



RESEARCH ARTICLE

# How and when employees' boundary-spanning behavior improves their creative performance: A moderated mediation model

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## Abstract

This article draws on status characteristics theory to explore the mechanisms of individual-level boundary-spanning behavior on employee creative performance, as well as the mediating role of informal status and the moderating role of Zhongyong thinking. The results of a two-wave questionnaire survey of 202 employees show that boundary-spanning behavior has a significant positive relationship with employees' creative performance, informal status mediates the link between boundary-spanning behavior and creative performance of this employee, Zhongyong thinking plays a moderating role between employees' boundary-spanning behavior and their informal status, and Zhongyong thinking also moderates the mediating role of informal status between boundary-spanning behavior and employee creative performance. In this paper, a moderated mediation model is established to enhance the understanding of the effects and mechanisms of individual boundary-spanning behavior, as well as to provide some constructive insight into how boundary-spanning behavior can be effectively employed in management practice within the Chinese context.

**Keywords:** boundary-spanning behavior; creative performance; informal status; Zhongyong thinking

## Introduction

It has become increasingly common for companies to engage their employees in boundary-spanning activities in order to address external challenges and achieve sustainable growth (Marrone, Quigley, Prussia, & Dienhart, 2022). Employee boundary-spanning behavior is a process in which employees develop relationships and continuously interact with external actors to help the team achieve its overall goals (Marrone, Tesluk, & Carson, 2007). Studies have shown that there is a positive relationship between employee boundary-spanning behavior and variables such as task performance (Liu, Jiang, Chen, Pan, & Lin, 2018), employee satisfaction (Marrone et al., 2022), and organizational commitment (Bettencourt, Brown, & MacKenzie, 2005). In fact, organizations and teams are increasingly requiring employees to access heterogeneous knowledge and engage in innovation activities by spanning boundaries (Zhang & Li, 2021), and yet research on the relationship between employee boundary-spanning behaviors and creative performance is limited. Researchers have examined the relationship between individual boundary spanning and creativity (Zhu, Xu, Zhou, Zhang, Xu, & Zong, 2020); however, from the perspective of the innovation process, creativity facilitates the generation of creative ideas (Farmer, Tierney, & Kung-Mcintyre, 2003) but does not directly reflect the outcome resulting from implementing creative ideas, namely creative performance (Shin, Yuan, & Zhou, 2016). Therefore, the relationship between employee boundary-spanning

behavior and creative performance remains to be further explored. In view of this, this paper will examine in depth the relationship between employee boundary-spanning behavior and creative performance.

In previous studies, the implementation effects of boundary-spanning behaviors have been interpreted primarily from the perspective of resource conservation theory (Zhu et al., 2020), ego depletion theory (Xu, 2019), and social network theory (Fleming & Waguespack, 2007) through mediating mechanisms such as role pressure and social networks, which paved the way for this study. However, few studies have explored how employee boundary-spanning behaviors influence creative performance from the perspective of informal status. According to the status characteristics theory, individuals who are considered more capable of contributing to the team and the organization will achieve higher status in their workplace (Dippong & Kalkhoff, 2015). The position of individuals can significantly shape their work behavior, such as their performance, effectiveness of influence, etc. (Berger, Cohen, & Zelditch, 1972). Generally, boundary spanners are viewed as having a great potential to succeed in performance because they are able to acquire knowledge, information, connections, and resources from both intra- and inter-organizational activities (Agneessens & Wittek, 2012; Wheeler, Harris, & Sablinski, 2012). Due to their high performance expectations, boundary spanners are likely to be conferred a high informal status. Moreover, many studies have shown that informal status, as a special identity label developed by interpersonal interaction, can effectively enhance employee creative output through its leveraging effect (Cattani & Ferriani, 2008; Karakowsky, Kotlyar, & Good, 2021). Therefore, this paper intends to introduce informal status based on status characteristics theory and test its mediating role between employee boundary-spanning behavior and innovation. We speculate that boundary spanners gain recognition and respect from team members to enhance their reputation through knowledge sharing and dedication (Jones, 1964; Katz & Tushman, 1983), which can facilitate them to obtain a higher informal status (Magee & Galinsky, 2008) and boost creative performance (Cattani & Ferriani, 2008).

Furthermore, boundary-spanning behavior is a construct developed in a Western context, and its effects may be influenced by cultural differences (Joshi, Pandey, & Han, 2009; Liu et al., 2018). Additionally, informal status is determined by others' evaluations. Boundary spanners, however, have to deal with complex interpersonal relationships inside and outside the team and may suffer from role conflicts caused by switching between various roles (Zhu et al., 2020), which may not be helpful for them to achieve high informal status. Zhongyong thinking is an important mindset in Chinese culture that is closely related to the extent to which individuals adopt appropriate behaviors to balance the conflicts or contradictions they face. Boundary spanners are prone to role conflict, interpersonal crisis, and other dilemmas, they need to think in multiple dimensions and integrate internal and external information to take proper actions, that is, Zhongyong thinking (Wu & Lin, 2005), so as to maintain and improve their informal status. Employees with a high level of Zhongyong thinking can address different role tasks flexibly while maintaining good interpersonal interactions between themselves and people from various communities, which contributes to their better performance in various roles' tasks, but also benefits their wider range of good interpersonal relationships and mitigates possible role conflicts and interpersonal crises when implementing boundary-spanning behavior. This helps to boost their informal status. On the contrary, employees with a low Zhongyong thinking are less capable of coordinating contradictory factors, which makes it difficult for them to balance the complex role pressures caused by boundary-spanning behavior, as well as to simultaneously carry out their work tasks and maintain their interpersonal relationships. As a result, they may hardly succeed in establishing prestige and acquiring status through the implementation of boundary-spanning activities. In other words, for employees with low Zhongyong thinking, boundary-spanning behavior cannot serve as a status characteristic and thus provide them with status gains. This indicates that Zhongyong thinking may be an important boundary condition that shapes the effect of boundary-spanning behavior. Therefore, this paper would like to introduce Zhongyong thinking to examine its moderating role between employee boundary-spanning behavior and informal status.

