



RESEARCH ARTICLE

Research on the Influence of Perceived Organizational Support and Job Reshaping on the Innovative Behavior of Vocational College Teachers in China

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ARTICLE INFO	ABSTRACT
Received: Aug 11, 2024 Accepted: Oct 7, 2024	This study focuses on vocational college teachers in China, systematically investigating the impact of perceived organizational support on teachers' innovative behavior, with particular emphasis on the mediating role of job reshaping between the two. A survey of vocational college teachers across five regions in China was conducted, yielding 986 valid responses. The results of data analysis indicate that perceived organizational support significantly and positively predicts both teachers' innovative behavior and job reshaping. Moreover, job reshaping partially mediates the relationship between perceived organizational support and innovative behavior. This study not only provides a theoretical foundation for enhancing perceived organizational support and innovative behavior among vocational college teachers but also offers practical recommendations for promoting innovative management strategies in vocational education. It extends the applicability of existing innovation behavior theories within the vocational education context.
Keywords Perceived organizational support Innovative behavior Job reshaping Vocational college teachers	
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INTRODUCTION

1.1 Research Background and Motivation

In the context of the rapid development of the global knowledge economy, innovation has become one of the core drivers of socio-economic progress. Globally, the education sector, especially vocational education, is regarded as a critical channel for fostering innovation. Vocational colleges not only play a central role in cultivating applied talents but also serve as key agents in driving educational reform and social innovation (Zheng, 2024). In this context, teachers' innovative behavior is widely recognized as a crucial factor in enhancing teaching quality and fostering students' innovative capabilities (Su et al., 2024). Therefore, studying the innovative behavior of teachers, particularly vocational college teachers, holds significant practical importance for advancing the reform and development of vocational education.

In recent years, with the deepening of educational reform in China, the importance of teachers' innovative behavior in vocational colleges has gradually become more prominent. However, despite some teachers demonstrating a positive attitude toward innovation in teaching methods, curriculum design, and research, the overall level of innovative behavior among vocational college teachers remains relatively low. Vocational teachers face challenges such as heavy teaching workloads, a lack of resources for innovation, and insufficient organizational support, all of which hinder the improvement of their innovative capacity and motivation (Khan & Kakha, 2024). Furthermore, the existing incentive mechanisms and career development paths for teachers have not effectively

stimulated their innovative potential (Lopez-Acevedo, 2002). This indicates that while teachers' innovative behavior is highly valued, many pressing issues still need to be addressed.

To address this challenge, the Chinese government has recognized the importance of enhancing teachers' innovative capabilities as a key to achieving educational modernization. However, how to effectively translate policies into concrete teaching reforms and innovative behaviors remains a critical issue for educational administrators. Against this backdrop, investigating the driving factors of teachers' innovative behavior, particularly the role of perceived organizational support, becomes especially important.

Globally, research on the relationship between perceived organizational support and innovative behavior has been widely conducted, particularly in developed countries, where numerous empirical studies have confirmed the positive effect of perceived organizational support on teachers' innovative behavior (Jamal et al., 2023; Eisenberger et al., 2021). Perceived organizational support refers to teachers' overall perception of their institutions' provision of resources, emotional support, and job security. It motivates teachers to innovate by enhancing their sense of belonging and professional identity (Rhoades & Eisenberger, 2002). However, existing research has primarily focused on teachers in general higher education institutions, while studies targeting vocational college teachers remain relatively scarce. In developing countries, in particular, the specific mechanisms through which perceived organizational support influences teachers' innovative behavior require further exploration.

In light of current research, this study introduces job reshaping as a mediating variable to explore its role in the mechanism between perceived organizational support and teachers' innovative behavior. Job reshaping refers to teachers actively modifying the content of their work, work methods, or interpersonal interactions to enhance the meaning and challenge of their work (Harju et al., 2023). Although job reshaping has been extensively studied and applied in the field of corporate management, research in the educational context, particularly in vocational education, remains insufficient. Through empirical analysis, this study verifies the mediating role of job reshaping in enhancing teachers' innovative behavior, further enriching the theoretical framework of the relationship between perceived organizational support and innovative behavior (Zhang & Parker, 2019). Job reshaping is not only part of individual behavioral adjustments but can also serve as a strategic tool for organizational management. By designing and implementing effective management measures, school administrators can promote teachers' innovative behavior (Sharifov et al., 2024). This perspective broadens the approach to educational management by not only focusing on individual teachers' innovation capabilities but also emphasizing the promotion of an overall innovation culture at the school level through the optimization of organizational policies and incentive mechanisms.

The primary aim of this study is to analyze the mechanism by which perceived organizational support influences the innovative behavior of vocational college teachers, with a particular focus on the mediating role of job reshaping. The research findings not only contribute to a deeper understanding of the mechanisms underlying the innovative behavior of vocational college teachers but also provide theoretical support and practical guidance for school administrators. By optimizing perceived organizational support and incentive mechanisms, administrators can enhance teachers' innovative capacities, thereby promoting the innovation and development of vocational education.

1.2 Research Objectives and Questions

1.2.1 Research Objectives

This study constructs a multilevel model to explore the relationships among perceived organizational support, job reshaping, innovative behavior, and gender differences among vocational college teachers. The primary focus is to analyze the influence of perceived organizational support on

innovative behavior, with job reshaping introduced as a mediating variable. The specific research objectives include:

- (1) To investigate the relationships among perceived organizational support, innovative behavior, and job reshaping among vocational college teachers;
- (2) To examine the mediating role of job reshaping between perceived organizational support and innovative behavior among vocational college teachers.

1.2.2 Research Questions

Based on the above research objectives, the following research questions are proposed:

- (1) Is there a relationship between perceived organizational support, innovative behavior, and job reshaping among vocational college teachers?
- (2) Does job reshaping mediate the relationship between perceived organizational support and innovative behavior among vocational college teachers?

