.
<https://doi.org/10.1108/PR-04-2015-0085>
- Amabile, T. M. (1982). Children's Artistic Creativity: Detrimental Effects of Competition

- in a Field Setting. *Personality and Social Psychology Bulletin*, *8*, 573-578.
<https://doi.org/10.1177/0146167282083027>
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the Work Environment for Creativity. *Academy of Management Journal*, *39*, 1154-1184.
<https://doi.org/10.2307/256995>
- Amabile, T. M., Goldfarb, P., & Brackfield, S. C. (1990). Social Influences on Creativity: Evaluation, Coaction, and Surveillance. *Creativity Research Journal*, *3*, 6-21.
<https://doi.org/10.1080/10400419009534330>
- Amabile, T., Hadley, C. N., & Kramer, S. J. (2002). Creativity under the Gun. *Harvard Business Review*, *80*, 52-61.
- Andrew, F. M., & Farris, G. F. (1972). Time Pressure and Performance of Scientists and Engineers: A Five-Year Panel Study. *Organizational Behavior and Human Performance*, *8*, 185-200. [https://doi.org/10.1016/0030-5073\(72\)90045-1](https://doi.org/10.1016/0030-5073(72)90045-1)
- Attell, B. K., Kummerow Brown, K., & Treiber, L. A. (2017). Workplace Bullying, Perceived Job Stressors, and Psychological Distress: Gender and Race Differences in the Stress Process. *Social Science Research*, *65*, 210-221.
<https://doi.org/10.1016/j.ssresearch.2017.02.001>
- Baer, M., & Oldham, G. R. (2006). The Curvilinear Relation between Experienced Creative Time Pressure and Creativity: Moderating Effects of Openness to Experience and Support for Creativity. *Journal of Applied Psychology*, *91*, 963-970.
<https://doi.org/10.1037/0021-9010.91.4.963>
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job Resources Buffer the Impact of Job Demands on Burnout. *Journal of Occupational Health Psychology*, *10*, 170-180.
<https://doi.org/10.1037/1076-8998.10.2.170>
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job Resources Boost Work Engagement, Particularly When Job Demands Are High. *Journal of Educational Psychology*, *99*, 274-284. <https://doi.org/10.1037/0022-0663.99.2.274>
- Binnewies, C., & Wornlein, S. C. (2011). What Makes a Creative Day? A Diary Study on the Interplay between Affect, Job Stressors, and Job Control. *Journal of Organizational Behavior*, *32*, 589-607. <https://doi.org/10.1002/job.731>
- Byron, K., Khazanchi, S., & Nazarian, D. (2010). The Relationship between Stressors and Creativity: A Meta-Analysis Examining Competing Theoretical Models. *Journal of Applied Psychology*, *95*, 201-212. <https://doi.org/10.1037/a0017868>
- Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An Empirical Examination of Self-Reported Work Stress among U.S. Managers. *Journal of Applied Psychology*, *85*, 65-74. <https://doi.org/10.1037/0021-9010.85.1.65>
- Chong, D. S. F., Van Eerde, W., Chai, K. H., & Rutte, C. G. (2011). A Double-Edged Sword: The Effects of Challenge and Hindrance Time Pressure on New Product Development Teams. *IEEE Transactions on Engineering Management*, *58*, 71-86.
<https://doi.org/10.1109/TEM.2010.2048914>
- Coelho, F., Augusto, M., & Lages, L. F. (2011). Contextual Factors and the Creativity of Frontline Employees: The Mediating Effects of Role Stress and Intrinsic Motivation. *Journal of Retailing*, *87*, 31-45. <https://doi.org/10.1016/j.jretai.2010.11.004>
- Cohen, G. L., & Sherman, D. (2014). The Psychology of Change: Self-Affirmation and Social Psychological Intervention. *Annual Review of Psychology*, *65*, 333-371.
<https://doi.org/10.1146/annurev-psych-010213-115137>
- Creswell, J. D., Dutcher, J. M., Klein, W. M. P., Harris, P. R., & Levine, J. M. (2013). Self-Affirmation Improves Problem-Solving under Stress. *PLoS ONE*, *8*, e62593.