In summary, according to status characteristics theory, this paper focuses on the relationship between employee boundary-spanning behavior and creative performance, particularly the mediating role played by informal status and the moderating role played by Zhongyong thinking. This paper aims to make the following three contributions. First, based on status characteristics theory, taking informal status as a mediating variable, this study is dedicated to revealing the intrinsic processes of how employee boundary-spanning behavior works on creative performance, thereby enriching theoretical research in this area. Second, by using Zhongyong thinking as a moderating variable in Chinese workplace context, this research examines the effects of individuals' cultural values on their boundary-spanning behavior to reveal the boundary conditions for the effectiveness of employees' boundary-spanning behavior. Finally, we construct an integrated moderated mediation model to reveal the mechanism of boundary spanning behavior on employee innovation performance and answer the question of how the indirect effect of informal status changes with the Zhongyong thinking.

## Literature review and hypothesis

### *Employee boundary-spanning behavior and creative performance*

Employee creative performance refers to the results that employees consciously create, promote, and achieve new ideas to benefit themselves, their team, or their organization (Janssen & Van Yperen, 2004). Employee boundary-spanning behavior may be conducive to enhancing their creative performance. To be specific, first, boundary-spanning employees occupy the structural hole and thus they have a high potential to make significant contributions to the team (Agneessens & Wittek, 2012; Wheeler et al., 2012). According to status characteristics theory, status derives from the ability of an individual to contribute to the team (Berger et al., 1972). It is therefore more likely for boundary spanners to earn the recognition of other team members and have a higher status within the organization. Meanwhile, employees with higher status tend to have greater influence in the organization, and the ideas and solutions they propose are more likely to be valued and supported by the organization and its members (Zhang, Waldman, & Wang, 2012). As a result, boundary-spanning employees will experience greater psychological security and self-efficacy, making them more confident in implementing positive actions (Aldabbas, Pinnington, & Lahrech, 2022; Nembhard & Edmondson, 2006) such as innovation and promoting creative performance (Zhang & Ahmed, 2022). Also, the cooperation of other team members contributes to the implementation of innovation activities (Perry-Smith & Shalley, 2003), which may result in higher creative performance of boundary spanners.

Second, it has been shown that adequate resources are necessary for individuals to achieve innovation (Amabile, 1988; Zhu et al., 2020). Spanning members can break the limits of boundaries and obtain heterogeneous resources from outside of the team (Ze, Kun, Boadu, & Yu, 2018; Zhu et al., 2020). These resources can help expand boundary spanners' knowledge system, activate their innovative thinking, and enable them to develop new ideas and methods to solve problems, thus contributing to their creative performance. In addition, as mentioned earlier, boundary spanners usually occupy structural holes where they have access to both internal and external resources of the team. From the perspective of resource conservation, the more resources individuals possess, the more willing they are to invest resources in innovation activities to obtain valuable resources such as creative performance (Cattani & Ferriani, 2008).

Finally, boundary-spanning activities are highly complex tasks that require employees to process a vast array of both internal and external information (Katz & Tushman, 1983) and to maintain and coordinate the intricate interpersonal relationships among stakeholders (Ancona & Caldwell, 1992). The successful completion of such a demanding task may lead employees to make a more positive self-evaluation of their abilities (Pierce & Gardner, 2009; Pierce, Gardner, Cummings, & Dunham, 1989). According to self-concept theory, individuals have a tendency to avoid their cognitive dissonance, and their extrinsic speech and behavior are aligned with their intrinsic perceptions (Bono & Judge, 2003). Therefore, in comparison to other employees, boundary-spanning employees are more likely

to take actions that match their self-perception of high competence, such as executing innovations, and thus exhibit higher creative performance (Zhang, Sun, Lin, & Ren, 2020). Summarizing the above analysis, this paper makes the following hypotheses:

**Hypothesis 1:** Employee boundary-spanning behavior is positively related to employee creative performance.

### *The mediating role of informal status*

An individual's informal status usually refers to the respect, appreciation, and voluntary following he or she receives from others and is reflected in his or her influence and prestige in the organization (Deng, Liao, Liu, Zhang, & Bao, 2020). Instead of formal status, which derives from formal organizational ranking, informal status comes from a focal individual's image in others' minds, and as that individual's behavior changes, so does the perception of that individual by others (Anderson, John, Keltner, & Krings, 2001). Usually, the more respect and recognition an individual receives in interpersonal interactions, the higher his or her informal status will be. Based on status characteristics theory, an individual's status characteristics can bring him/her higher prestige and status than others, which in turn affects the individual's opportunities to participate, the speed of performance output, and the effect of exerting influence (Berger, Rosenholtz, & Zelditch, 1980). Accordingly, employees' boundary-spanning behavior may affect their creative performance through informal status.

To elaborate specifically on how boundary-spanning behavior enhances the informal status of employees, first, employees who engage in boundary-spanning activities need to establish contacts and exchange information with important external subjects such as customers, foreign experts, and cooperative partners (Marrone, 2010), which allows employees to gain access to information resources that are otherwise unavailable to others (Burt, 1992). Research has shown that specific information can provide its owners with significant strategic advantages and is an essential method for individuals to gain power (Pettigrew, 1972), which can give boundary-spanning members a superior status to others. Then, from the perspective of social exchange theory, it is assumed that individuals can exchange their assistance for rewards from those they assist (McLarty, Muldoon, Quade, & King, 2021). It is usually necessary for boundary-spanning employees to integrate information, knowledge, and resources they obtain in the outside world with the organization's internal resources (Aldrich & Herker, 1977; Gittel, 2002) and share the results of their integration with their colleagues to help them do their jobs more effectively (Bresman, 2010). It is possible that such an exchange may encourage colleagues to appreciate the boundary spanner and confer higher prestige on the spanner, thereby contributing to the informal status of the boundary-spanning employee in the team (Flynn, 2003).