2. THEORETICAL FOUNDATION AND HYPOTHESES

2.1 Current Status of Teacher Background Variables in Various Constructs

Previous research has indicated that significant differences exist in perceived organizational support, innovative behavior, and job reshaping based on teachers' gender, teaching experience, and professional title. Studies have shown that female teachers tend to rely more on emotional support, emphasizing teamwork and leadership care, whereas male teachers focus more on obtaining work resources and autonomy (Johnson & Johnson, 2019; Kashif & Afza, 2022). Teachers with longer teaching experience typically have a higher demand for organizational resources and management support, especially in the allocation of teaching and research resources. However, as their tenure increases, some teachers' motivation for innovation may diminish due to occupational burnout (Lee & Huang, 2018). In contrast, teachers with less experience are often more motivated to innovate and are more willing to adopt new methods and technologies (Yuan & Woodman, 2010). Additionally, teachers with higher professional titles exhibit greater autonomy and strategic behavior in job reshaping and innovation. They often optimize their work by adjusting task structures (Kraimer et al., 2011), while those with lower professional titles tend to rely more on organizational arrangements and enhance work performance by adjusting their collaborative approaches (Parker et al., 2017). Therefore, in this study, teachers' gender, teaching experience, and professional title in vocational colleges will be included as control variables.

2.2 Perceived Organizational Support Theory and Teachers' Innovative Behavior

Perceived Organizational Support (POS) theory, proposed by Eisenberger et al. (1986), emphasizes employees' overall perception of organizational support. POS refers to the extent to which employees believe that their contributions are valued by the organization and that the organization cares about their well-being (Rhoades & Eisenberger, 2002). This perception directly influences employees' work attitudes and behaviors. Among vocational college teachers, POS has been shown to significantly impact professional identity, job satisfaction, and innovative behavior (Putri & Damayanti, 2023).

Innovative behavior generally refers to the process by which employees generate, promote, and implement new ideas in the workplace (Scott & Bruce, 1994). For vocational teachers, innovation is reflected not only in the renewal of teaching methods and content but also in the management of research projects, curriculum design, and the development of teaching resources (Qi, 2023). Teachers' innovative behavior is critical for improving teaching quality and fostering students' innovative abilities.

Previous studies have demonstrated a significant positive correlation between POS and innovative behavior (Shanker et al., 2017). According to Social Exchange Theory (Blau, 1964), when teachers perceive organizational recognition and support for their contributions, they are more willing to

reciprocate by actively engaging in innovation. Furthermore, POS provides essential resources and a sense of psychological safety, reducing teachers' fear of failure in innovation and motivating them to undertake innovative activities (Xerri & Brunetto, 2013). For example, POS can enhance teachers' self-efficacy, boost their confidence in innovative teaching, and promote the adoption of new methods and technologies (Bakker et al., 2012). Recent research further reveals that POS not only fosters innovative behavior through traditional means such as resource provision and psychological safety but also enhances teachers' self-identity, boosting their loyalty and sense of belonging to the organization, which in turn encourages greater engagement in innovation (Eisenberger et al., 1986).

Based on the above analysis, this study proposes the following hypothesis:
H1: Perceived organizational support has a significant positive effect on the innovative behavior of vocational college teachers.

2.3 Job Reshaping Theory and Its Mediating Role

Wrzesniewski and Dutton (2001) proposed the Job Reshaping Theory, defining it as employees modifying tasks, methods, or interpersonal relationships to increase the meaning and challenge of their work. Tim et al. (2012) further categorized job reshaping into four dimensions: increasing structural resources, increasing social resources, enhancing challenging demands, and reducing hindering demands. These adjustments help employees better cope with workplace challenges, improving job performance and innovative capabilities.

Perceived Organizational Support (POS) theory suggests that when employees perceive that the organization cares about their well-being and values their contributions, they adopt positive work attitudes and behaviors (Rhoades & Eisenberger, 2002). In the context of vocational college teachers, higher perceived organizational support can motivate them to proactively adjust their work content and methods, thereby engaging in job reshaping. For instance, when teachers perceive strong support from their institution for their teaching and research, they are more likely to adjust teaching strategies, improve curriculum design, or introduce new technologies to address work challenges (Bakker et al., 2012). This process not only enhances teachers' sense of job efficacy but also leads to a redefinition of their work tasks and interpersonal interactions. Empirical studies have confirmed that POS has a significant positive impact on job reshaping. Teachers, when encouraged by organizational support, are willing to adjust work structures and methods to improve teaching quality (Zhang & Parker, 2019).

Job reshaping significantly enhances innovative behavior by increasing employees' autonomy and sense of job control. By adjusting tasks and the work environment, teachers can not only increase the challenges of their work but also optimize resource allocation, thus improving their innovative capacity (Wrzesniewski & Dutton, 2001). For example, teachers can adjust teaching methods or alter course structures to meet new educational demands, while also collaborating with colleagues to share experiences and stimulate innovative thinking (Leana et al., 2009). Research indicates that teachers who engage in job reshaping are better able to handle the complexity and uncertainty of teaching and research, which helps them generate new ideas and methods, thereby driving educational innovation (Knight et al., 2021). Thus, job reshaping has a significant positive effect on teachers' innovative behavior.

As a mediating mechanism, job reshaping transforms perceived organizational support into innovative behavior. When teachers feel supported by the organization, they tend to adjust their work content and methods to increase work enthusiasm, and this adjustment further promotes the development of innovative behavior (Petrou et al., 2012). First, higher perceived organizational support enhances teachers' self-efficacy, encouraging them to take on more responsibility and seek innovative opportunities in their work (Demerouti et al., 2015). Second, by optimizing work processes and resource allocation through job reshaping, teachers not only improve work efficiency

but also create favorable conditions for innovative behavior (Bruning & Campion, 2018). Therefore, job reshaping plays a significant mediating role between perceived organizational support and innovative behavior.