- <https://doi.org/10.1371/journal.pone.0062593>
- De Clercq, D., & Belausteguigoitia, I. (2019). Reducing the Harmful Effect of Work Overload on Creative Behaviour: Buffering Roles of Energy-Enhancing Resources. *Creativity and Innovation Management*, 28, 5-18. <https://doi.org/10.1111/caim.12278>
- De Clercq, D., Mohammad Rahman, Z., & Belausteguigoitia, I. (2017). Task Conflict and Employee Creativity: The Critical Roles of Learning Orientation and Goal Congruence. *Human Resource Management*, 56, 93-109. <https://doi.org/10.1002/hrm.21761>
- Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The Job Demands-Resources Model of Burnout. *Journal of Applied Psychology*, 86, 499-512. <https://doi.org/10.1037/0021-9010.86.3.499>
- Eissa, G., & Wyland, R. (2018). Work-Family Conflict and Hindrance Stress as Antecedents of Social Undermining: Does Ethical Leadership Matter? *Applied Psychology*, 67, 645-654. <https://doi.org/10.1111/apps.12149>
- Espedido, A., & Searle, B. J. (2018). Goal Difficulty and Creative Performance: The Mediating Role of Stress Appraisal. *Human Performance*, 31, 179-196. <https://doi.org/10.1080/08959285.2018.1499024>
- Furnham, A., & Ribchester, T. (1995). Tolerance of Ambiguity: A Review of the Concept, Its Measurement and Applications. *Current Psychology*, 14, 179-199. <https://doi.org/10.1007/BF02686907>
- Ganster, D. C. (2005). Executive Job Demands: Suggestions from a Stress and Decision-Making Perspective. *Academy of Management Review*, 30, 492-502. <https://doi.org/10.5465/amr.2005.17293366>
- Higgins, E. T. (1997). Beyond Pleasure and Pain. *American Psychologist*, 52, 1280-1300. <https://doi.org/10.1037/0003-066X.52.12.1280>
- Hobfoll, S. E. (1989). Conservation of Resources: A New Attempt at Conceptualizing Stress. *American Psychologist*, 44, 513-524. <https://doi.org/10.1037/0003-066X.44.3.513>
- Hon, A. H. Y., Chan, W. W. H., & Lu, L. (2013). Overcoming Work-Related Stress and Promoting Employee Creativity in Hotel Industry: The Role of Task Feedback from Supervisor. *International Journal of Hospitality Management*, 33, 416-424. <https://doi.org/10.1016/j.ijhm.2012.11.001>
- Janssen, O. (2000). Job Demands, Perceptions of Effort-Reward Fairness and Innovative Work Behaviour. *Journal of Occupational and Organizational Psychology*, 73, 287-302. <https://doi.org/10.1348/096317900167038>
- Khedhaouria, A., Montani, F., & Thurik, R. (2017). Time Pressure and Team Member Creativity within R&D Projects: The Role of Learning Orientation and Knowledge Sourcing. *International Journal of Project Management*, 35, 942-954. <https://doi.org/10.1016/j.ijproman.2017.04.002>
- Krop, H. D., Alegre, C. E., & Williams, C. D. (1969). Effect of Induced Stress on Convergent and Divergent Thinking. *Psychological Reports*, 24, 895-898. <https://doi.org/10.2466/pr0.1969.24.3.895>
- LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A Meta-Analytic Test of the Challenge Stressor-Hindrancer Stressor Framework: An Explanation for Inconsistent Relationships among Stressors and Performance. *Academy of Management Journal*, 48, 764-775. <https://doi.org/10.5465/amj.2005.18803921>
- Li, X., & Li, C. (2016). Not All Job Demands Are Equal: Differentiating the Effects of Challenge and Hindrance Job Demands on Employee Creativity. In *2nd International Conference on Economy, Management and Education Technology* (pp. 550-555). Paris: Atlantis Press. <https://doi.org/10.2991/icemet-16.2016.115>