Informal status also contributes to higher employee creative performance. As a result of their greater competence and personal influence (Fiske, Cuddy, Glick, & Xu, 2002), employees with a high informal status are more likely to be able to control their circumstances (Berger & Conner, 1969) and to be held to higher performance expectations by their teammates. In addition, according to status characteristics theory, informal status is conferred by others and is easily lost, so higher-status employees are more concerned with maintaining their influence within the organization (Berger et al., 1972). It is therefore likely that high-status members will aim for a high level of creative output in order to fulfill the expectations of their teammates and work hard to accomplish it constantly (Day & Harrison, 2007). Moreover, innovation activities are often associated with high risks and uncertainty, which can take away some of the vested interests of others and result in non-cooperation or even resistance from other team members (Dewett, 2006), thereby hindering the transformation of creative ideas into creative performances. In comparison to individuals with low informal status, high-status employees have greater influence and authority within their groups (Berger et al., 1972), and their thoughts and ideas are more likely to be considered and valued by other members, as well as their actions will be accepted and supported more readily (Magee & Galinsky, 2008). In this

way, individuals with high informal status have a greater chance of implementing creative ideas and improving their creative performance (Janssen, 2005; Perry-Smith & Shalley, 2003).

Based on the above discussion, this paper argues that boundary-spanning behavior may positively influence employee creative performance through informal status. As a result, this paper proposes the following hypothesis:

**Hypothesis 2:** Informal status plays a mediating role between employee boundary-spanning behavior and employee creative performance.

### *The moderating role of Zhongyong thinking*

As discussed previously, in interpersonal interactions, when employees span boundaries, they are inevitably faced with some degree of role conflict (Zhu et al., 2020), which may be detrimental to their acquisition of informal status (Cooper & Cardon, 2019). It is therefore imperative that boundary-spanning employees take into account multiple perspectives, resolve conflicts between different roles, and maintain relationships both within and outside of the team in order to counteract the potential negative effects of boundary-spanning behavior, which is known as Zhongyong thinking. Zhongyong thinking is a typical cognitive model in Chinese culture (Yang et al., 2016). Zhongyong thinking was originally proposed by Confucius in *the Analects of Confucius* and initially referred to a mindset of handling things appropriately, maintaining a balance between the two sides of a conflict and opposing extreme thoughts and behaviors. Over a long period of development, there has been a gradual enrichment of this concept. It not only cares about balance and harmony for all elements inside an individual and requires him or her to deal with matters flexibly and appropriately but also values the individual's ability to keep a peaceful relationship with others in social interaction (Pan & Sun, 2017). In current management and psychological research, Zhongyong thinking is often defined as a mindset in which individuals think about how to integrate external conditions with internal needs and adopt appropriate behaviors in a given situation (Wu & Lin, 2005). Wu and Lin (2005) categorize Zhongyong thinking into three dimensions: diversified thinking, holism, and harmoniousness. Among them, diversified thinking emphasizes thinking from multiple perspectives and acting in a way that takes into account both the self and the general situation; holism focuses on the integration of external information and the inner thoughts of the individual; and harmoniousness refers to individuals adopting a harmonious behavior in dealing with others. In addition to focusing on the individual's thoughts and behaviors, Zhongyong thinking is also a 'society-entry' culture that considers the individual's position in the group and values interpersonal interaction. It emphasizes that 'when thinking about the best course of action, it is characterized by a focus on how interpersonal relationships change in social and interpersonal contexts as well as the major factors that influence these relationships. It also pays special attention to the interplay between these changes' (Yang, 2001). It is clear that under the influence of such a cultural background, the individual differences resulting from different mindsets among boundary spanners are already having an impact on their ability to carry out their boundary-spanning activities effectively.

Specifically, individuals with high Zhongyong thinking are good at thinking in multiple dimensions and are able to consider the needs of each role from the perspective of those roles (Liu, Xu & Zhang, 2020; Wu & Lin, 2005), making it easier for them to understand the distinctions among these roles as well as the keys to achieving each of them. Meanwhile, individuals with high Zhongyong thinking do not only focus on their own traits but also consciously gather relevant information at work (Liu & Friedman, 2012) and integrate the needs of the role with external information to complete the role tasks more efficiently (Cai, Jia, & Li, 2017). As a result, they excel at fulfilling the expectations of others for each role and therefore achieve a higher informal status within the team as a result of receiving praise and recognition from other members (Denison, Hooijberg, & Quinn, 1995). Moreover, the cultural context plays a significant role in the acquisition of status. Research has shown that warm and relatable employees are more likely to achieve status in workplaces with

a strong collectivist atmosphere (e.g., China) (Torelli, Leslie, Stoner, & Puente, 2014). Due to their harmonious approach to dealing with others, employees with a high degree of Zhongyong thinking can easily establish such an image. Generally, individuals with high levels of Zhongyong thinking tend to be relatively sociable (Shen, 2005), to establish harmonious interpersonal relationships (Wu & Lin, 2005; Yang, 2001), and to maintain friendly interactions with others (Pan & Sun, 2017), which makes them often regarded by others as easily interacting with them, as well as generous and helpful (Flynn, Reagans, Amanatullah, & Ames, 2006). The reputation and image they possess make them more likely to receive requests for assistance (Thye, 2000) and to be trusted by colleagues than employees with low Zhongyong thinking, thus helping them to achieve a higher informal status in the workplace.