In summary, perceived organizational support indirectly influences teachers' innovative behavior through the mediating variable of job reshaping. The support provided by the organization enhances teachers' work enthusiasm, prompting them to engage in job reshaping to address challenges in teaching, which in turn fosters innovative behavior. Through this mechanism, the positive effects of perceived organizational support and job reshaping on innovative behavior are fully realized.

Based on the above analysis, the following hypotheses are proposed:
H2: Perceived organizational support has a significant positive effect on job reshaping among vocational college teachers.

H3: Job reshaping has a significant positive effect on innovative behavior among vocational college teachers.

H4: Job reshaping mediates the relationship between perceived organizational support and innovative behavior among vocational college teachers.

2.4 Research Hypotheses and Model Construction

Based on the research motivation, objectives, and the theoretical analysis and hypotheses discussed above, the framework for this study has been constructed, as shown in Figure 1.

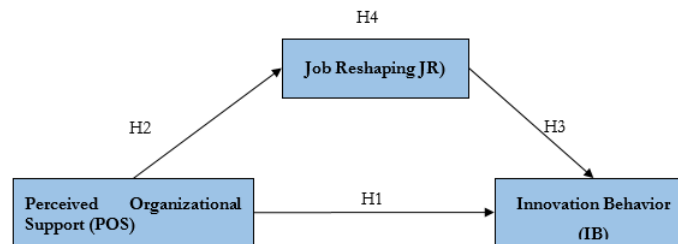


Figure 1. Research Model

Note: The research model is derived from the framework developed in this study.

In this study, a model consisting of three variables—perceived organizational support, innovative behavior, and job reshaping—was constructed to reveal the mechanism behind the innovative behavior of vocational college teachers. The model hypothesizes that perceived organizational support has a direct positive effect on teachers' innovative behavior (H1), meaning that when teachers feel supported by their schools and organizations, they are more likely to engage in innovative activities. Additionally, this study introduces job reshaping as a mediating variable, further hypothesizing that perceived organizational support not only influences innovative behavior directly but also indirectly promotes it through job reshaping (H2, H3, H4). Specifically, job reshaping represents the process in which teachers, after perceiving organizational support, proactively adjust their work tasks, methods, and interpersonal interactions, helping to explain how teachers enhance their innovative behavior by reshaping their work.

3 RESEARCH METHODOLOGY

3.1 Sample and Data Collection

This study employed a questionnaire survey method, with the research subjects being teachers from five vocational colleges in China. A total of 1,000 formal questionnaires were distributed, and after excluding invalid responses, 986 valid questionnaires were collected, resulting in an effective response rate of 98.6%. However, despite the large sample size and high response rate, the

geographic scope of the study was limited to certain regions, which may impose some limitations on the external validity of the results. Future research should expand the geographical distribution of the sample to include vocational college teachers from more regions to enhance the generalizability of the findings. Additionally, as the study sample mainly consisted of teachers from vocational colleges, the innovative behavior of teachers in other types of institutions and their response to perceived organizational support may differ. Future studies could consider expanding the sample to include teachers from a broader range of educational institutions. The demographic characteristics of the research sample are shown in Table 1.

Table 1. Sample Distribution (n = 986)

Background Variable	Category	Number of People	Percentage (%)
	Male	500	50.7
	Female	486	49.3
Title	Assistant Lecturer and below	210	21.3
	Lecturer	286	29
	Associate Professor	425	43.1
	Professor	65	6.6
Teaching Experience	Less than 5 years	246	24.9
	6-15 years	237	24
	16-25 years	248	25.2
	More than 25 years	255	25.9
Total		986	100

Note: Data compiled from this study.

3.2 Variable Measurement

This study employed internationally recognized, well-established scales and conducted both Chinese-English translations and pilot testing to ensure the reliability and validity of the scales. All scales were rated using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

3.2.1 Perceived Organizational Support

This study adopted the Teacher Perceived Organizational Support Questionnaire developed by (Zhao, 2014), which was based on the research of Ling (Wenquan et al., 2006) and (Eisenberger et al., 1986). The questionnaire includes three dimensions: work support, value recognition, and concern for well-being, with a total of 22 items designed to comprehensively measure the level of perceived organizational support among vocational college teachers. Reliability analysis showed that the Cronbach's Alpha coefficient for this scale was .870, indicating high internal consistency. Additionally, previous studies (Li & Wang, 2018; Chen et al., 2021) have confirmed the good reliability and validity of this scale, further demonstrating its dependability in measuring perceived organizational support among teachers.

3.2.2 Innovative Behavior

This study utilized the Teacher Innovative Work Behavior Scale developed by (Li, 2018) to assess innovative behavior. The scale includes two dimensions: idea generation and idea implementation. Reliability analysis indicated that the Cronbach's Alpha coefficient for this scale was .930,

demonstrating excellent internal consistency. Additionally, previous studies (Hosseini & Shirazi, 2021; Gkontelos et al., 2022) have confirmed the good reliability and validity of this scale, further validating its dependability in measuring teachers' innovative behavior.

3.2.3 Job Reshaping

This study employed the Job Reshaping Scale developed by (Van Wingerden & Poell, 2019), based on the work of (Tims et al., 2012). The scale includes three dimensions: increasing social job resources, increasing structural job resources, and increasing challenging job demands. Reliability analysis revealed a Cronbach's Alpha coefficient of .820, indicating good reliability. Additionally, previous studies (Rudolph et al., 2017) have validated the good reliability and validity of this scale, further confirming its dependability in measuring job reshaping within the context of teachers' innovative behavior.