- Liu, L., Wang, L., Ren, J., & Liu, C. (2017). Promotion/Prevention Focus and Creative Performance: Is It Moderated by Evaluative Stress? *Personality and Individual Differences, 105*, 185-193. <https://doi.org/10.1016/j.paid.2016.09.054>
- Lu, J. G., Akinola, M., & Mason, M. F. (2017). "Switching On" Creativity: Task Switching Can Increase Creativity by Reducing Cognitive Fixation. *Organizational Behavior and Human Decision Processes, 139*, 63-75. <https://doi.org/10.1016/j.obhdp.2017.01.005>
- Maimone, F., & Sinclair, M. (2014). Dancing in the Dark: Creativity, Knowledge Creation and (Emergent) Organizational Change. *Journal of Organizational Change Management, 27*, 344-361. <https://doi.org/10.1108/IOCM-12-2012-0197>
- Mitchell, M. S., Greenbaum, R. L., Vogel, R. M., Mawritz, M. B., & Keating, D. J. (2019). Can You Handle the Pressure? The Effect of Performance Pressure on Stress Appraisals, Self-Regulation, and Behavior. *Academy of Management Journal, 62*, 531-552. <https://doi.org/10.5465/amj.2016.0646>
- Ohly, S., & Fritz, C. (2010). Work Characteristics, Challenge Appraisal, Creativity, and Proactive Behavior: A Multi-Level Study. *Journal of Organizational Behavior, 31*, 543-565. <https://doi.org/10.1002/job.633>
- Pearsall, M. J., Ellis, A. P. J., & Stein, J. H. (2009). Coping with Challenge and Hindrance Stressors in Teams: Behavioral, Cognitive, and Affective Outcomes. *Organizational Behavior and Human Decision Processes, 109*, 18-28. <https://doi.org/10.1016/j.obhdp.2009.02.002>
- Sacramento, C. A., Fay, D., & West, M. A. (2013). Workplace Duties or Opportunities? Challenge Stressors, Regulatory Focus, and Creativity. *Organizational Behavior and Human Decision Processes, 121*, 141-157. <https://doi.org/10.1016/j.obhdp.2013.01.008>
- Sun, J. M., Chen, L. N., & Yin, K. (2018). When Challenge Stressors Increase Employee Innovative Behaviors? The Role of Leader Member Exchange and Abusive Supervision. *Acta Psychologica Sinica, 50*, 436-449. <https://doi.org/10.3724/SP.J.1041.2018.00436>
- Urbach, T., Bagotyrriute, R., West, M. A., Dawson, J., & Fay, D. (2017). Differential Effects of Workplace Stressors on Innovation: An Integrated Perspective of Cybernetics and Coping. *International Journal of Stress Management, 26*, 11-24. <https://doi.org/10.1037/str0000081>
- Ursin, H., & Eriksen, H. R. (2004). The Cognitive Activation Theory of Stress. *Psychoneuroendocrinology, 29*, 567-592. [https://doi.org/10.1016/S0306-4530\(03\)00091-X](https://doi.org/10.1016/S0306-4530(03)00091-X)
- van Woerkom, M., & Bakker, A. B. (2016). Accumulative Job Demands and Support for Strength Use: Fine-Tuning the Job Demands-Resources Model Using Conservation of Resources Theory Marianne. *Journal of Applied Psychology, 101*, 141-150. <https://doi.org/10.1037/apl0000033>
- Wang, S., Zhang, X., & Martocchio, J. (2011). Thinking outside of the Box When the Box Is Missing: Role Ambiguity and Its Linkage to Creativity. *Creativity Research Journal, 23*, 211-221. <https://doi.org/10.1080/10400419.2011.595661>
- Webster, J. R., Beehr, T. A., & Love, K. (2011). Extending the Challenge-Hindrance Model of Occupational Stress: The Role of Appraisal. *Journal of Vocational Behavior, 79*, 505-516. <https://doi.org/10.1016/j.jvb.2011.02.001>
- Yeh, Y. C., Lai, G. J., Lin, C. F., Lin, C. W., & Sun, H. C. (2014). How Stress Influences Creativity in Game-Based Situations: Analysis of Stress Hormones, Negative Emotions, and Working Memory. *Computers and Education, 81*, 143-153. <https://doi.org/10.1016/j.compedu.2014.09.011>