However, individuals with low Zhongyong thinking are relatively poor at integrating internal and external information and thinking from multiple perspectives. In addition, they may be overwhelmed by complex interpersonal relationships, intensive work tasks, and multi-role requirements resulting from boundary-spanning behaviors, which may result in a significant amount of role stress. In this case, it is difficult for boundary spanners to switch among roles well, as a result, their actual performance may not match the expectations of other members, which may damage the reputation of the boundary spanners in people's minds, adversely affecting their informal status. In summary, Zhongyong thinking may be able to stimulate the effect of employees' boundary-spanning behavior, and a high level of Zhongyong thinking can enhance the positive effects of boundary spanning on informal status.

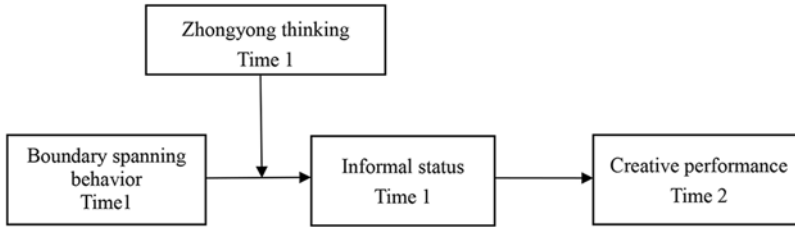
Based on the above analysis, this paper proposes the following hypothesis:

**Hypothesis 3:** Zhongyong thinking positively moderates the effect of employees' boundary-spanning behavior on informal status. That is, the stronger the Zhongyong thinking is, the more significant the positive relationship between employees' boundary-spanning behavior and informal status.

#### *Moderated mediation effect*

Taking into account that Zhongyong thinking can moderate the relationship between boundary-spanning behavior and informal status and that informal status mediates the relationship between boundary-spanning behavior and employee creative performance, this paper also speculates that the influence of boundary-spanning behavior on creative performance differs for each individual and that Zhongyong thinking may be able to moderate this effect. Specifically, employees with high Zhongyong thinking may be able to more acutely perceive and appropriately integrate both internal and external information in boundary-spanning activities and utilize the unique advantages brought by boundary spanning to establish a higher informal status. Those with higher status are more motivated to engage in positive behavior and are more likely to be supported by their colleagues, so they tend to engage in more creative activities to strengthen their position. Conversely, employees with low Zhongyong thinking tend to perform poorly when performing boundary-spanning activities, which can negatively affect informal status. In addition, low-status individuals lack sufficient motivation and receive little support, which makes it difficult for them to improve their creative performances. The theoretical model is shown as in Figure 1. Based on this, combining Hypotheses 2 and 3, this paper proposes the hypothesis that:

**Hypothesis 4:** The indirect effect of informal status between employees' boundary-spanning behavior and employees' creative performance is moderated by Zhongyong thinking. The higher the Zhongyong thinking employees have, the stronger the mediating role informal status plays.



**Figure 1.** Theoretical model.

## Methods

### *Sample and procedure*

For each variable employed in this study, data were collected through the questionnaire method. This study used a two-wave paired questionnaire, and data were collected from enterprises and institutions located in Beijing and Taiyuan, China. Convenience sampling was adopted as the sampling method for this study, which contributes to the availability of data. In order to reduce the participants' concerns about the questionnaire results being seen by others, the researchers adopted an online questionnaire collection method and declared on the first page of the questionnaire that the data were collected for academic research only. Furthermore, the researchers used colloquial terms as much as possible and informed the subjects that there was no right or wrong answer; they should just write what they actually thought. This ensured the validity and authenticity of the data that were collected.

For the purpose of matching the data from the two time points, the participants were asked to provide the last four digits of their cell phone numbers in the questionnaire. At Time 1, the research team invited 328 employees of the target companies to participate in a questionnaire, and data regarding boundary-spanning behavior, informal status, and Zhongyong thinking were collected. After a 1-month gap, questionnaires were further distributed at Time 2 to the subjects who participated in the first wave of the study for collecting data regarding employees' creative performance, receiving 251 valid data at that stage. There were 202 valid responses after removing responses that could not be correctly matched and those that presented regular answers. The effective recovery rate of the questionnaire was 80.48%, the majority of the respondents were 21–30 years old, accounting for 77.2%, then 31–40 years old, accounting for 16.3%. 39.1% of the respondents were male. A bachelor's degree constitutes the majority of educational background, accounting for 45%, followed by graduate students (including master's degree and PhD), accounting for 39%, and specialists and below accounting for 15.8%. There were 70% of participants with a tenure of no more than 6 years in their organizations, 17.8% with a tenure of 6–10 years, and 12.4% with a tenure of more than 11 years. With regard to the types of organizations the participants worked for, 26.2% worked for institutions, 29.2% for state-owned enterprises, and 44.6% for private enterprises and other types of organizations.

### *Measure*

This study utilized well-established measurement instruments. Before the study, the research team conducted a strict 'translate and back-translate' procedure to translate the English scales into accurate and fluent Chinese to ensure the validity of the questionnaire. The variables in this study were measured on a 5-point Likert scale, where 1 means 'strongly disagree' and 5 means 'strongly agree'.

### *Employees' boundary-spanning behavior*

The scale was developed by Marrone et al. (2007) and consisted of six items. Typical items include 'persuade outsiders (e.g., faculty and clients) to support team decisions' and 'reach out to individuals

outside of your team that can provide project-related expertise or ideas'. In this study, the internal consistency coefficient of the scale was 0.859.

#### *Informal status*

The scale was developed by Djurdjevic et al. (2017) and consisted of five items. Typical items include 'I have a great deal of prestige in my organization' and 'I possess a high level of prominence in my organization'. In this study, the internal consistency coefficient of the scale was 0.935.