4. DATA ANALYSIS AND RESULTS

4.1 Descriptive Statistics and Correlation Analysis Results

This study used SPSS and AMOS to analyze the data, ensuring scientific rigor and accuracy. The descriptive statistics and correlation analysis results are presented in Table 2. From the descriptive statistics, it can be observed that the teachers surveyed exhibited positive trends across the three dimensions: perceived organizational support, innovative behavior, and job reshaping. Specifically, the average score for perceived organizational support was 3.725 (SD = 0.717), indicating that teachers generally felt a high level of support from their institutions. The average score for innovative behavior was 3.720 (SD = 0.723), reflecting an above-average level of innovation. The average score for job reshaping was 3.704 (SD = 0.717), showing that teachers displayed a positive attitude toward adjusting their work methods.

Table 2. Descriptive Statistics and Correlation Matrix

Variable	M	SD	POS	IB	JR
Perceived Organizational Support	2.564	0.477	1		
Innovativ Behavior	3.391	0.766	0.828	1	
Job Reshaping	2.753	0.999	0.834	0.815	1

Note: *** $p < 0.001$, data compiled from this study.

4.2 Reliability Analysis

This study conducted an internal consistency test on the scales for perceived organizational support, innovative behavior, and job reshaping. The results are shown in Table 3. The overall Cronbach's Alpha for the perceived organizational support scale was .892, with the Cronbach's Alpha for the three dimensions being .704, .800, and .842, respectively. The overall Cronbach's Alpha for the innovative behavior scale was .868, with the two dimensions having Cronbach's Alpha values of .946 and .754, respectively. For the job reshaping scale, the overall Cronbach's Alpha was .948, with the three dimensions scoring .836, .884, and .856, respectively. Each measurement tool and its dimensions showed good internal consistency, indicating the scales' high reliability (Hair et al., 2019).

Table 3 Reliability Analysis Results

Scale	Dimension	Cronbach's Alpha	
		Dimension	Overall

Perceived Organizational Support	Work Support	0.704	.892
	Value Recognition	0.800	
	Concern for Well-being	0.842	
Innovative Behavior	Idea Generation	0.946	.868
	Idea Implementation	0.754	
Job Reshaping	Increasing Structural Job Resources	0.836	.948
	Increasing Social Job Resources	0.884	
	Increasing Challenging Job Demands	0.856	

Note: Data compiled from this study.

4.3 Validity Analysis

The study results show the following fit indices for the perceived organizational support model: $\chi^2/df = 2.879$, CFI = .936, GFI = .959, NFI = .905, TLI = .929, all of which are greater than .800; RMSEA = .044, indicating a good fit; IFI = .936, PNFI = .819. For the innovative behavior model: $\chi^2/df = 1.286$, CFI = .996, GFI = .985, NFI = .983, TLI = .995, all greater than .800; RMSEA = .017, indicating a good fit; IFI = .996, PNFI = .833. For the job reshaping model: $\chi^2/df = 1.804$, CFI = .991, GFI = .977, NFI = .980, TLI = .989, all greater than .800; RMSEA = .029, indicating a good fit; IFI = .991, PNFI = .825, all greater than .500. Therefore, all fit indices meet the standard criteria, indicating that the models exhibit good model fit for the innovative behavior model.

The confirmatory factor analysis (CFA) results for perceived organizational support indicate standardized regression weights (SRW) ranging from .560 to .851. The composite reliability (CR) for the work support dimension was .864, with an average variance extracted (AVE) of .508. For the value recognition dimension, the CR was .901, with an AVE of .573, and for the concern for well-being dimension, the CR was .906, with an AVE of .615. The CFA results for innovative behavior showed SRWs ranging from .657 to .874, with the CR for the idea generation dimension being .946 and an AVE of .744. The CR for the idea implementation dimension was .884, with an AVE of .591. For job reshaping, the SRWs ranged from .704 to .756. The CR for increasing structural job resources was .836, with an AVE of .506; for increasing social job resources, the CR was .884, with an AVE of .559; and for increasing challenging job demands, the CR was .856, with an AVE of .543. All three scales met the criteria of SRW > .500, CR > .700, and AVE > .500, indicating that the measurement models for perceived organizational support, innovative behavior, and job reshaping have good convergent validity.

4.5 Mediation Effect

The results of the mediation analysis are shown in Table 4. First, in Model 1, perceived organizational support was used as the independent variable and innovative behavior as the dependent variable. The analysis results showed $F = 210.483$, reaching a significant level ($p < .001$), with an adjusted $R^2 = .460$, indicating that perceived organizational support explains 46% of the variance in innovative behavior. The standardized regression coefficient (β) was .680 ($p < .001$), indicating a significant positive effect of perceived organizational support on innovative behavior.

In Model 2, perceived organizational support was used as the independent variable and job reshaping as the dependent variable. The analysis results showed $F = 315.616$, reaching a significant level ($p < .001$), with an adjusted $R^2 = .561$, indicating that perceived organizational support explains 56.1% of

the variance in job reshaping. The standardized regression coefficient (β) was .751 ($p < .001$), indicating a significant positive effect of perceived organizational support on job reshaping—higher perceived organizational support corresponds to higher job reshaping.

In Model 3, both perceived organizational support and job reshaping were used as independent variables, and innovative behavior as the dependent variable. The analysis results showed $F = 215.061$, reaching a significant level ($p < .001$), with an adjusted $R^2 = .521$, indicating that perceived organizational support and job reshaping explain 52.1% of the variance in innovative behavior. The standardized regression coefficient (β) for perceived organizational support was .399 ($p < .001$), and for job reshaping, it was .375 ($p < .001$), both of which were statistically significant. These findings indicate that job reshaping partially mediates the relationship between perceived organizational support and innovative behavior.

Table 4 Mediation Effect of Job Reshaping

Variable	Model 1 (IB) β	Model 2 (JR) β	Model 3 (IB) β
Gender	.016	-.009	.019
Teaching Experience	-.017	.026	.008
Professional Title	-.018	-0.018	-.011
POS	.680***	.751***	.399***
JR			.375***
R ²	.462	.563	.523
Adj-R ²	.460	.561	.521
F	210.483***	315.616***	215.061***

Note: *** $p < 0.001$, data compiled from this study.