#### *Zhongyong thinking*

The scale was developed by Wu and Lin (2005) and consisted of 13 items in three dimensions. Typical items include 'I will reconcile conflicting opinions in the discussion' and 'I will try to find an opinion that is acceptable to everyone in a situation where there is a dispute of opinion'. In this study, the internal consistency coefficient of the scale was 0.950.

#### *Employees' creative performance*

The scale was developed by Farmer et al. (2003) and consisted of four items. Typical items include 'I adopt new facilities, technologies, or methods to improve efficiency' and 'I develop ideas, methods, or products that are novel and useful to the organization'. In this study, the internal consistency coefficient of the scale was 0.882.

#### *Control variables*

There is evidence that demographic variables can affect boundary-spanning behavior and creative performance (Marrone et al., 2007). This study was designed to ensure the reliability of its conclusions by controlling five demographic variables, including employees' gender, age, educational level, tenure in the organization, and the type of organization in which they worked.

## Results

### *Common method variance*

The paper first tested for common method variance by Harman's single-factor method. Exploratory factor analysis was conducted on all items, and the results showed that the first principal component obtained without rotation explained 40.22% of the variance and did not exceed the recommended value of 50%. It was determined that this method was insensitive, and the unmeasured latent common method factor was applied to this study in order to test it further. The results demonstrated that the fit indices of the five-factor model with unmeasured latent common method factor ( $\chi^2 = 599.14$ ,  $df = 316$ , comparative fit index (CFI) = 0.93, non-normed fit index (NNFI) = 0.92, root mean square error of approximation (RMSEA) = 0.067) showed a significant change in the chi-square ( $\Delta\chi^2 = 121.74$ ,  $\Delta df = 28$ ) compared to those of the four-factor model ( $\chi^2 = 720.88$ ,  $df = 344$ , CFI = 0.91, NNFI = 0.90, RMSEA = 0.074). But since the chi-square is affected by sample size, it is also necessary to compare the changes in other indices. By comparison, this paper found that the improvement in CFI, NNFI, and RMSEA of the five-factor model with unmeasured latent common method factor was in the range of 0.01–0.02 as compared with the four-factor model, indicating that the five-factor model did not significantly improve its fit over the four-factor model. In summary, it can be concluded that the common method bias in this study was minimal.

### *Descriptive statistics*

Table 1 shows the correlation coefficients between variables, as well as the mean and standard deviation of each variable in this study. It can be seen that employees' boundary-spanning behavior has a significant positive correlation with creative performance ( $r = 0.61$ ,  $p < .01$ ) and informal status ( $r = 0.38$ ,  $p < .01$ ); informal status has a significant positive correlation with creative performance ( $r = 0.54$ ,  $p < .01$ ).



**Table 1.** Mean value, standard deviation, and correlation coefficient of each variable

Variable	1	2	3	4	5	6	7	8	9
1. Gender									
2. Age	-0.01								
3. Educational level	0.04	-0.38**							
4. Organization type	-0.02	0.04	-0.23**						
5. Tenure	-0.08	0.82**	-0.23**	0.06					
6. BS	0.10	0.07	-0.09	0.11	-0.08				
7. IS	-0.01	0.17*	-0.20**	0.12	0.09	0.38**			
8. ZY	0.10	0.17*	-0.09	0.03	0.06	0.44**	0.27**		
9. CP	0.02	0.13	-0.26**	0.17*	0.00	0.61**	0.54**	0.45**	
Mean	1.61	2.31	3.18	2.37	1.51	3.75	3.13	3.92	3.50
Standard deviation	0.49	0.65	0.85	1.15	0.97	0.56	0.69	0.59	0.67

Note:  $n = 202$ ; \* $p < .05$ , \*\* $p < .01$ ; BS stands for employees' boundary-spanning behavior; IS stands for informal status; ZY stands for Zhongyong thinking; and CP stands for employees' creative performance (same below).

**Table 2.** Results of confirmatory factor analysis

Model	$\chi^2$	$df$	$\Delta\chi^2$	CFI	NNFI	RMSEA
Four-factor model: BS, IS, ZY, CP	720.88	344	-	0.91	0.90	0.074
Three-factor model: BS + IS, ZY, CP	1163.24	347	442.36**	0.81	0.79	0.108
Three-factor model: BS + CP, IS, ZY	913.22	347	192.34**	0.87	0.85	0.090
Three-factor model: BS, IS + CP, ZY	1066.69	347	345.81**	0.83	0.81	0.102
Two-factor model: BS + IS + ZY, CP	1937.07	349	1216.19**	0.62	0.59	0.150
Two-factor model: BS + IS + CP, ZY	1417.61	349	696.73**	0.75	0.73	0.123
Single-factor model: BS + IS + ZY + CP	2258.66	350	1537.78**	0.55	0.51	0.165

Note: + represents the combination of two factors into one; \* $p < .05$ , \*\* $p < .01$ .

### Confirmatory factor analysis

A confirmatory factor analysis was conducted to test the discriminant validity of the four variables of boundary-spanning behavior, informal status, Zhongyong thinking, and creative performance of employees. The results are presented in Table 2. It can be observed that the fit indices of the four-factor model are significantly better than the other models, which indicates that the four variables involved in this study do have good discriminant validity.

### Hypothesis testing

In particular, to increase the robustness of the findings, researchers employed both hierarchical regression and process for the empirical analysis. These two methods complement each other and can provide more reliable statistical support for the findings of this paper.

### Main effects test

Hierarchical multiple regression was used to test the relationship between employees' boundary-spanning behavior and creative performance utilizing SPSS 27.0 in the following steps: The first step in the regression analysis was to take employees' creative performance into account as the dependent variable and demographic variables such as gender, age, educational level, tenure in the organization, and type of organization as the control variables. The regression results are listed in Table 3, M1. Based on this, employees' boundary-spanning behavior was included as the independent variable in

**Table 3.** Results of hierarchical multiple regression

Variable	Creative performance				Informal status			
	M1	M2	M3	M4	M5	M6	M7	M8
Gender	0.01	-0.03	-0.02	0.02	-0.01	-0.04	-0.04	-0.04
Age	0.29*	0.06	0.04	0.19	0.20	0.06	0.04	0.02
Educational level	-0.18*	-0.18**	-0.14*	-0.12	-0.13	-0.13	-0.13	-0.11
Organization type	0.13	0.06	0.05	0.09	0.09	0.04	0.04	0.04
Tenure	-0.28*	-0.05	-0.06	-0.23*	-0.11	0.04	0.04	0.06
BS		0.58***	0.46***			0.36***	0.32***	0.29***
IS			0.33***	0.49***				
ZY							0.11	0.10
Interaction								0.19**
$R^2$	0.11	0.42	0.51	0.34	0.06	0.18	0.19	0.23
$\Delta R^2$	0.11	0.31	0.09	0.23	0.06	0.12	0.01	0.03
$F$	4.73***	23.15***	28.25***	16.47***	2.58*	7.32***	6.65***	7.11***

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; Interaction = BS  $\times$  ZY.

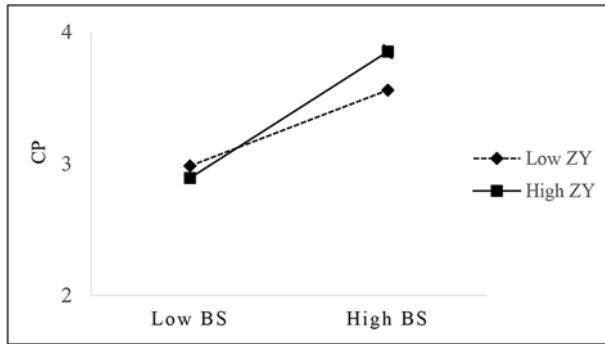
the regression model. The results are listed in Table 3, M2. As shown by M2, there is a significant positive effect of employees' boundary-spanning behavior on the creative performance of this employee ( $\beta = 0.579$ ,  $p < .001$ ); therefore, hypothesis Hypothesis 1 is verified.

#### Mediating effects test

Referring to the method by Wen, Zhang, Hou, and Liu (2004), the mediating effect of informal status between boundary-spanning behavior and creative performance was tested in four steps. To be specific, first, the main effect was tested, and the results were supported by Hypothesis 1 as shown in M2. Second, the relationship between boundary-spanning behavior and informal status was tested. As shown in Table 3, M6, boundary-spanning behavior is significantly associated with informal status for employees ( $\beta = 0.364$ ,  $p < .001$ ). Then, we conducted a test on the relationship between informal status and employees' creative performance. The results are shown in Table 3, M4, which indicates that there is a significant positive effect of informal status on employees' creative performance ( $\beta = 0.494$ ,  $p < .001$ ). Finally, on the basis of M1 and M2, we added mediating variables for regression. The results are shown in Table 3, M3, where the regression coefficient of employees' boundary-spanning behavior on creative performance decreases ( $\beta = 0.459$ ,  $p < .001$ ) and the effect of informal status on employees' creative performance is significant ( $\beta = 0.33$ ,  $p < .001$ ). This demonstrates that informal status plays a partially mediating role between employees' boundary-spanning behavior and creative performance. Therefore, Hypothesis 2 is supported.

#### Moderating effects test

The moderating effect of Zhongyong thinking was tested in four steps with hierarchical multiple regression, in which the interaction term between employees' boundary-spanning behavior and Zhongyong thinking was the product of the two separately standardized. Specifically, informal status was taken as the dependent variable. First, demographic variables were included in the regression model, with the regression results shown in Table 3, M5; then, employees' boundary-spanning behavior was added as the independent variable, with results listed in Table 3, M6; after that, the moderating variable, Zhongyong thinking, was introduced, with the results shown in Table 3, M7; and finally, the interaction term of employees' boundary-spanning behavior and Zhongyong thinking was added to



**Figure 2.** Moderating effects of Zhongyong thinking.

**Table 4.** Results of moderated mediation effect test

	Moderating variable	Level	Effects	SE	Boot 95% CI	INDEX	SE	Boot 95% CI
Conditional indirect effect	Zhongyong thinking	Low	0.05	0.05	[-0.025, 0.165]	0.11	0.05	[0.020, 0.203]
		High	0.18	0.06	[0.081, 0.315]			

Note: CI means confidence interval. The high/low of the moderating variable refers to above/below 1 SD from the mean.

the regression model, with the results presented in Table 3, M8, and it is evident that the coefficient of the interaction term is significant ( $\beta = 0.192, p < .01$ ). This indicates that Zhongyong thinking may serve as a positive moderator between employees’ boundary-spanning behavior and informal status. To further clarify the moderating role of Zhongyong thinking, this study plotted the relationship between employees’ boundary-spanning behavior and informal status by adding (subtracting) one standard deviation ( $\pm$ SD) from the mean value of Zhongyong thinking (as shown in Figure 2). The simple slope test indicates that the slope of the straight line where high Zhongyong thinking is located ( $\gamma = 0.55, p < .001$ ) is greater than the slope of the straight line where low Zhongyong thinking is located ( $\gamma = 0.16, p < .05$ ), indicating that Zhongyong thinking plays a positive moderating role, that is, the stronger the Zhongyong thinking is, the stronger the positive impact of employees’ boundary-spanning behavior on their creative performance. Therefore, Hypothesis 3 was supported.