To test the stability of the mediation effect, this study applied the Bootstrap method as recommended by Preacher and Hayes (2008), resampling 5,000 times from the sample to estimate the mediation effect coefficient with a 95% confidence interval.

As shown in Table 5, according to the Bootstrap confidence interval for the direct effect, if the interval contains zero, it indicates a full mediation effect; if it does not contain zero, it indicates a partial mediation effect. The results of this study show that the direct effect of perceived organizational support on innovative behavior has an effect value of .640, with a 95% confidence interval of 0.518–0.745, which does not contain zero, indicating a partial mediation effect.

As shown in Table 4.21, for the indirect effect based on the Bootstrap confidence interval, the results indicate that the indirect effect of perceived organizational support on innovative behavior through job reshaping has an effect value of .452, with a 95% confidence interval of 0.373–0.533, which also does not contain zero, indicating that the mediation effect is significant.

Table 5 Mediation Effect Test

Path	Effect Value	Standard Error	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Direct Effect : POS→IB	.640**	0.054	0.535	0.745
Indirect Effect : POS→JR→IB	.452**	0.041	0.373	0.533

Note: ***p < 0.001, data compiled from this study.

5. DISCUSSION AND CONCLUSION

5.1 Main Findings

This study provides an in-depth analysis of the interactions among perceived organizational support, job reshaping, and innovative behavior, revealing the mechanisms behind innovative behavior in vocational college teachers and offering new theoretical perspectives. The main findings are as follows:

First, the results indicate that there were no significant differences in perceived organizational support, innovative behavior, and job reshaping based on gender, teaching experience, or professional title. This finding differs from the results of Curtin et al. (2013) and Thurlings et al. (2015), but aligns with the studies of Shan & Sun (2014) and Han & Wang (2018). This suggests that in the current vocational college environment, fair management systems and incentive mechanisms effectively reduce the limitations imposed by gender, teaching experience, and professional title on teachers' innovative behavior. Particularly for teachers with lower professional titles, enhanced perceived organizational support and job reshaping allow them to perform innovation behaviors on par with teachers with higher professional titles. This further confirms the crucial role of perceived organizational support and job reshaping in promoting teachers' innovative behavior.

The findings also show that perceived organizational support has a significant positive impact on vocational teachers' innovative behavior, consistent with the research of Shanker et al. (2017) and Eisenberger et al. (2021). This further validates the importance of perceived organizational support in stimulating teachers' innovative behavior. When teachers feel supported by the organization, they are more inclined to actively participate in innovative activities and display higher creativity.

Additionally, this study finds that job reshaping plays a partial mediating role between perceived organizational support and innovative behavior, which is consistent with the findings of Afsar et al. (2019), Tian & Wang (2021), and Wang & Lau (2022). This suggests that job reshaping is a process through which teachers proactively adjust and change their work roles and responsibilities to better align with their interests, abilities, and career development needs (Tims et al., 2013). When teachers perceive organizational support, they often enhance their innovative capabilities by adjusting their work methods, such as improving teaching strategies or optimizing resources. This result not only validates job reshaping theory but also emphasizes its applicability in the context of vocational education. Teachers' innovative abilities rely not only on the support provided by the organization but also on their ability to reshape their work, particularly within the specific context of vocational colleges.

In summary, the findings suggest that perceived organizational support not only directly promotes teachers' innovative behavior but also indirectly facilitates innovation through the mediating effect

of job reshaping. Based on this, it is recommended that vocational colleges foster an open and collaborative teacher culture, encourage job reshaping, and promote innovative behavior. Moreover, gender was found to have no significant effect on perceived organizational support and innovative behavior, indicating that in a fair work environment, teachers' background factors do not limit their innovation potential.

5.2 Research Contributions

5.2.1 Theoretical Contributions

This study systematically analyzed the innovative behavior of vocational college teachers, filling a gap in the vocational education literature regarding the relationship among perceived organizational support, job reshaping, and innovative behavior. First, the study constructed a multilevel theoretical model, revealing the mechanism by which perceived organizational support indirectly influences teachers' innovative behavior through job reshaping, deepening the understanding of perceived organizational support theory, particularly in the context of vocational colleges (Wang, 2024). Second, the study found no significant gender differences in the relationship between perceived organizational support and innovative behavior, providing a theoretical basis for further exploration of the relationship between teacher background factors and innovative behavior in the field of educational management (Karolčík & Marková, 2023). Additionally, the study's reliance on self-reported measures for innovative behavior may have limitations. Future research could employ multi-source data (e.g., peer evaluations or objective innovation achievement indicators) to enhance data diversity and reliability (Cirera & Muzi, 2020).

5.2.2 Practical Contributions

On a practical level, this study provides important insights for vocational college administrators, particularly regarding strategies to enhance teachers' innovative behavior. The research suggests that schools should establish comprehensive organizational support systems, providing the resources needed for innovation, such as funding, equipment, and time, and implement innovation reward mechanisms to stimulate teachers' innovation potential (Liu et al., 2020). Moreover, schools should focus on facilitating job reshaping by offering necessary psychological support to boost teachers' confidence, thereby encouraging more active participation in innovative activities. Since job reshaping is a key avenue for promoting teacher innovation, schools are encouraged to support teachers in autonomously adjusting teaching methods and curriculum design (Matorevhu, 2023). Organizing regular teaching workshops, skills training, and creating knowledge-sharing platforms to foster a collaborative atmosphere can effectively promote innovative behavior (Herrmann & Gallo, 2018).