*Moderated mediation effects*

This study employed the SPSS/SAS macro-PROCESS developed by Hayes (2017) to test the moderating effect of Zhongyong thinking on the mediating effect of informal status. The results are presented in Table 4. As shown in Table 4, the indirect effect that employees’ boundary-spanning behavior affects employees’ creative performance through informal status is not significant when Zhongyong thinking is low ( $b = 0.05$ , Boot 95% CI contains 0); however, when Zhongyong thinking is high, employees’ boundary-spanning behavior has a significant indirect effect on their creative performance ( $b = 0.18$ , Boot 95% CI does not contain 0). The above confidence interval (CI) contains 0 in case of low Zhongyong thinking and does not contain 0 in case of high Zhongyong thinking. According to Preacher, Rucker, and Hayes (2007), ‘one indirect effect is significant and another is insignificant for different values of the moderating variable, indicating the presence of the moderated mediating effect’; meanwhile, Hayes (2015) suggests that further analysis should be made with reference to the INDEX indicator. As observed in Table 4, the INDEX is 0.11 and the CI is [0.02, 0.2], not including 0. In summary, it can be concluded that Zhongyong thinking moderates the mediating effect of informal status between employees’ boundary-spanning behavior and creative performance. Therefore, Hypothesis 4 was verified.

## Discussion and conclusion

In contrast to the numerous studies that have confirmed the positive effects of boundary-spanning behavior at the team level (Benoliel & Somech, 2015; Marrone et al., 2022; Tortoriello & Krackhardt, 2010), there has not been sufficient investigation of the effects of employee boundary-spanning behavior at the individual level. Particularly, the relationship between boundary-spanning behavior and employees' creative performance has not been tested empirically. Whether boundary-spanning behavior at the individual level affects an employee's creative performance? If so, how does the mechanism work? And what role does Chinese culture play in the mechanism of employees' boundary-spanning behavior? To answer the above questions, this study focused on individual-level boundary-spanning behavior and explored the relationship between employees' boundary-spanning behavior and creative performance through a two-wave questionnaire survey. Specifically, from the perspective of status characteristics theory, this study verifies the main effect of employees' boundary-spanning behavior on creative performance, the mediating effect of informal status between them, the moderating effect of Zhongyong thinking between employees' boundary-spanning behavior and informal status, and its moderating effect on the mediating role of informal status, that is, the moderated mediation effect, through empirical data. According to the findings of this study, all four hypotheses were supported in terms of empirical evidence.

## Discussion of study results

First, this study confirms that there is a positive effect of employees' boundary-spanning behavior on that employee's creative performance. This indicates that boundary-spanning behavior is a significant factor in motivating individuals to innovate and obtaining creative performance. Although previous studies have not yet explicitly stated the relationship between employees' boundary-spanning behavior and their creative performance, it has been argued that boundary-spanning behavior as a complex extra-role behavior tends to induce negative emotions and responses for individuals (Marrone et al., 2007; Rigopoulou, Theodosiou, Katsikea, & Perdakis, 2012), which may be detrimental to individual-level employee innovation (Zhu et al., 2020). Through empirical analysis, this study demonstrates that boundary-spanning behavior may lead to certain negative effects for employees, but its motivating effect to achieve creative performance may be more significant. As an efficient resource searching method, boundary-spanning activities provide the boundary spanners with a considerable amount of potential to contribute to the organization and the team, as well as superior influence over others. This allows individuals to earn cooperation and support in their organization, thereby increasing motivation and providing better opportunities to participate in innovative and creative activities within the organization. Therefore, this paper tested the relationship between boundary-spanning behavior and creative performance, and the empirical results support a positive relationship between the two.

Second, this study evidences that informal status plays a partially mediating role between boundary-spanning behavior and employees' creative performance. Reasons for the positive effect of boundary-spanning behavior on employees' creative performance, it is hypothesized in this study that individuals who engage in boundary-spanning activities possess higher potential for performance output and can easily obtain higher prestige and influence, which helps to boost their informal status and thus their creative performance. This result is generally consistent with the view of status characteristics theory that individuals who are held to higher performance expectations achieve higher status, which in turn influences their subsequent attitudes and behaviors (Berger et al., 1972). Moreover, the empirical findings of this paper show that informal status partially mediates the relationship between employees' boundary-spanning behavior and their creative performance, indicating that boundary-spanning behavior can have a direct effect on employees' creative performance, as well as indirectly influence creative output through informal status.

Finally, this study investigates that Zhongyong thinking not only plays a moderating role between boundary-spanning behavior and informal status but also moderates the mediating role of informal status. Despite some studies having shown that there are certain negative effects of employees'

boundary-spanning behavior (Rigopoulou et al., 2012; Zhu et al., 2020), the empirical results of this study suggest that boundary-spanning behavior does not ultimately determine individual behavioral performance. A boundary-spanning employee's ability to demonstrate higher creative performance is also influenced by his or her relative position within the team as well as their cognitive mindset. This is due to the fact that individuals with high Zhongyong thinking have a strong 'interpersonal orientation' and value interpersonal relationships with others (Shen, 2005); informal status is a status conferred by others in the social network formed within the organization, and its acquisition depends upon interpersonal interactions. Therefore, individuals with high Zhongyong thinking may be more sensitive and concerned about their informal status, which may help strengthen the positive effect of boundary-spanning behavior on informal status and consequently have a positive impact on creative performance.

### *Theoretical contributions*

The theoretical contribution of this study is the systematic elaboration of whether, how, and when individual-level boundary-spanning behavior affects employees' creative performance. To be specific, (1) the findings of this study indicate that employees' boundary-spanning behavior has a significant positive effect on their creative performance. As we mentioned earlier, it is inconclusive about the effects of boundary-spanning behavior on employee innovation. For example, it has been suggested that boundary-spanning behavior may induce role stress and be detrimental to employees' creativity (Zhu et al., 2020). However, there is a lack of empirical findings on the relationship between employees' boundary-spanning behavior and their creative performance in existing studies. As a result of the empirical study presented in this paper, it has been demonstrated that there exists a positive relationship between the two and provides some groundwork for future research in this area. (2) This research provides a procedural explanation and theoretical perspective on the question of 'how employees' boundary-spanning behavior affects their creative performance'. The majority of previous studies have explained boundary-spanning behavior affecting individual attitudes and behaviors based on intrinsic factors of employees, as discussed earlier. The discussion is primarily based on conservation of resource theory (Zhu et al., 2020) and ego depletion theory (Xu, 2019) but ignores the possibility that the employee may be a member of a social group, whose status within the team plays an essential role. In contrast to previous studies, this study finds that employees' informal status plays a mediating role between their boundary-spanning behavior and creative performance through status characteristics theory, presenting a relatively novel perspective on boundary-spanning behavior research. (3) The results confirm that there is a significant effect of the individual variable of Zhongyong thinking, which strongly reflects Chinese cultural characteristics, on the effectiveness of boundary-spanning behavior. This finding supports Marrone's (2010) speculation that there are differences in the implementation effects of boundary-spanning behavior in different cultural contexts. Existing research emphasizes that negative outcomes such as resource depletion and role stress are universal human emotional responses when individuals engage in boundary-spanning behavior but ignores the potential moderating role of values when individuals are situated within a specific cultural context. This study illustrates how cultural value factors respond to the potential negative effects of boundary-spanning behavior by testing the effects of Zhongyong thinking on the relationship between boundary-spanning behavior and employees' creative performance. The work contributes to a better understanding of Chinese cognitive and behavioral patterns for scholars, as well as providing a sample of empirical data regarding the effectiveness with which boundary-spanning behavior can be implemented in the Chinese context.

### *Practical Implications*

It is also possible that the findings of this study will have implications for the management practices of organizations. (1) As the research findings suggest, the implementation of boundary-spanning

behavior is conducive to enhancing employees' creative performance. Thus, in actual management practice, managers can appropriately encourage employees to carry out boundary-spanning activities, give them more opportunities to develop their talents, and provide them with the necessary support to enhance their psychological security, which in turn promotes boundary-spanning members to actively engage in innovation activities and obtain creative results. (2) The findings of this study suggest that informal status can mediate boundary-spanning behavior to enhance employees' creative performance. Thus, it is essential that the role of an employee's intra-team status be considered in determining whether the knowledge and resources acquired from boundary-spanning activities can be translated into tangible creative performance. It is therefore important for managers to consider establishing employees' informal status when motivating them to engage in boundary-spanning behavior. Leaders may, for example, praise boundary spanners publicly, encourage them to utilize new technologies and knowledge flexibly, and coach their colleagues in order to increase recognition of the capacities and image of boundary spanners among team members, leading to a higher level of informal status and thereby promoting the creative performance of boundary spanners. (3) According to this study, employees with high Zhongyong thinking can think from multiple perspectives, integrate internal and external information effectively, and adopt harmonious behaviors, thus alleviating various damages to employees and minimizing the possible negative effects caused by boundary-spanning behavior. As a result, managers should place a high priority on shaping the values of their employees. In addition to selecting employees with Zhongyong thinking as the implementers of boundary-spanning behavior, leaders can also make use of cultural value factors to guide employees' mindset and train them to self-regulate in their work with the concept of 'Zhongyong', so as to maximize the positive effect of boundary-spanning behavior on employees' creative performance.

### *Limitations and directions for future research*

First, the variables employed in this study were measured by means of employee self-reported, which may increase common method variance. Although statistical analysis indicated that the common method variance was minor in this study, future studies should adopt a multisource data measurement approach in order to further reduce the impact of common method variance on the results. In addition, this study utilized a two-wave approach to collect questionnaire data, which reduced the impact of common source bias to some extent. However, the data on boundary-spanning behavior and informal status were collected in the same wave, so causality among variables is still not fully established. It may be possible to test the relationship between variables in future studies by using a three-wave follow-up study or an experimental survey to obtain reliable causal conclusions.

Second, this study confirms that informal status mediates the relationship between boundary-spanning behavior and creative performance from a status characteristics perspective. This suggests that boundary-spanning behavior may impact employees' creative performance through other mechanisms in addition to their informal status at the individual level. Accordingly, future research should consider other theoretical perspectives in order to better understand how boundary-spanning behavior affects individual creative performance. For example, introducing organization-based self-esteem based on the perspective of social exchange theory to test whether it can also mediate the positive effect of employees' boundary-spanning behavior on their creative performance.

Finally, among the individual cultural value factors, this study examined only the contribution of Zhongyong thinking to the effectiveness of boundary-spanning behavior. It is possible to conduct future studies to examine the effects of other indigenous Chinese values from different perspectives or test whether and how other cultural values influence the roles of boundary-spanning behavior based on samples drawn from different cultural contexts. Furthermore, the influence of cultural value factors on employees' boundary-spanning behavior may not only play a moderating role but the possibility and motivation of employees in different cultures to engage in boundary-spanning behavior may also be different. Boundary-spanning behavior, for example, may not always be the result of a

voluntary decision on the part of the employee but rather of a deliberate effort on the part of the team to adapt to the external circumstances (Ancona & Caldwell, 1992). Chinese employees have been under the influence of Confucianism for quite a long time, and most of them have a high degree of Zhongyong thinking and tend to 'fit in' in the group (Shen, 2005), so they are less likely to take the initiative to conduct such distinctive actions like boundary-spanning behavior, and their implementation of boundary-spanning behavior is more likely to be due to the organization's order. This is not always the case for employees in other cultures. There is a possibility that boundary-spanning behavior generated by these two different motivations may produce different outcomes, and future research can focus on the motivation of employees within different cultural contexts to implement boundary-spanning behavior and its mechanism to further improve the research in this field.

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