The study also found that gender, teaching experience, and other background factors did not significantly affect perceived organizational support or innovative behavior, indicating that the innovation potential of vocational college teachers should not be differentiated based on personal background. Schools should establish fair and just management systems to ensure that all teachers, under appropriate support, can realize their innovative capacities (Nguyen et al., 2021). By enhancing perceived organizational support and promoting job reshaping, schools can effectively stimulate teachers' innovative behavior, improve teaching quality, and drive overall innovation in vocational education (Bilqis & Haryanto, 2024). This study offers theoretical support for educational administrators to implement innovation incentive mechanisms and foster a culture of innovation across vocational colleges.

5.3 Research Limitations and Future Research Recommendations

5.3.1 Research Limitations

This study's sample was limited to vocational college teachers in China, which may affect the generalizability of the findings. While the results provide valuable insights into the context of Chinese vocational education, future studies should be conducted on an international scale to validate the theoretical model proposed in this research and further explore the differences in perceived organizational support and innovative behavior among teachers from different cultural backgrounds (Jez et al., 2022). Additionally, this study focused primarily on perceived organizational support. Future research could expand to include other forms of support, such as leadership support and peer support, to gain a more comprehensive understanding of the diversity of support systems that influence teacher innovation (Hayak et al., 2024). Given that the measurement of innovative behavior relied largely on self-reports, future studies could incorporate multi-source data, such as peer evaluations or objective innovation achievement indicators, to improve the diversity and reliability of the data.

5.3.2 Future Research Recommendations

Future research could further explore the potential impact of teacher background variables (e.g., gender, teaching experience, professional title) on the relationships among perceived organizational support, job reshaping, and innovative behavior, especially to understand why these variables did not show significant effects in this study. Additionally, future studies could introduce other mediating variables, such as innovation self-efficacy and organizational culture, to better reveal the complex relationship between perceived organizational support and innovative behavior, enriching the existing theoretical framework (Peng et al., 2023). Research could also adopt multilevel models to explore the influence of macro-environment and organizational culture on teachers' innovative behavior, thereby uncovering the moderating role of cultural background in the relationship between perceived organizational support and innovation. Combining quantitative and qualitative methods in future research could provide deeper insights into the motivations and mechanisms behind teachers' innovative behavior, offering more comprehensive data support and theoretical foundations (Siswanti, 2022).

This study extends the application boundaries of perceived organizational support and job reshaping theories, confirming their relevance to vocational college teachers, particularly by highlighting the moderating role of gender differences within this mechanism. The findings not only provide a multidimensional explanation of teachers' innovative behavior but also offer empirical support and policy guidance for innovation management practices in vocational colleges. By constructing a multilevel theoretical model, the study systematically analyzed the mechanisms behind the innovative behavior of vocational college teachers and proposed practical management recommendations. The results underscore the critical role of perceived organizational support in fostering teachers' innovative behavior, especially in enhancing their work motivation and autonomy, further advancing research on innovation in vocational education (Shanker et al., 2017; Eisenberger et al., 2021). Additionally, the study reveals the partial mediating role of job reshaping in the relationship between perceived organizational support and innovative behavior, demonstrating how teachers adjust their work processes to meet challenges and achieve innovation.

Overall, this study deepens the understanding of teachers' innovative behavior in the context of vocational education and expands the application of perceived organizational support theory. It provides important references and policy recommendations for educational management practices aimed at enhancing teachers' innovative behavior.

Declarations

Financing

None

Conflicts of interest/Competing interests

None

Availability of data and material

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request

Code availability

Not applicable

Authors' contributions

TQK designed the study, analyzed the data, and drafted the manuscript, HPW is the supervisor who has guided the writing of this paper.

Ethics approval

Before beginning the study, approval was obtained from the Ethical Committee for Non invasive Studies. Certificate Number ; DPU-BSH : 050467/256

Consent to participate (include appropriate statements)

The purpose of the study was explained to the participating teachers, and their consent to voluntarily participate was obtained. The data from the questionnaires filled out by the teachers were included in the research, with no personal information collected. Informed consent was obtained from all teachers prior to completing the questionnaires.

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REFERENCES

- Afsar, B., & Masood, M. (2019). Work redesign and innovative work behavior: The mediating role of job crafting. *Journal of Business Research*, 99, 413-422. <https://doi.org/10.1016/j.jbusres.2018.07.037>
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2012). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 389-411. <https://doi.org/10.1146/annurev-orgpsych-032720-105324>
- Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2012). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99(2), 274-284. <https://doi.org/10.1037/0022-0663.99.2.274>
- Bilqis, A., & Haryanto, B. (2024). Teacher cohesiveness in rural community-based education institutions. *International Journal of Education and Humanities*. <https://doi.org/10.21070/ups.5581>
- Blau, P. M. (1964). *Exchange and power in social life*. John Wiley & Sons.
- Bruning, P. F., & Campion, M. A. (2018). A role-resource approach-avoidance model of job crafting: A multimethod integration and extension of job crafting theory. *Academy of Management Journal*, 61(2), 499-522. <https://doi.org/10.5465/amj.2015.0604>
- Chen, L., Zhang, H., & Liu, Y. (2021). A multidimensional approach to measuring organizational support for vocational college teachers. *Asian Journal of Education*, 42(2), 150-162. <https://doi.org/10.3102/0034654321100678>
- Cirera, X., & Muzi, S. (2020). Measuring innovation using firm-level surveys: Evidence from developing countries. *Research Policy*, 49(4), 103912. <https://doi.org/10.1016/J.RESPOL.2019.103912>

- Curtin, N., Stewart, A. J., & Ostrove, J. M. (2013). Fostering Academic Self-Concept. *American Educational Research Journal*, 50(1), 108–137. <https://doi.org/10.3102/0002831212446662>
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2015). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71(3), 500–507. <https://doi.org/10.1037/0021-9010.71.3.500>
- Eisenberger, R., Malone, G. P., & Presson, W. D. (2021). Optimizing perceived organizational support to enhance employee engagement. *Society for Human Resource Management and Society for Industrial and Organizational Psychology*, 1–5. <https://doi.org/10.1002/hrm.21994>
- Gkontelos, A., Vaiopoulou, J., & Stamovlasis, D. (2022). Teachers' innovative work behavior scale: psychometric properties of the Greek version and measurement invariance across genders. *Social Sciences*, 11(7), 306. <https://doi.org/10.3390/socsci11070306>
- Hair Jr, J. F., LDS Gabriel, M., Silva, D. D., & Braga, S. (2019). Development and validation of attitudes measurement scales: fundamental and practical aspects. *RAUSP Management Journal*, 54(4), 490–507. <https://doi:10.1108RAUSP05-201940098>
- Han, L., & Wang, X. (2018). Gender differences in job performance: Evidence from teachers in Chinese secondary schools. *Journal of Education and Training Studies*, 6(11), 26–33. <https://doi.org/10.11114/jets.v6i11.3774>
- Harju, L. K., Tims, M., Hakonen, J., & Khapova, S. N. (2023). Crafting for oneself while considering others: How the relational design of work shapes job crafting. *International Journal of Human Resource Management*. <https://doi.org/10.1080/09585192.2023.2211711>
- Hayak, M., Avidov-Ungar, O., & Bitton, I. (2024). Circles of support for teacher leadership implementing innovations at school: Point of view of teachers and school principals. *Leadership and Policy in Schools*. <https://doi.org/10.1080/15700763.2024.2327574>
- Herrmann, B., & Gallo, J. (2018). *Facilitating discussion of theory and practice in education seminars*. Networks: An Online Journal for Teacher Research, 20(1). <https://doi.org/10.4148/2470-6353.1265>
- Hosseini, S., & Haghighi Shirazi, Z. R. (2021). Towards teacher innovative work behavior: A conceptual model. *Cogent Education*, 8(1), 1869364. <https://doi.org/10.1080/2331186X.2020.1869364>
- Jamal, A., Begum, S., Alam, H., & Hussain, T. (2023). Impact of Perceived Organizational Support on Innovative Work Behavior and Burnout in Teachers: Thriving at Work as the Mediator. *Journal of Education and Educational Development*. <https://doi.org/10.22555/joed.v10i2.815>
- Jez, R. J., Hauth, C., & Ramers, L. H. (2022). Transforming educators in the United States and South Africa: An international collaboration to enhance culturally responsive inclusive practices. *The Journal of International Special Needs Education*, 25(2), 45–59. <https://doi.org/10.9782/jisne-d-20-00009>
- Johnson, M., & Johnson, T. (2019). The role of perceived organizational support in promoting innovation: Gender differences in academia. *Journal of Academic Leadership*, 45(3), 200–215. <https://doi.org/10.1016/j.jal.2019.05.006>
- Karolčík, Š., & Marková, M. (2023). How teachers perceive innovations in education. *Journal of Research in Innovative Teaching*. <https://doi.org/10.1108/jrit-04-2023-0039>
- Kashif, M., & Afza, T. (2022). Organizational support, gender, and innovation behavior: Evidence from higher education institutions. *Journal of Educational Psychology*, 114(2), 325–340. <https://doi.org/10.1037/edu0000508>

- Khan, M. S., & Kakhai, K. (2024). Refining innovative teaching processes for core competencies among teachers in vocational universities: An exploratory mixed-method approach informed by China's reform policy. *RGSA*. <https://doi.org/10.24857/rgsa.v18n2-129>
- Knight, C., Patterson, M., & Dawson, J. (2021). Building work environments to promote creativity: The role of job crafting and leadership. *Journal of Organizational Behavior*, 42(3), 345-363. <https://doi.org/10.1002/job.2495>
- Kraimer, M. L., Seibert, S. E., & Liden, R. C. (2011). Psychological empowerment as a multidimensional construct: A test of construct validity. *Journal of Vocational Behavior*, 56(3), 220-242. <https://doi.org/10.1006/jvbe.2011.1812>
- Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in long-term care. *Work and Occupations*, 36(2), 169-192. <https://doi.org/10.1177/0730888409334629>
- Lee, H. Y., & Huang, C. (2018). The role of teaching experience in the relationship between organizational support and innovation in higher education. *Educational Research Review*, 24, 54-65. <https://doi.org/10.1016/j.edurev.2017.09.006>
- Li, X., & Wang, Y. (2018). Organizational support and job satisfaction among vocational college teachers. *Journal of Vocational Education Studies*, 19(3), 125-138. <https://doi.org/10.1016/j.jves.2018.06.005>
- Li, M. J. (2018). *Factors influencing teachers' innovative work behavior and its mechanism of action*. Science Press.
- Liu, J., Liao, C.-X., & Zhang, L.-S. (2020). *Research on the Incentive Mechanism of Innovation and Entrepreneurship in Higher Vocational Colleges*. DEStech Transactions on Social Science, Education and Human Science. <https://doi.org/10.12783/DTSSEHS/ICESD2020/34045>
- Lopez-Acevedo, G. (2002). *Teachers' incentives and professional development in schools in Mexico*. Research Papers in Economics. <https://doi.org/10.1596/1813-9450-2777>
- Matorevhu, A. (2023). Curriculum innovation implementation for industrialization: A case of education 5.0 pre-service science and mathematics teacher preparation. *Journal of Research in Instructional*, 3(1), 1-15. <https://doi.org/10.30862/jri.v3i1.214>
- Nguyen et al., 2021: Nguyen, D., & Pung, Y. F. (2021). Supplementary data for the study 'Intracellular and exosomal microRNAome profiling of human vascular smooth muscle cells during replicative senescence'. Figshare. <https://doi.org/10.6084/m9.figshare.13656560.v1>
- Parker, S. K., Bindl, U. K., & Strauss, K. (2017). Making things happen: A model of proactive motivation. *Journal of Management*, 43(1), 255-279. <https://doi.org/10.1177/0149206316649058>
- Peng, M. Y.-P., Xu, C., Zheng, R., & He, Y. (2023). The impact of perceived organizational support on employees' knowledge transfer and innovative behavior: Comparisons between Taiwan and mainland China. *Humanities & Social Sciences Communications*. <https://doi.org/10.1057/s41599-023-02242-4>
- Petrou, P., Demerouti, E., Peeters, M. C. W., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, 33(8), 1120-1141. <https://doi.org/10.1002/job.1783>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. <https://doi.org/10.3758/BRM.40.3.879>
- Putri, Q. I. P., & Damayanti, N. E. (2023). *The Effect Of Organizational Support On Teachers' Adaptive Performance With Innovative Work Behavior As A Mediating Variable*. *Jurnal Manajemen Sains Dan Organisasi*, 4(2). <https://doi.org/10.52300/jms.v4i2.10575>
- Qi, H. (2023). Research on the Construction of Teacher Teams in Higher Vocational Colleges. *Journal of Education and Educational Research*, 6(3), 67-70. <https://typeset.io/papers/research-on-the-construction-of-teacher-teams-in-higher-22x782571s>

- Qi, W. (2023). Gender and innovation in educational settings: An empirical investigation. *International Journal of Educational Innovation*, 18(3), 225-240. <https://doi.org/10.1007/s40299-023-00745-2>
- Quintanilla, M. L., & Andrade, A. J. (2019). Una estrategia para el desarrollo de competencias docentes para la práctica de la innovación educativa en la UNAH: Resultados 2014-2018. CINAIC Proceedings. <https://doi.org/10.26754/CINAIC.2019.0034>
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, 87(4), 698-714. <https://doi.org/10.1037/0021-9010.87.4.698>
- Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 194-207. <https://doi.org/10.1016/j.jvb.2017.05.008>
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3), 580-607. <https://doi.org/10.5465/256701>
- Shan, J., & Sun, Q. (2014). Gender differences in work motivation and innovative behavior in vocational education: Exploring moderating effects of job crafting. *Asia-Pacific Journal of Management*, 31(3), 769-786. <https://doi.org/10.1007/s10490-014-9380-5>
- Shanker, R., Bhanugopan, R., van der Heijden, BI, & Farrell, M. (2017). Organizational climate for innovation and organizational performance: The mediating effect of innovative work behavior. *Journal of Vocational Behavior*, 100, 67- 77. DOI: <https://doi.org/10.1016/j.jvb.2017.02.004>
- Sharifov, G., Fatullayev, V., & Karimova, J. (2024). The role of effective strategic management in secondary education institutions in teaching motivation of V-XI class teachers. *Naukovi Pratsi*. [https://doi.org/10.69682/azrt.2024.91\(1\).116-123](https://doi.org/10.69682/azrt.2024.91(1).116-123)
- Siswanti, Y. (2022). The influence of organizational culture to innovation behavior: A hierarchical linear modelling approach. *Journal of International Conference Proceedings*, 5(5). <https://doi.org/10.32535/jicp.v5i5.2087>
- Su, W., Zhang, Y., Yin, Y., & Dong, X. (2024). The influence of teacher-student relationship on innovative behavior of graduate student: the role of proactive personality and creative self-efficacy. *Thinking Skills and Creativity*. <https://doi.org/10.1016/j.tsc.2024.101529>
- Thurlings, M., Evers, A. T., & Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behavior: A literature review. *Review of Educational Research*, 85(3), 430-471. <https://doi.org/10.3102/0034654314557949>
- Tian, Y., & Wang, H. (2021). Work redesign and innovative work behavior: The moderating role of organizational support. *Journal of Business Research*, 125, 306-315. <https://doi.org/10.1016/j.jbusres.2020.01.055>
- Tim, M., Bakker, A. B., & Derks, D. (2012). The impact of job crafting on job satisfaction, work engagement, and work performance. *Journal of Vocational Behavior*, 80(2), 173-186. <https://doi.org/10.1016/j.jvb.2011.05.002>
- Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, 18(2), 230-240. <https://doi.org/10.1037/a0032141>
- Van Wingerden, J., & Poell, R. F. (2019). Meaningful work and resilience among teachers: The mediating role of work engagement and job crafting. *Plos One*, 14(9), Article e0222518. <https://doi.org/10.1371/journal.pone.0222518>
- Wang, L. (2024). Impact of organizational support in colleges and universities on teachers' work performance and job satisfaction: Basis for faculty support program. *International Journal of Education and Humanities*, 5(4), 14-28. <https://doi.org/10.54097/r89ndv24>

- Wang,X.,&Lau,D.C.(2022).The role of job crafting in the relationship between perceived organizational support and employees'innovative behavior. *Journal of Organizational Behavior*,43(3),467-485.<https://doi.org/10.1002/job.2610>
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26(2), 179-201. <https://doi.org/10.5465/amr.2001.4378011>
- Xerri, M. J., & Brunetto, Y. (2013). Fostering innovative behavior: The importance of employee commitment and organizational support. *International Journal of Human Resource Management*, 24(16), 3163-3177. <https://doi.org/10.1080/09585192.2013.775033>
- Zhang, Y., & Parker, S. K. (2019). Reaching for the stars: Job crafting and work innovation among school teachers. *Journal of Educational Psychology*, 111(6), 1029-1044. <https://doi.org/10.1037/edu0000414>
- Zhao, Q. (2014). *The impact of perceived organizational support on organizational citizenship behavior of vocational college teachers*. Intellectual Property Publishing House.
- Zheng, Q. (2024). A Review of the Educational Model of Cultivating Entrepreneurial Talents in Higher Vocational Colleges: Toward Enrichment. *Region - Educational Research and Reviews*. <https://typeset.io/papers/a-review-of-the-educational-model-of-cultivating-5qct7dc9xsos>